Exploring the Personal Financial Information Management of Young Adults

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Abstract

Personal financial records receive limited attention from researchers working in the areas of Personal Information Management, Personal Archiving, and Human-Computer Interaction. Competing definitions and conceptual models of Personal Information do not adequately account for knowledge-production during interactions with personal financial records. This research addresses these gaps by exploring the collections of personal financial data and records of 23 young adults between the ages of 18 to 25 in Montréal and Toronto, Canada. Using guided tours in the homes of participants, research data was collected in the form of audio recordings and photographic examples of financial data, information, knowledge, and wisdom from the context of personal finance. Using Reflexive Thematic Analysis, research data was analyzed deductively using the Wisdom Hierarchy and inductively from a social constructivist perspective. Findings show, young adults interact with personal financial data as the content of self-authored personal financial documents such as spreadsheets and spending logs, directed-to financial records such as receipts and statements, and financial service provider websites and apps. Young adults generated personal financial information through the curation of personal financial data in support of financial sense-making and narrative construction. Young adults generated personal financial knowledge through direct practical experience managing personal financial records and identified other humans as sources of financial knowledge that could be shared through financial socialization. Young adults used personal financial wisdom to manage their personal finances intuitively, control collection volume, and reduce their reliance on financial records to track changes in their financial situation. Some young adults relied on financial service provider information systems to preserve and provide long-term access to large portions of their collections of personal financial records. Emerging adulthood was a critical period for the development of financial records management skills and processes. Learning to create, manage, and use personal financial records is embedded in the social practice of coming of age. Young adults used their collections of personal financial records to reflect on their level of financial responsibility and shape future financial action as they worked towards greater levels of financial independence. Results of this research point to the need for a unified conceptual model of personal information management that incorporates both the knowledge-production and knowledge-transfer perspectives from Information Studies and accounts for both the curation and consumption of personal data as routine human-information interactions with personal records.

Keywords: Personal information management, personal archiving, personal information, financial records, personal finance, emerging adulthood, young adults, sense-making, knowledge-production, coming of age, personal records management

Résumé

Les dossiers financiers personnels reçoivent une attention limitée de la part du milieu de la recherche dans les domaines de la gestion de l'information personnelle, de l'archivage personnel et de l'interaction humain-machine. Les définitions et les modèles conceptuels concurrents de l'information personnelle ne tiennent pas suffisamment compte de la production de connaissances lors de l'interaction avec les dossiers financiers personnels. La présente étude comble ces lacunes en explorant les collections de données et de dossiers financiers personnels de 23 jeunes adultes âgés de 18 à 25 ans à Montréal et à Toronto, au Canada. Au moyen de visites guidées au domicile des participants, des données de recherche ont été recueillies sous forme d'enregistrements audio et d'exemples photographiques de données, d'informations, de connaissances et de sagesse financières dans un contexte de finances personnelles. À l'aide de l'analyse thématique réflexive, les données de recherche ont été analysées de manière déductive à l'aide de la hiérarchie de la sagesse et de manière inductive dans une perspective socioconstructiviste. Les résultats montrent que les jeunes adultes interagissent avec les données financières personnelles comme contenu issu de documents financiers personnels créés par eux-mêmes, tels que des feuilles de calcul et des journaux de dépenses, de documents financiers acquis tels que des reçus et des relevés, ainsi que de sites web et d'applications de fournisseurs de services financiers. Les jeunes adultes ont généré de l'information financière personnelle grâce à la curation de données financières personnelles en appui à la construction de sens financière et à la construction narrative. Les jeunes adultes ont généré des connaissances financières personnelles grâce à une expérience pratique directe de la gestion de dossiers financiers personnels et ont identifié d'autres personnes comme sources de connaissances financières pouvant être partagées dans une optique de socialisation financière. Les jeunes adultes ont utilisé leur sagesse financière personnelle pour gérer intuitivement leurs finances personnelles, garder un contrôle sur l'ampleur des documents accumulés et réduire leur dépendance aux documents financiers pour suivre l'évolution de leur situation financière. Certains jeunes adultes comptaient sur les systèmes d'information des fournisseurs de services financiers pour conserver de grandes parties de leurs collections de dossiers financiers personnels et y garder un accès à long terme. La période de l'âge adulte émergent a été une période critique pour le développement des compétences et des processus de gestion des documents financiers. Apprendre à créer, gérer et utiliser des documents financiers personnels fait partie intégrante de la pratique sociale du passage à l'âge adulte. Les jeunes adultes ont utilisé leurs collections de dossiers financiers personnels pour réfléchir à leur niveau de responsabilité financière et façonner l'action financière future alors qu'ils travaillaient vers une plus grande indépendance financière. Les résultats de cette recherche soulignent la nécessité d'un modèle conceptuel unifié de gestion de l'information personnelle qui intègre à la fois les perspectives de production et de transfert de connaissances provenant des sciences de l'information et qui tient également compte de la curation et de la consommation des données personnelles comme interactions humain-information routinières avec dossiers personnels.

Mots-clés : Gestion de l'information personnelle, archivage personnel, information personnelle, documents financiers, finances personnelles, émergence de l'âge adulte, jeunes adultes, construction de sens, production de connaissances, passage à l'âge adulte, gestion des dossiers personnels

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Chapter 1: Introduction

Young adults rank financial independence as one of the most important symbols of adulthood (Arnett, 1998). To achieve financial independence, young adults need to develop financial skills and practices associated with being an adult that allows them to differentiate their personal finances from those of their parents (Butterbaugh, Ross, & Campbell, 2019; Hoge et al., 2017; Xiao et al., 2014). This includes the ability to effectively track spending, complete financial tasks, and develop financial plans. Personal financial records, such as receipts, statements, budgets, and spending logs are important information resources that support financial tracking, planning, and action but little is currently known about how young adults manage and use personal financial records during the period of emerging adulthood. Emerging adulthood is defined as the period between the ages 18 and 25, as they transition from the social status and responsibilities of adolescence to those of adulthood (Arnett, 2000).

Little is known about how personal financial records support the development of skills and practices in personal financial management even though interactions with financial records is a routine part of managing our personal finances. As an area of research, personal finance, also known as consumer or household finance, “is the study of how institutions provide goods and services to satisfy the financial functions of households, how consumers make financial decisions, and how government action affects the provision of financial services” (Tufano, 2009, p. 229). The financial functions of a household include: (1) the management of payments in and out of household accounts, (2) the management of financial risks and consequences to the household, (3) management of household credit and debt, and (4) management of household savings and investments (Tufano, 2009, p. 229). Personal financial records are important tools for fulfilling the financial functions of a household including documenting financial transactions, evaluating financial risks and consequences of financial decisions and actions, strategic and responsible use of credit and debt, and saving and investing in preparation for the financial future. Despite the importance of personal financial records for consumer or household financial management, financial records are often invisible in the discourse on personal finance.

Financial services are being revolutionized by digital technologies including personal computers, smartphones, and the internet but little is known about how financial service provider information systems impact personal financial records management. Bradley and Stewart (2003) described online banking as “a radical, discontinuous, and disruptive innovation” for the financial services industry that decentralized the bank branch as the main distribution channel for delivery of consumer financial services (pp. 1089-1090). This includes how we access personal financial documents and financial data about us collected by financial service providers. Online banking has become an accepted channel of communication between financial service providers and clients as well as for the transmission of financial records between financial institutions and consumers. The routinization of online banking websites and apps for the delivery of banking services means future adults will need effective skills and practices for the long-term preservation, retrieval, and use of digital personal financial records in response.

Personal financial records are an underexplored type of personal information (PI). Personal information refers to the documents and records that we own and keep for our own use (Lansdale, 1988). Although several researchers in the research area of Personal Information

Management (PIM) recognize financial records as a form of personal information, there are no studies that specifically treat collections of personal financial records as a specific context or case for studying personal information management. How we maintain and use collections of personal financial records as a case of personal information management is a specific gap in the literature addressed by this thesis.

This thesis also uses personal financial data and documents as a case study for exploring theoretical developments and issues in PIM more broadly. Over 40 years of research on personal information management, scholars expanded upon Lansdale's original definition to recognize new forms of PI created by digital technologies. Inclusion of new forms of PI by some researchers resulted in division within the scholarly community and the formation of two distinct conceptual models for PIM. Jones' (2008) "consumption" model recognizes at least six "senses" of PI: (1) the information we control and own, (2) information about us, (3) information directed to us, (4) information we send or share with others, (5) information we experience, and (6) information that is relevant to us (pg. 34). More recently, Bergman and Whittaker (2016) proposed an alternative definition of PI as the information that people actively keep and curate, referred to as the curation model of PIM, which explicitly rejects Jones' "information we experience", "information about us", and "information relevant to us" senses as genuine forms of personal information. Instead, information we experience and information about us are framed as forms of "public information" that people "consume" through information-seeking rather than manage using "curation". Personal financial records on banking apps and websites do not fall neatly into this public versus private distinction. Digital personal financial records can be framed as "information we keep", if downloaded by individuals, "directed-to us" if delivered directly by mail or email, or "information we experience" and "information about us" when individuals choose to access these records through banking apps and websites rather than assuming the role of curator by duplicating and managing these records for themselves. The unique personal financial records available through online banking websites and apps do not become public forms of information when individuals choose not to keep and curate them, pointing to limitations of the personal and public distinction to define personal information. A study of the management of personal financial records and use of digital technologies creates the opportunity to reflect critically on definitions of PI and models of PIM, including how digital tools and information systems complexify the ownership and management of personal records.

In the related field of personal archiving, which is focused on long-term preservation and access to personal records as an area of scholarly research, definitions of personal information emphasize their evidentiary function, as creating records of transactions of the individual and their use as a medium of identity construction, in which people create representations of their characters and lives for themselves and others through documentation practices. Yet recent work on the formation of personal collections highlights how financial records are often considered highly contentious and are frequently omitted from personal collections donated to archives (Douglas, 2015). Limited examples of personal financial records in archival collections of personal papers contribute to the gap in our knowledge of finance as a context of personal information management using archives.

At present, personal financial records have received extremely limited attention from researchers in the areas of personal information management and personal archiving despite how common they are in our day-to-day lives. Little is known about how people keep, manage, and use financial records as a specific form of personal information. Little is known about the ways people create, collect, and use personal financial records to manage their personal finances. This is especially pressing considering the rapid adoption of digital technologies for delivering banking services, which has the potential to usher in new ways of preserving, accessing, and using our consumer financial records. As a case study, personal financial records offer the underutilized opportunity to refine definitions and validate conceptual models of personal information management.

This study came from a desire to understand how digital technologies impact the ways in which young adults interact with their personal financial records. How young adults integrate online banking and digital financial records into their personal financial management processes, and interact with digital personal financial records on banking apps and banking websites remains an unexplored topic in personal information management literature and related works on personal finance during young adulthood. Through a study of personal financial records management, we can better understand the challenges younger adults face while managing their personal financial records and the ways in which financial records management contributes to financial independence and well-being during and after young adulthood.

This study was also motivated by an observation that some studies in personal information management treat the terms “data” and “information” as interchangeable concepts contrary to theories of knowledge-production in Information Studies as the Wisdom Hierarchy (Zeleny, 1987; Ackoff 1989; Bellinger, Castro, & Mills, 2004; Zins, 2007; Rowley, 2007). As a theoretical model of knowledge-production, the Wisdom Hierarchy assumes human “wisdom” and “knowledge” are constructed and accrued from smaller distinct units known as data and information (Zeleny, 1987). Limited uptake of the Wisdom Hierarchy within the area of PIM research means that past work struggles to articulate differences between the management of personal “data”, “information”, and “records”. This is especially pressing in contexts such as personal finance where digital technologies become a primary means for accessing and managing personal financial resources and documentation. More so than ever before, it is possible to manage personal finances through apps and websites without interacting with or managing the documentation associated with personal finance, such as monthly statements. This research examines how information systems change the ways in which we manage collections of personal financial records and the way in which we think about personal information in general.

Furthermore, interactions with personal knowledge and wisdom are not well addressed by the PIM literature. Limited uptake of the Wisdom Hierarchy also means that personal knowledge and wisdom are often beyond the scope of PIM research with limited attention paid to how people develop and apply records management strategies as complementary forms of knowing. Increasing use of digital technologies in personal finance means people will need to develop adaptive financial records management practices in response, to address these issues. I sought to explore collections of personal financial documents maintained by young adults between the ages of 18 to 25 to improve our understanding of the role of financial records in young adult financial management at the same time as exploring theoretical challenges with existing conceptual definitions and models of personal information.

Throughout this study, I use the terms “personal financial records” and “personal financial documents” interchangeably to refer to the digital and paper objects contained within collections of financial documentation that we create, access, use, and keep as part of managing our personal finances. A record refers to information or data stored on a medium expected to persist in the future, used as an extension of human memory or to support accountability, and created and received by individuals and organizations as part of their activities (SAA, 2023). Records create evidence and contextualize activities (i.e., actions, transactions, and events) created as products, by-products, or agents of those activities (Gilliland, 2014). Records are created by participants, observers, or proxies to represent activities (Yeo, 2007). Records provide tangible connections with the past with the intention of informing, communicating, substantiating, explaining, justifying, and evidencing (Dearstyne, 1993). Records support the accuracy and precision of memory in the future using symbols and signs that store data and information (Jimerson, 2009). I chose not to use the term “personal financial information” to avoid conflation between financial documents, their contents, and the meaning and value we generate from them through sense-making processes. One of the main arguments in this thesis is that documents, data, and information do not refer to the same thing according to the Wisdom Hierarchy and therefore should not be treated as synonyms. Rather, this thesis argues that documents can be used to record and store data, information, knowledge, or wisdom in an object form using language and numbers, which allows them to persist over time and full the functions associated with recordkeeping such as evidencing, informing, communicating, substantiating, explaining, and justifying personal financial activities.

This research employs a social constructionist perspective and uses qualitative methods to produce a descriptive and exploratory account of personal financial records management and interaction with digital technologies among younger adults. The results of this study contribute to our theoretical understanding of personal information by exploring: (1) distinctions between data, information, knowledge, and wisdom in the context of personal finances; (2) instances of both knowledge-production and knowledge-transfer occurs during our interactions with personal financial records information, and (3) the ways in which personal financial records management and use as social practices are embedded in and made meaningful through social discourses such as those around financial coming of age and what it means to be an adult.

Research Problem

This research explores how young adults interact with their personal financial data and documents to generate financial information, knowledge, and wisdom in support of financial coming-of-age. At present, little is known about uses and impacts of financial records management in the financial coming-of-age process and the achievement of financial maturity. Consequently, the labor associated with managing financial documentation in domestic settings is invisible and receives very limited technological and professional support. This invisibility of the value generated through PIM can have negative consequences for PIM practice and theory, such as reduced effectiveness of communication and capitalization on insights contained within personal collections as well as artificial and simplistic descriptions of PIM that fail to capture the complex nature of how people manage multiple forms of personal records using a multitude of overlapping tools and strategies (Piras & Zanutto, 2010).

Naturalistic methods are recommended to render invisible practices more visible to researchers, and to expand the context of PIM research beyond the white-collar office space (Naumer & Fisher, 2007). Little is known about how people develop strategies for managing personal information over the human lifespan despite calls from researchers for better tools and strategies for managing personal information as we age (Cushing 2010, 2013; Lindley et al., 2013; Marshall, Bly, & Brun-Cottan, 2006; Marshall, 2007, 2008a, 2008b; Marshall, McCown, & Nelson, 2007). Furthermore, the extent to which financial and records management practices developed early in adulthood are durable over peoples' lifetimes also remains poorly understood due to the invisibility of PIM in personal finance and the limited use of naturalistic inquiry that explores these practices within the broader contexts of people's lives in PIM research. This research uses naturalistic inquiry in the form of guided tours to explore how young adults interact with financial information systems like banking apps and websites, to better understand the influence that financial information systems have on financial recordkeeping among people between the ages of 18 to 25. At present, little is known about how online banking and apps impact how young people interact with personal financial records.

In doing so, I use personal financial record management among young adults as a context for critiquing conceptual definitions of personal information. Several scholars point out that PIM lacks an underlying unifying theory to coordinate development across researchers (Bergman & Whittaker, 2016; Feng & Agosto, 2019; Dinneen & Julien, 2020; Nwagwu & Williams, 2022). How we define PI has important implications for how we conceptualize its management through information behaviors. To effectively manage personal records, we must first have a clear understanding of what personal information is. At present, the PIM research community has identified several properties and categories of PI that do not culminate in a unified definition. For example, Cole (1982) originally identified three categories of PI in personal collections: action information, personal work files, and archival storage. Malone (1983) identified two main categories of personal information in tours of white-collar offices: piles and files. Lansdale (1988) defined PI as the information we own, control, and have affective relationships with. Moen and Brennan (2005) describe four categories of personal health information: just-in-time, just-at-hand-, just-in-case, and just-because. Jones (2008) proposes the senses of personal information as a high-level theoretical definition synthesizing previous work and moving away from the centrality of ownership as PI's defining feature, arguing for the recognition of at least six types of PI among researchers: information controlled by me, about me, directed towards me, sent by me, experienced by me, and relevant to me. Scholars have proposed the term information scraps to describe units of personal information that evoke ideas and support memory (Bernstein, Van Kleek, Schraefel, & Karger 2007; Bernstein, Van Kleek, & Karger, 2008). More recently, researchers also proposed the concept of personal or digital belongings to include a wider array of digital media forms and formats that are maintained using PIM (Cushing 2010, 2013; Lindley et al., 2013; Marshall, Bly, & Brun-Cottan, 2006; Marshall, 2007, 2008a, 2008b; Marshall, McCown, & Nelson, 2007). As one can see from the above examples, there is little consensus among researchers on how to best operationalize the concept of personal information.

In a similar vein, increasing use of digital technologies results in greater use of the concept of data in the area of PIM, although sometimes data is treated as a synonym for documents and information, in ways which are not consistent with "theories of information" such as Buckland's (1991) three principle categories of information (i.e., information as thing, information as process, and information as knowledge) or the Wisdom Hierarchy (i.e., data, information, knowledge, and wisdom) (Zeleny, 1987; Ackoff, 1989; Bellinger, Castro, & Mills, 2004; Zins, 2007; Rowley, 2007). Over the history of PIM research, there is very little consensus on what PI is and how to describe it resulting in the multitude of conceptualizations discussed above. Recent use of the concept of data as an alternative term for information and documents in PIM research (e.g., Vitale, Odom, & McGrenere, 2019) contributes to existing challenges in operationalizing PI. In this thesis, I argue that the Wisdom Hierarchy offers new opportunities for personal information management research and improves the ways in which researchers think and talk about personal "information" and its' management. I suggest the Wisdom Hierarchy provides a theoretical framework that enhances our analytical understanding of the relationship between PIM and the management of other forms of human knowing (such as data and knowledge) while maintaining a distinction between the concept of information and documents. Before we can truly understand how people manage personal information, we must have clear and shared definitions for what PI is and what it is not.

This research falls within the subfields of personal information management (PIM) and personal archiving (PA) in Information Science. PIM and PA intersect with the interdisciplinary field of Human-Computer Interaction (HCI). HCI, "is a discipline concerned with the design, evaluation and implementation of interactive computing systems for human use and with the study of major phenomena surrounding them" (Hewett et al., 1992, p. 5). Research on personal information management often explores how people keep, appraise, organize, and then retrieve documents from their collections of personal information. However, instances of knowledge-production in personal information management are rarely explored within these research areas.

This research makes extensive use of the Wisdom Hierarchy as its theoretical framework, which contains the underlying assumption that information is constructed from data through a process called knowledge-production. This is in direct contrast to the "knowledge-transfer perspective" typically used in PIM, which assumes information is "an entity-like, objective, and neutral informing brick" that can be extracted and transferred from one information user to another in the form of a document by way of an information system (Tuominen, Talja, & Savolainen, 2003, p. 563). Conversely, the "knowledge-production perspective" explores how humans actively construct and negotiate what we know through interaction with the world and in conversation with ourselves and others. The knowledge-production perspective originates from the integration of social constructionism theory into Information Science. Constructionist approaches to information science assume that "information, information systems, and information needs all are entities that are produced within existing discourses" (Talja, Tuominen, & Savolainen, 2005, p. 90). According to constructionism, meaning is made and remade over time through social discourse, which become accessible to researchers through analysis of the language used by participants to describe their actions and rationales. Through the study of young adults and how they manage personal financial records, this research aims to address a gap in the literature on knowledge-production in personal information management and the use of personal records to generate new forms of knowing.

Research Questions

To examine these issues, the following three research questions were posed:

1) How can the Wisdom Hierarchy, as a general theoretical model of information, be used to understand the concept of personal information in a way that harmonizes usage of the terms data, information, knowledge and wisdom in PIM, PA, and HCI research with other areas of Information Studies?

a) What is personal financial “data”? How is it managed?

b) What is personal financial “information”? How is it constructed?

c) What is personal financial “knowledge”? How is it developed and shared?

d) What is personal financial “wisdom”? In what ways does it help young adults achieve financial independence and well-being?

2) How is personal financial data used to construct personal financial information?

a) How are documents implicated in the construction and consumption of personal financial information?

b) How are digital technologies implicated in the construction and consumption of personal financial information?

3) How are young adults’ perceptions of personal financial record management shaped by social discourses and social practices?

a) What role do personal financial records management play in financial coming of age?

b) How are personal financial records implicated in the construction of adult financial identities?

The answer to these questions contributes to scholarly discussion on the topic of personal information in the following ways. The first research question evaluates the suitability of the Wisdom Hierarchy to serve as an alternative theoretical framework for operationalizing personal information and conceptually mapping personal spaces of information (Kwasnik, 1989, 1991) and personal information environments (Malone, 1983). It explores the theoretical value generated by differentiating information from other categories of human knowing (i.e., data, knowledge, and wisdom) and assesses the extent to which data, knowledge, and wisdom is managed in parallel with information and personal documents. The answer to this question has the potential to expand the scope of PIM research and articulate the relationships and boundaries between the siloed research areas of data, information, and knowledge management.

The second research question explores knowledge construction and consumption in managing personal financial records. It investigates how young adults use personal financial records and technologies to answer their financial questions and achieve their financial goals. Through this question, I reflect on the strengths and limitations of the two competing conceptual models of PIM, which will be discussed in greater detail in Chapter 2. The answer to this question can highlight the strengths and limitations of each model to capture the interactions young adults have with personal financial records, ultimately contributing towards the development of a unified theory of PIM.

Lastly, the third research question explores the social meaning and value associated with personal financial records management during the period of emerging adulthood. It explores how young adults make sense of themselves while making sense of personal finances. The answer to this question can render the management of personal financial records less invisible in research areas outside of Information Studies including the literature on personal finance during emerging adulthood.

Study Design

The participant group chosen for this study were young adults ages 18 to 25 from the greater Montréal and Toronto areas. Review of the literature indicated that the years of emerging adulthood, defined as the ages of 18 to 25, represents a critical developmental period for the construction of adult social identities during which young adults take significant steps towards achieving financial independence (Arnett 1998, 2000, 2006). Little is known about how the development of financial records management skills and practices contributes to self-perceptions of financial adulthood and financial well-being. The cities of Montréal and Toronto were selected because of their status as the largest urban centers in Eastern Canada, which attract many young adults due to the large number of economic and educational opportunities available in these locations.

Research data was collected in the homes of young adult participants using guided tours. Twenty-three participants were recruited for the guided tours using a combination of classified ads, posters, social media, and word of mouth. During the guided tours, participants were asked to show the researcher personal financial documents as well as the tools, technologies, and the spaces in their homes where they normally interact with and store their collection of personal financial records. The home was selected due to the technical definition of consumer or personal finance as “household” finance, which takes place in domestic settings. The home was also selected because of a tradition within PIM research of using “guided tours” to collect research data. Guided tours have the advantage of allowing researchers to make observations of personal documents and human-information interactions in their “natural habitat”. Researchers routinely audio-record the conversations they have with participants during their guided tours and take photographic examples of documents and spaces featured by participants.

Reflexive Thematic Analysis (RTA) (Braun & Clarke, 2006; 2009a; 2009b) was used to analyze the transcribed guided tour research data. Three separate but interrelated analyses are presented in this dissertation. First, the guided tour data was analyzed deductively using the Wisdom Hierarchy as a theoretical coding scheme to identify examples of personal financial data, information, knowledge, and wisdom captured by the data collection process. Second, the entire dataset was analyzed inductively to explore examples of interactions with personal financial data, information, documents, and digital tools including online banking apps and websites. Finally, the entire dataset was analyzed inductively for a second time to explore the topic of financial identity and coming-of-age.

Personal Information Management, Personal Archiving, and Human-Computer Interaction were chosen as the subfields through which to explore this topic based on the following assumptions: (1) Personal financial records are a form of personal information, (2) their management is a form of personal information management, (3) their long-term preservation is a form of personal archiving, (3) digital tools such as online banking websites and apps support interaction with digital financial records. These three research areas can be combined to reflect critically on the strengths and limitations of current definitions and theories of personal information.

Thesis Outline

This chapter provided an overview of the context, gaps, and rationale that motivated this research. I introduced the theory of emerging adulthood and explained how achieving financial independence is an important symbol of financial adulthood. I defined personal finance and summarized the financial functions of a household. Then I reflected on the increasing use of digital technologies for personal finance and their disruptive potential for how we manage personal financial records. Next, I introduced the concept of personal information and identified the study of personal financial records as a gap within the literature on personal information. Then I introduced the Wisdom Hierarchy as the theoretical framework informing this research. I clarified my own use of the term “personal financial records” instead of “personal financial information” as part of a strategy to differentiate between data, information, knowledge, wisdom, and documents in the context of personal financial records management. Afterwards, I presented my research questions and provided a basic overview of the problem, research design, participants, and methods used to collect data and answer my research questions.

Chapter 2: Literature Review reviews related works on personal finance during emerging adulthood. I identify Kaye et al.’s (2014) work on users of financial information systems as the most closely related work. Next, I turn to a detailed overview of conceptual definitions, models, and theories of personal information from the research area of Personal Information Management. I discuss ways in which the definition of personal information has expanded over time resulting in disagreement within the field about how to define personal information resulting in two distinct conceptual models of PIM. Then, I review related works from the research area of Personal Archiving, which provide an alternative approach for defining personal information. I discuss ways in which definitions of personal information in Personal Archiving have shifted away from discussions of functions of personal records as a medium of identity construction and memory support towards an object-oriented reframing as digital belonging or possessions in response to increasing use of digital technologies in everyday life. Lastly, I explore related works that express anxieties about the potential negative impacts of digital technologies on the long-term preservation and access to personal information in digital forms.

Chapter 3: Methodology describes my research approach. I discuss the research questions that guided my data collection along with the epistemological, theoretical, and methodological frameworks used in this research. Then I describe the procedural methods used to recruit participants, collect, and then analyze the data, which is presented in subsequent chapters of this thesis. I reflect on the ethical considerations I made to balance potential risks and benefits when using guided tours to study personal financial records as well as the processes I used to control quality during my data collection and analysis phases. Lastly, I identify limitations of this study.

Chapter 4: Participants and Demographics introduces the young adults who participated in this research. I provide a pseudonym and brief biographical statement as contextual background for each participant. Next, I present a descriptive quantitative analysis of demographic data collected upon completion of each guided tour before turning to the findings of the guided tours in the following three chapters.

Chapter 5: A Hierarchy of Personal Financial Information presents the findings of a qualitative deductive analysis that applies the Wisdom Hierarchy as a theoretical coding scheme to identify and analyze examples of data, information, knowledge, and wisdom from the guided tour data. I present photographic examples collected during the guided tours as well as excerpts from discussions that support my interpretations. I distinguish between “self-captured” and “system-captured” personal financial data and discuss how both forms are used to generate personal financial information by young adults. Then, I use my findings to reflect on the suitability of the Wisdom Hierarchy to reconceptualize personal information.

Chapter 6: Knowledge Production Through Curation and Consumption of Personal Financial Data presents the findings of an inductive Reflexive Thematic Analysis (Braun and Clark, 2006, 2019) that focuses specifically on knowledge-production of personal financial information from personal financial data curated and consumed by young adults. I provide a deeper analysis of examples of personal financial data and personal financial information encountered during the guided tours. Examples of curation are then contrasted with examples of consumption of personal financial data available through financial information systems such as online banking websites and apps. I interpret the use of financial service provider information systems as a preservation strategy as an example of what Kaye et al.’s (2014) term use of the “financial touch” to manage personal finances and a form of what Marshall (2006, 2007a, 2007b, 2008a, 2008b) refers to as “opportunism” and “benign neglect”.

Chapter 7: Coming of Age Through Personal Financial Records Management presents the findings of a second inductive Reflexive Thematic Analysis (Braun and Clark, 2006; 2019) that focuses specifically on examples of personal financial knowledge and wisdom. In doing so, it explores the ways in which personal financial records management is implicated in social discourses about financial independence and social practices around coming of age. Participants shared several instances in which parents engaged in knowledge-transfer of personal financial skills and practices to help prepare their young adult offspring for financial adulthood. I also discuss examples of personal financial wisdom, which some participants describe as contributing to their increased use of the financial touch as a financial management strategy.

Chapter 8: Conclusions concludes this thesis by reviewing the contributions made by this study to our understanding of personal information and the role of personal financial records management in the coming-of-age process. Then, I discuss the practical implications of the findings for the design of pedagogical tools and personal financial information systems for young adults as a target user group. Lastly, I identify opportunities for future work that can address limitations of this study and validate the findings presented in this thesis.

Chapter 2: Literature Review

In this chapter, I review related literature from the research areas of Human-Computer Interaction (HCI), Personal Information Management (PIM), and Personal Archiving (PA). This literature review aims to achieve the following objectives: (1) to describe the closest related works on personal financial records management and financial literacy among young adults, (2) to provide a detailed overview of concepts and models of personal information used by Information Studies researchers, and (3) to discuss issues and challenges related to the use of information technologies to preserve and provide long term access to personal records. Through each section, I identify gaps that can be filled by this doctoral research. Rather than review publications by financial professionals such as economists or accountants, this chapter focuses on developing an information-centric perspective on personal financial records that is firmly rooted within a humanistic approach to Information Studies.

First, I will review the most closely related works specifically on financial record management and young adults. To date, few researchers have explored the topic of personal records management in household finance. Only a single study on personal financial records and adults from an HCI perspective was identified through a search of the literature. Due to the gap in the literature on personal financial records and young adults, I review additional studies on personal finance during emerging adulthood. Despite related works on personal finance and emerging adulthood, past work has not explored the development of personal financial records management skills and knowledge during this age period as part of a coming-of-age transition.

Next, I review key concepts, theories, and findings of related works on specifically personal information from an Information Studies perspective. No works specifically on personal financial records and young adults were discovered during review of the Information Studies literature. As a result of these gaps, my review in this area focuses more deeply on conceptual definitions and theories of personal information that can inform an exploratory study on personal financial records and young adults. I compare related publications from the research areas of Personal Information Management (PIM) and Personal Archiving (PA) as well as trace evolutions in conceptualization of personal information within each research area. Finally, I review publications that identify challenges related to the preservation of personal records and use of digital tools.

Related Works on Personal Finance, Digital Tools, and Aging

The most closely related works discovered during search of the literature comes from the research area of Human-Computer Interaction (HCI). These are Kaye et al.'s (2014) study on financial tracking and use of the "financial touch" to obtain quick heuristic glimpses of their financial situation and Vines et al.'s (2011, 2012a, 2012b) work on the financial accessibility of older adults. Related work in HCI focuses on the relationship between digital technologies and personal finance. First, I will discuss the mostly related work from HCI before turning to related works on Emerging Adulthood, which represents a second body of related literature on personal finance and aging.

There is limited literature to draw upon for understanding use of personal financial records and digital technologies from an Information Studies perspective. Lemieux (2010) was the first to recognize financial information as a gap within the Information Studies literature and called for increased effort to include financial records as a focus of research by information professionals. Due to limited attention to financial records, information professionals have limited tools and frameworks for describing and supporting research with financial records contained within institutional collections. As a first step in addressing this gap, Lemieux constructs a preliminary definition of "financial records" as,

> all those records, regardless of the context of creation, arising from financial functions, activities, processes, and transactions. A function, activity, process, or transaction may be considered financial if it has to do with money (Lemieux, 2010, p. 175).

Financial records are the outcome of financial processes, activities, and interactions of humans. The distinguishing characteristic of financial records as documents are their structured numeric contents and monetary subject matter (Lemieux, 2010, p. 175-179). As records, they document financial transactions, capturing both the relationships humans have with money and the financial relationships between humans. Lemieux's high-level definition encompasses financial records from all sources and contexts of creation, and therefore does not distinguish between personal financial records, those created and collected by individuals that are maintained in the home, from other kinds of non-personal financial records, such as those recording the transactions of governments in the public sphere or businesses in the private sphere.

In this thesis, personal financial records refer to financial information items such as receipts, bills and e-bills, account statements, contracts, budgets, transaction logs, financial reminders, and other money-related documentation created or collected by individuals and households. These items are commonly found within our homes and on our persons in our wallets, bags, and pockets. Increasingly, our personal financial records are also accessed from a variety of virtual spaces such as our computer hard drives and through the internet via the websites and apps of financial and household service providers. Personal financial records are the paper and digital documents that record financial transactions, and we use personal financial records to manage our personal finances. Even though personal financial records are an extremely ubiquitous form of "personal information" that we interact with regularly in our day-to-day lives, there is a surprisingly limited amount of research specifically on how we use and manage our personal financial documentation. This gap is especially surprising given how authors in the areas of PIM and PA frequently include financial records within descriptive examples of personal information (e.g., Jones & Teevan, 2007; Marshall, 2007; Whittaker 2011).

Related Works on Personal Finance in HCI

The most closely related work in HCI is a study by Kaye et al. (2014), which explored how 14 adults between the ages of 26 to 69 keep track of their money. They were interested in how people use financial documentation and information systems to manage their personal finances. Using a series of in-home guided tours, they sought to better understand how people think of their personal finances to explore opportunities for design and improvement of user experiences with financial information systems (Kaye et al., 2014, p. 521). During their interviews, participants were asked to give a guided tour of the financial items in their wallets or purses as well as to provide the researchers with an introduction to the spaces and digital tools in their homes that they normally use for any financial management tasks. They found that people used a variety of emotional, historical, familial, and personal experiences as resources to make financial decisions and navigate everyday financial situations (Kaye et al., 2014, p. 523).

Emotions were a primary resource that informed financial decisions and that many of the emotional experiences that participants reported during financial management were negative, including anxiety, stress, and discomfort (Kaye et al., 2014, pp. 523-524). People tended to divide their personal financial resources into smaller "pots of money" that are managed independently from each other and reflect the distinct financial goals and intentions of their owners (Kaye et al., 2014, p. 525). Examples of divisions within personal financial collections included having separate wallets for cash and coupons, maintaining separate collections of financial records for work and home finances, and managing a collection of financial records on behalf of a dependent family member or friend in parallel with their own (Kaye et al., 2014, pp. 524-526). Additionally, Kaye et al. noticed that people generally have limited access to reliable and complete information about their finances, which impacts their ability to make financial decisions and plans (Kaye et al., 2014, pp. 528-529). They recommend future work examining the criteria people use to evaluate the quality and trustworthiness of financial information and identify design opportunities that help people explore and predict possible outcomes of future financial decisions (Kaye et al., 2014, p. 530).

Kaye et al. share two specific observations that they made about the variety of tools and everyday practices that people use to track portions of their financial lives of relevance to a study of financial records management of young adults. First, they noticed some participants made extensive use of a style of interaction they refer to as "the financial touch". Using bank account balances and recent transaction details available through financial information systems such as online banking websites and apps, the financial touch provides transitory, ephemeral, yet reassuring "occasional glimpses at the complex whole" of a person's current financial situation

(Kaye et al., 2014, p. 526). Use of the financial touch is a financial management strategy based on consumption of limited personal financial data specifically aimed at detecting anomalous or unexpected financial events (Kaye et al., 2014, p. 526). Kaye et al.'s observation on use of the financial touch raises unanswered questions about use of digital financial tools and information systems by other groups such as young adults. At present, no other studies validate their findings on use of the financial touch as a financial management strategy and little is known about how widespread use of the financial touch is among other user groups, such as young adults.

Second, Kaye et al. note how few participants made use of high-tech solutions such as state of the art financial aggregation systems like Mint.com, Quicken, or FinanceWorks to track their personal finances and construct comprehensive overviews of their financial situation (Kaye et al., 2014, p. 526). Although some digital tools such as spreadsheets were used by some participants, their use was described as "a dumping ground for heterogeneous data… the unstructured digital clutter of modern life" including URLs, usernames, passwords, account numbers, PINs, and associated email addresses (Kaye et al., 2014, p. 528). Surprisingly, Kaye et al. noted a strong preference for use of paper information items and systems over digital tools among their participants. Examples of valued paper tools for managing personal finances included index cards, notebooks, calendars, and folders (Kaye et al., 2014, pp. 526). Kaye et al.'s observations suggest that specialized financial information systems suffer from low levels of adoption and digital tools that are adopted for managing personal finances such as spreadsheets are not used to their fullest potentials. At present, little is known about how widespread the preferences for paper tools and records for managing personal finances is, nor whether other user groups such as young adults are slow to adopt specialized tools and information systems for tracking their personal finances and maintaining a comprehensive picture of their financial situation.

Past work in HCI has also explored the topic of personal finance and aging, noting how digital technologies can result in dramatic changes in social connection and participation. Vines et al. (2011, 2012a, 2012b) conducted a series of studies aimed at improving financial participation of the "older old", or adults defined as 80 years of age and older. They found that social isolation was an unintended consequence of online banking due to their disembedding of social interactions centered around exchanges of physical money in society (Vines et al. 2011, p. 68-9). As a result, older adults can experience a reduced sense of social belonging within their local communities as more people and businesses embrace digital financial technologies. Older adults associated the management of personal finances with a greater sense of personal autonomy, independence, and control over one's destiny, highlighting how personal identity and sense-of-self can be deeply connected to our personal finances (Vines et al. 2011, pp. 67-68). Focusing specifically on uses of cash and other tangible financial technologies, such as cheques, Vines et al.'s body of work did not explore the impact of digital technologies on the financial records kept and managed by older adults, providing another example of the invisibility of records management as an essential component of everyday financial management.

Feng and Agosto's (2019) recent investigation of activity trackers can also be considered among the closest related works to the study presented in this thesis. They found that automation of the management of personal data enabled by digital technologies such as fitness trackers reduces demands experienced by users to keep and organize personal records. Instead, digital tools enable closer interactions between users and the data collected about them by digital technologies, which the authors interpret as increased time and energy to focus on meta-level activities that generate insights from personal records and satisfaction of information needs beyond finding and reminding users (Feng & Agosto, 2019, p. 1361-1362). Users were described as using personal records created using activity trackers to develop new understandings about the self, such as patterns in one's fitness activity levels over time. Maintaining motivation and personal accountability among users were novel functions of personal records that emerge when information technology designs reduce curatorial burdens experienced by records managers. This study highlights the need for additional research that examines how novel digital technologies change the ways we manage and interact with personal records, such as those generated in the context of personal finance.

Related Works on Personal Finance and Emerging Adulthood

Now I turn to a review of related works on personal finance and young adulthood from the field of developmental psychology in response to the gaps on personal finance in personal information management literature and young adults as a particular user group on interest in the study of personal financial records more broadly. Developmental psychology is a subfield of psychology that focuses on human growth, including physical, cognitive, social, intellectual, perceptual, personality, and emotional changes that help us adapt to different stages of our lives (APA, 2014). The most notable related work in developmental psychology comes from scholars exploring the transition from adolescence to adulthood referred to as "Emerging Adulthood"

(Arnett, 2000, 2006). Within this area, researchers have explored the role personal finances play in the construction of adult identities and lifestyles.

Emerging adulthood is roughly defined as the period between the ages of 18 to 25 (Arnett, 2000, 2006). Arnett coined this term to name this coming-of-age process and describes those within the age range of 18 to 25 as “young adults” (Arnett, 2000). Young adulthood is theorized as a distinct psychological stage of development during which people transition from a pre-adult to full-adult social status, identity, and lifestyle (Arnett, 2006, p. 4). The theory of emerging adulthood argues that there are five distinct features of this transition that differentiate it from adolescence and adulthood. Young adulthood is defined as: (1) an age of identity exploration, (2) an age of self-focus, (3) an age of instability illustrated by enhanced geographic mobility and dramatic changes in residence among people within this age range, (4) an age where people reflexively feel in-between the life stages of adolescence and adulthood, and (5) an age of optimism, flexibility, and self-transformation (Arnett, 2000, 2006). One of the major themes in this journey is the development of adult independence and personal responsibility for one’s actions, decisions, and finances (Arnett, 1998).

As an age of exploration, emerging adulthood is a period where young adults are free to explore different lifestyles, in relation to work and romance (Arnett 2006, p. 8). During the ages of 18 to 25, young adults are expected to have frequent changes in employment and experiment with different kinds of romantic partnerships as they discover lifestyle opportunities available to them in adulthood. As an age of self-focus, the period of emerging adulthood is a time of reduced social obligation, duty, and commitment (Arnett, 2006). During the ages of 18 to 25, young adults are afforded greater freedom to experiment with different lifestyle choices as well as reduced levels of responsibility and severity of consequences in comparison to full adults. As an age of instability, the period of young adulthood is characterized by high geographic mobility and frequent changes in residence among young adults (Arnett, 2006). During the ages of 18 to 25, many young adults move out of their parents' home for the first time to establish their own independent households, sometimes at great geographic distance from the locations where they spent their youths. As an age of in-between, the theory of emerging adulthood argues that young adults experience themselves in a liminal stage where they are neither adults nor adolescents (Arnett, 2006). Arnett argues that the coming-of-age experience is gradual without precise start and endpoints such as transition events like graduation or marriage (Arnett, 2006, p. 12). Rather, young adults self-aware of being neither children nor adults during their emerging adulthood period but have difficulty identifying the phase gates of the transition. As an age of possibilities, the theory of emerging adulthood argues that the age period of 18 to 25 is characterized by optimism and hope for the future, where young adults see themselves as capable of dramatic self-transformation and change (Arnett, 2006, p. 13). As such, emerging adulthood is theorized as a period during which young adults positively evaluate and embrace change.

The features of emerging adulthood have potential financial implications that can be leveraged to study the development of financial record keeping skills and practices. As an age of instability, changes in residence and moving away from parents' homes has the potential to usher in new financial responsibilities and obligations associated with independent living and managing a household as an adult, including the management of personal financial records. As an age of exploration and self-focus, young adults may experience opportunities to explore and practice different styles of financial management with limited liability for potential errors that might result from experimentation and learning through trial and error. As an in-between age, young adults might be reflexively aware of the differences between their financial records management prior to the years of emerging adulthood and the skills and practices possessed by those who successfully completed the transition to financial adulthood. As an age of possibilities, young adults may also develop goals and expectations for their future financial records management practices that they incrementally work towards as part of achieving financial independence and well-being. Emerging adulthood offers many opportunities to explore the development of financial records management skills and practices.

At present, previous work as not explore personal financial records management as a subjective quality of adulthood despite recognition of achieving financial independence as part of the coming-of-age process (Arnett 1998, 2000). Despite this gap, researchers in developmental psychology have explored other financial aspects of emerging adulthood. Financial independence is recognized as a key outcome of the coming-of-age process, through which young adults develop the subjective feeling of competence in managing one's financial affairs and living separately from parents or guardians (Butterbaugh, Ross, & Campbell, 2019, p. 36). Leaving the home of parents or guardians is a key precipitating factor for achieving financial independence and developing foundational financial skills and practices (Butterbaugh, Ross, & Campbell, 2019; Hoge et al., 2017; Xiao et al., 2014). Successful achievement of financial independence is associated with financial well-being, defined as being able to meet financial obligations, feeling secure in their financial future, and making fiscal decisions that allows enjoyment of life (Butterbaugh, Ross, & Campbell, 2019, pp. 36-37). Financial well-being conveys a sense of financial maturity and functioning associated with adulthood and successful coming of age. Mary (2014) found that young adults defined financial adulthood as a combination of both personal qualities and social roles and expectations (Mary, 2014, p. 425). To successfully transition to financial adulthood, a young adult must both reflexively see themselves as possessing the qualities associated with financial maturity as well as fulfill social and legal criteria that define financial adulthood within their given society. Psychological maturity and sense of responsibility were the most identified self-reflexive criteria used to identify as a financial adult (Mary, 2014, pp. 425-426). In contrast, “transitional roles” (e.g., becoming a parent) and “transitional events” (e.g., completion of post-secondary education) are rarely viewed as societal markers of financial coming-of-age by young adults (Arnett, 1998; Mary, 2014, pp. 425-426). Changing socio-political, economic, and cultural conditions since the 2008 financial crisis created a cultural shift in the criteria people used to define financial maturity (Mary, 2014, p. 426). Previous work has not explored how the adoption of digital financial technologies and development of skills and practices for managing digital financial records contributes to shifting criteria used to define financial maturity.

Researchers of personal finances during emerging adulthood recognize the importance of parents as teachers of personal finance who support the development of financial management skills and practices. This process is referred to as financial socialization (Mary, 2014; Lanz, Sorgente & Danes, 2019; Damian, et al., 2019; Allsop et al., 2020). Parents can support the achievement of financial independence by both providing and withdrawing financial support, reflecting different cultural values and archetypes of coming-of-age (Mary, 2014). Positive parent-child communication about personal finances resulted in higher levels of imitation of parental financial strategies by younger adults and higher subjective reports of financial well-being (Lanz, Sorgente and Danes, 2019, p. 7). As role models, parents are hypothesized to contribute to greater financial well-being among young adults through knowledge-transfer as they pass down financial know-how to younger generations. Financial dependence on parents increased likelihood of identifying parents as financial role models among young adults who lived away from their parents during their young adult years (Lanz, Sorgente, & Danes 2019, p. 8). Adolescence is a critical period for acquiring basic financial skills and knowledge, with young adults internalizing financial guidance and financial management practices received from parental role models (Damian, et al., 2019, p.5). The financial management practices of young adults were positively impacted by high levels of parental participation in financial management during adolescence such as parental monitoring of young adult spending and budgeting (Damian, et al., 2019, p. 5). Young adults with high levels of parental financial socialization expressed fewer financial difficulties and worries during emerging adulthood (Damian, et al., 2019, p. 5). Parental financial socialization was also credited with reducing the negative emotions accompanying the management of personal finances. As role models, parental financial behavior and parental financial distress were associated with the financial outcomes of young adults (Allsop et al., 2020, p. 585). Young adult children of financially stable parents tend to be more financially stable while young adult children of financially distressed parents tend to be more financially distressed during emerging adult years (Allsop et al., 2020, p. 585). Parental financial well-being did not predict earlier financial independence of emerging adults, suggesting that young adults with financially stable parents benefit from extended periods of financial support (Allsop et al., 2020, p. 586). As a result, it can be argued that young adults from higher socio-economic statuses may experience an elongated transitionary period and less pressure within their families to achieve financial adulthood in comparison to young adults from less secure socio-economic backgrounds. Although the impact of financial socialization by parents on young adults' financial situations remains unclear, parents are encouraged to take responsibility for financial knowledge-translation by teaching young adults about personal finances and how to cope with financial distress (Allsop et al., 2020, p. 587). Previous work has not explored parental socialization of financial records management and the influence parental modeling of financial recordkeeping might have on young adult financial independence and well-being.

More recently, Vosylis, Sorgente, and Lanz (2021) found support for an experimental three-factor model of identity formation in young adult financial behaviors (p. 9). Their three-factor model conceptualizes the financial coming-of-age process as a combination of three processes: (1) developing and committing to defined processes for managing personal finances, (2) active reflection and in-depth exploration of their current financial management practices, and (3) comparison of current practices with alternatives, especially when young adults experience dissatisfaction or limitations with their existing practices (Vosylis, Sorgente, & Lanz, 2021, p. 3). Young adults who experience dissatisfaction often explore alternatives for managing personal finances and develop uncertainty about the effectiveness of their current practices (Vosylis, Sorgente, & Lanz, 2021, p. 9). As a result, evaluating the effectiveness of their own financial management practices is an important information need young adults have during the ages of 18 to 25. The flexibility of young adults can have unintended negative consequences, with frequent changing of financial management strategies contributing to experiences of financial distress and difficulties (Vosylis, Sorgente, & Lanz, 2021, p. 11). Changes in financial conditions can trigger uncertainty about the effectiveness of financial practices leading to practical challenges meeting financial commitments and expectations. Experiences of financial stability results in higher levels of commitment to existing financial management practices and strengthens the confidence young adults have in themselves as financial actors (Vosylis, Sorgente, & Lanz, 2021, p. 11). Active reflection is recommended as an intervention for addressing experiences of financial uncertainty, helping young adults solidify financial identities, and strengthening commitment to financial practices, which may ultimately lead to successful achievement of financial independence and completion of the transition to adulthood (Vosylis, Sorgente, & Lanz, 2021, p. 11). Although uncertainty about the effectiveness of financial management practices points to an identified information need, the role of data, information, and financial records in supporting active reflection and objective assessment of financial competency remains unexplored. Next, I provide an overview of the concept Personal Information (PI) within Information Studies, first from the research area of Personal Information Management and then from Personal Archiving.

Defining Personal Information

Concepts of Personal Information from Personal Information Management

In this thesis, personal financial records are considered a form of personal information. Several authors in the research area of Personal Information Management also recognize financial records as a form of personal information. Cunningham (1994) identifies domestic budgeting as a form of personal information that might be lost from institutional archives because of increasing use of digital technologies. Cox and Duff (1997) include financial records within the growing genre of personal information encountered within archival collections. Bergman and Whittaker (2016) identify personal financial documents such as financial records and tax forms as having high uniqueness thus requiring curation effort by individuals. Despite recognition of personal financial records as a form of personal information, no studies were discovered that specifically explore the management of personal financial records apart from Kaye et al. (2014) during review of the literature. Due to this gap, this section of my literature review provides an overview of concepts of personal information instead that can in turn inform this study of young adult personal financial records management.

Overall, there appears to be limited consensus among researchers within information studies on how to define personal information despite widespread use of the term within the literature. Usage of the term personal information can be traced back to Lansdale's (1988) foundational paper on the psychology of personal information management. Since Lansdale's original coining of the term "personal information", several researchers from the area of PIM have built upon or proposed alternative ways to define personal information. Researchers in Personal Archiving also proposed several definitions of personal information, with limited degree of overlap with those proposed within the area of PIM. Consequently, there appears to be limited interaction between these two research areas. First, I will discuss uses of the term personal information in Personal Information Management. Afterwards, I will contrast with concepts of personal information from the area of Personal Archiving.

In its original conception, personal information was defined as the information resources people possess and maintain for their own use in work (Lansdale, 1988, p. 55). Personal information includes everyday information items such as, “books, notes, folders, diaries, personal records, [and] files” (Lansdale, 1988, p. 55). People keep personal information because they intend to use it in the future, which necessitates the development of methods and procedures to, “handle, categorize, and retrieve” it when needed, which is recognized within the literature today as the “management” of personal information (Lansdale, 1988, p.55). Successful retrieval of PI was connected to the visual and spatial attributes of documents, including their appearance, format, and location within a workspace (Lansdale, 1991). Observation that visual and spatial attributes of PI are encoded into people’s memories at the time of handling established the organization and retrieval of personal information as the main areas of interest in subsequent PIM research.

Lansdale (1988) also makes an explicit distinction between “personal information” and “private information,” “this is personal information not necessarily in the sense that it is private, but that we have it for our own use. We own it and would feel deprived if it were taken away” (p. 55). Ownership over the record is a foundational characteristic of personal information. Lansdale was the first to notice that many of the records people keep and maintain are duplicates of documents already within the public domain, such as a published book or newspaper article. Some forms of personal information are also private information, meaning that they are not available from public sources or might contain personally identifying information requiring careful access control, which can be argued is the case for personal financial records such as credit card and banking statements that are not available in the public domain due to their sensitive contents. Thus, personal information is the documents that we own and that we maintain for our own purposes as part of our work and home life, which may include copies of documents from the public domain. Personal information also refers to documents that we have an emotional attachment to, that is felt when our access is restricted or lost. Although private information might also be a form of personal information, not all personal information is inherently private.

Jones and Teevan (2007) propose the two terms, "information item" and "information form" to help us describe and talk about personal information. An information item is defined as "a packaging of information in a persistent form that can be acquired, created, viewed, stored, grouped (with other items), moved, given a name and other properties, copied, distributed, moved [sic], deleted, and otherwise manipulated" (Jones & Teevan, 2007, p. 7). The concept of information item refers to the object-sense of personal information that can be acted upon and interacted with by humans. An information form (or information type) "is determined by the constellation of tools and applications that make it possible to manipulate (acquire, create, view, store, etc.) the item" (Jones & Teevan, 2007, p. 7). Information forms support different modes of interaction with information items by use of tools and technologies (Jones & Teevan, 2007, pp. 7-8). Since Lansdale's original coining, PIM researchers have explored several different categories of information forms as examples of personal information, summarized in Table 1.

Table 1

Summary of Forms of Personal Information in Previous Works

Personal Information Form	Associated Researchers
Documents	Kwasnik, 1991; Gonçalves & Jorge, 2003
Written information	Case, 1986, 1991
Books	Malone 1983; Case, 1986, 1991
Notes	Malone 1983; Case, 1986
Files	Carroll, 1982; Cole, 1982; Case, 1986 Boardman & Sasse, 2004; Bergman et al., 2008; Kaye et al., 2006
Stacks	Malone, 1983; Case 1986

Digital folders	Barreau & Nardi, 1995; Jones et al, 2005; Kaye et al., 2006; Bergman et al., 2010
Bookmarks	Abrams & Baecker, 1997; Abrams, Baecker, & Chignell, 1998; Gottlieb & Dilevko, 2001; Boardman & Sasse, 2004; Kaye et al., 2006; Barreau, 2008; Bergman, Whittaker & Schooler, 2021
Emails	Whittaker & Sidner, 1996; Bälter, 1997; Bellotti et al., 2003; Mackenzie, 2000, 2002; Ducheneaut & Bellotti, 2001; Bellotti et al., 2002; Bergman, Beyth-Marom, Nachmias, 2003; Boardman & Sasse, 2004; Neusaedter, Brush & Smith, 2005; Kaye et al., 2006; Barreau, 2008
Music	Cunningham, Jones, & Jones, 2004; Weinberger & Bouhnik, 2020; Bergman, Whittaker & Tish, 2022
Photos	Van House et al., 2004; Latif, Mustofa, & Tjoa, 2006; Lee, Smeaton, O'Connor, & Jones, 2006; Whittaker, Bergman, & Clough, 2010; Bergman, Gutman & Whittaker, 2022
Scraps	Bernstein et al., 2007, 2008; Butterfield-Addison et al., 2012
Information systems	Burton, 1981; Bergman & Yanai, 2018
Data	Whittaker & Hirschberg, 2001; Feng & Agosto, 2019; Vitale, Odom and McGrenere, 2019

Jones and Teevan (2007) provide one of the most comprehensive definitions of PIM in the literature, that synthesizes many of the concepts of PI and changes in forms of personal information accumulated over 30 years of research. They define PIM as,

> both the practice and the study of the activities people perform to acquire, organize, maintain, retrieve, use, and control the distribution of information items such as documents (paper and digital), Web pages, and email messages for everyday use to complete tasks (work-related or not) and to fulfill a person's various roles (as parent, employee, friend, member of a community, etc.). PIM places a special emphasis on the organization and maintenance of personal information collections in which information items, such as paper documents, electronic documents, email messages, web references, handwritten notes, etc... are stored for later use and re-use. (Jones & Teevan, 2007, p. 3).

Consistent with Lansdale's (1988) original conceptualization as the information we keep and intend to use again in the future, Jones and Teevan also define information retention and re-use as the main focuses of PIM research. Jones and Teevan's new definition of PI omits ownership and affective attachments from Lansdale's original definition as distinguishing features. Rejection of ownership and emotional attachments allows for Jones and Teevan to propose an alternative distinguishing feature; the social roles and obligations we aim to fulfill through use of personal information. Through recognition of a social dimension, the personal information management is reconceptualized as a social practice, as is typical in Personal Archiving (e.g., Cox, 2012; Neumann, 1999). Social practices are ever evolving everyday "ways of doing and saying" informed by shared social understandings, beliefs, expectations, identities, and material arrangements (Cox, 2012, pp. 61-63). Neuman (1999) also saw personal information management as a social practice and argued that workspaces, information systems, and information items are arranged in ways that reflect shared ideas and aspirations for how we work and live. As a social practice, Jones and Teevan introduce an additional concept of motivation to the definition of personal information and argue that our motivations to use personal information are social, in addition to being motivated by practical goals such the desire to re-use the data or information contained within a document.

Building upon their definition of PIM, Jones and Teevan (2007) directly tackle the question of what personal information is. They define several "senses" of personal information that radically expand the conceptual definition of PI. The Information Senses are presented in Table 2.

Table 2

Jones and Teevan's (2007) Senses of Personal Information

Sense of PI	Description and Examples
Information people "keep"	The clearest and most conventional form of PI. It is the information items people possess as part of a personal information collection and have the greatest degree of control over. Composed of original documents authored by the owner or duplicates of publicly accessible documents intentionally retained by an individual person for future reference.
Information "directed-to" people	Refers to the kinds of documents people receive as part of communication practices such as mail or email. When an information item is directed to an individual, they must decide whether to keep or discard it upon receiving. This decision is a form of appraisal when the owner decides on the future value of the information item.
Information people "experience"	Refers to information that people access and consume, sometimes on a regular basis, but do not formally make a formal decision to capture and keep in their personal information collection. Examples of information people experience include commonly visited websites that they navigate to repeatedly for reference purposes.
Information "about" people	Entails information about individuals that they do not own or control but may be able to access. Common examples include information collected and maintained about us by governmental agencies, private corporations, and various service providers such as our health care practitioners. Information about people represents the outermost limit of PI.

Jones and Teevan's senses of personal information captures the complicated ways in which we own, encounter, and interact with personal information. Jones and Teevan propose four senses that capture these nuances: (1) the information we choose to keep and choose to manage (e.g., a document we wrote and saved); (2) the information we receive and then need to decide whether to keep to manage (e.g., an email or letter we receive in our mailbox); (3) the information we regularly access and consume but choose not to keep or manage (e.g., an article or recipe we find online that we repeatedly navigate to using the same search strategy); and (4) the information that is managed on our behalf by others (e.g., records about us maintained by governmental or health care providers). Jones (2008) expands upon this framework, recognizing two additional senses of personal information: (5) the information we share with others (e.g., an email or letter we send), and (6) any information relevant and accessible to us via public sources (e.g., answers to everyday questions we might have). The senses of personal information restore ownership as a distinguishing feature of personal information by emphasizing the decision to keep information items that we encounter as the clearest and most conventional sense of PI. At the same time, Jones and Teevan acknowledge instances where people think of and treat information items as forms of PI despite a lack of ownership or evidence of keeping decisions that transform public information into personal information via duplication. This makes sense considering the tendency for people to regularly access and consume information items online repeatedly without consideration of preservation and long-term access (Marshall, Bly, & Brun-Cottan, 2006; Marshall, 2007, 2008a, 2008b; Marshall, McCown, & Nelson, 2007; Lindley et al., 2013). Bergman and Whittaker (2016) refer to Jones and Teevan's (2007) body of work as "the consumption model" of PIM due to their recognition of "information we experience", "information about us", and "information relevant to us" as senses of PI. The senses of PI raise interesting and previously unexplored questions about personal financial records, such as the degree to which each category is represented within personal collections and the extent to which people make the decision to keep and manage the financial documents available to them online in an age of online banking and e-commerce, such as those normally found within banking apps and websites.

More recently, Bergman and Whittaker (2016) offer an alternative definition of personal information that rejects portions of Jones and Teevan's senses of PI. Bergman and Whittaker (2016) define personal information as "…the information that users actively curate" (p. 14). Curation is a set of activities with information items governed by a document lifecycle. Curation of PI has three stages: (1) keeping, (2) management, and (3) exploitation. Keeping decisions are a form of appraisal of personal information in which the individual is required to anticipate the future of an information item value to make the decision of whether to keep or discard it (Bergman & Whittaker, 2016, p. 15). Keeping represents the beginning of the document lifecycle for PI and captures the moment in which a document becomes part of a personal collection. Cushing (2010) argues that appraisal theory is a key contribution from institutional archiving that can enhance discussions of personal information management and address common problems that people experience when managing personal records such as the uncontrolled accumulation of information items in personal collections (p. 308). Management is "communication that we have with our future selves, in which the goal is to organize information to improve the likelihood that we will find it again." (Bergman & Whittaker, 2016, p. 18). Management entails a process of mapping the relationship between a new information item and the organizational structure of a personal collection to support future retrieval. Exploitation is the use of information items contained within a personal collection, which they assert "is at the heart of curation practices" (Bergman & Whittaker, 2016, p. 21). Use of the information item is seen as the ultimate motivation for personal information management and the successful outcome of the curation process. Thus, to summarize and simplify, according to Bergman and Whittaker, personal information is the information we see as valuable, that we search for within our personal collections, and then use when needed. As such, the "curation model" definition of PI is embedded in a user-subjective approach to personal information (Bergman, Beyth-Maron, & Nachmias, 2003, 2008; Bergman & Whittaker, 2016).

Bergman and Whittaker make note of additional properties of PI that can enhance our understanding on a conceptual level. These properties are: (1) whether the information item is actionable or informative, and (2) whether the information item is unique or public. Actionable information, such as an email or reminder, prompts the individual to act immediately (Bergman & Whittaker, 2016, p. 24). Other researchers noted how arrangement and use of information items is closely connected with time and task management (Malone, 1983; Gwizda, 2000; Whittaker & Hirschberg, 2001; Bellotti et al., 2002; Henderson, 2005). On the other hand, "informative items" do not require an individual to act upon receiving but instead have anticipated future value to their owners (Bergman & Whittaker, 2016, p. 25). Unique information refers to items that cannot be recovered from public sources such as through websites on the internet in the event of the loss of the originals (Bergman & Whittaker, 2016, p. 26). Uniqueness emphasizes a distinction between personal information and public information, which will be discussed in greater detail in subsequent sections of this chapter. Bergman and Whittaker argue that uniqueness is an important defining characteristic of personal information because of risks of catastrophic loss of unique records,

> no one else will take care of our unique personal data. We personally need to create reliable structures for reaccessing highly important personal data, such as passwords, tax forms, passport details, or financial records, even when we rarely need to access this information (Bergman & Whittaker, 2016, p. 27).

When recognized, the uniqueness of an information item creates a strong motivation to keep it due to its intrinsic value and limited recovery options if lost. The unique, actionable, and informative properties of personal information raise unexplored questions about personal financial records, such as whether they serve as motivators and initiators of financial action and whether they're truly appraised as highly unique and informative resources worth the time and effort required for curation. This is especially pressing given Kaye et al.'s (2014) observation of extensive use of the financial touch with limited use of information systems to capture and aggregate data as part of managing household finance, contrary to Bergman and Whittaker's hypothesis that uniqueness and future value motivates curation of personal information. Furthermore, Feng and Agosto (2019) found that increasing automation in applications and information systems, such as those used to store and access personal data captured by activity tracking technologies, results in less focus among users on keeping, finding, and reminding of personal records despite the data being highly unique and not replaceable through public sources. Instead, automation was associated with more direct interactions with data by users to generate novel insights that satisfy contextually relevant information needs that motivate use of the activity tracker technology, such as motivation and personal accountability in personal fitness (Feng and Agosto, 2019, p.1361).

Several PIM researchers proposed alternative ways for conceptualizing personal information based on direct observations of personal collections made during field studies. Cole

(1982) identifies three kinds of personal information in a study of thirty office filing systems: (1) action information, (2) personal work files, and (3) archive storage. Action information is the least organized as piles but most frequently interacted with and therefore most accessible (Cole, 1982, pp. 60-61). Action information prompts action and reminds (Cole, 1982, pp. 60-61). Personal work files are more formally organized using categorical relations but less frequently interacted with (Cole, 1982, pp. 60-61). Personal work files are those most relevant to a user's everyday activities (Cole, 1982, pp. 60-61). Archival storage refers to personal information kept long-term but often at a distance from the location where most everyday activities with information items take place (Cole, 1982, pp. 60-61). Archive storage is the most formally organized but most infrequently interacted with (Cole, 1982, pp. 60-61).

In a landmark study for PIM research, Malone (1983) found that personal information environments could be categorized as either messy or neat, which corresponded with use of piles and files as a strategy for organizing and retrieving personal records. Files were used to title and arrange personal records in a systematic order (Malone, 1983, p.106). Piles were a passive strategy for organizing personal records, using temporal accumulation as the structure without other forms of labeling (Malone, 1983 p. 106). Moen and Brennan (2005) found four categories of personal health information in homes corresponding with different strategies for exploiting personal records: (1) "just-in-time information" stored visibly, accessibly, and often travels with the owner; (2) "just-at-hand information" stored visibly in a designated location in the home with the intention to remind and support communication; (3) "just-in-case information" stored in an organized fashion in hidden but strategic locations in the home that are out of the way but easily accessible if ever needed; and (4) "just-because information" stored in aggregated and largely unorganized piles with limited intentions to organize or retrieve in the future (Moen & Brennan, 2005, p. 654).

In a study of health information in the home, Piras and Zanutto (2010) found three categories of personal health information determined by their spatial location within the home: (1) crossroads, (2) archives, and (3) archives-in-use. Personal information found in “crossroads” is highly visible, acts as reminders, and is highly accessible by virtue of being located at obligatory points of transit within the home such as hallways or entrances (Piras & Zanutto, 2010, p. 600). Crossroads are normally temporary storage spaces for personal records (Piras & Zanutto, 2010, p. 600). “Archives” contain personal information that is unlikely to be used again but kept just-in-case. Archives are hidden from view in the home and may be categorically organized (Piras & Zanutto, 2010, pp. 600-601). “Archives-in-use” contain active personal records located near the space in which everyday activities associated with the information item take place (Piras & Zanutto, 2010, p. 601). Across these studies, the spatial arrangement of personal records within an environment reflects both their functions and uses as well as their lifecycle. Little is presently known about the arrangement of personal financial records within the homes of young adults and the ways in which financial coming-of-age is reflected in the presence and spatial arrangement of personal financial records. Next, I turn to a discussion of personal information from an archival perspective which offers a point of contrast to the framings of personal information reviewed above.

Concepts of Personal Information in Personal Archiving

Archival literature provides an alternative lens within Information Studies through which to explore the concept of personal information. Review of the literature identified few studies on personal archiving by young adults and none directly related to young adult personal finance. Krtalic, Marcetic and Micunovic (2016) found that roughly half of young adult social science and humanities students believe managing and preserving digital data and documents is important, which reflects growing awareness of potential risks and threats to long-term access to digital personal records. Majid et al., (2010) found that people tend to use the storage spaces provided by internet services to preserve personal digital items, contributing to the challenges associated with the fragmentation of personal collections. Use of internet services to preserve personal records was associated with the perception of enhanced security of internet services in comparison to self-preservation (Majid et al., 2010, p. 118). Overall, research on young adult archiving and digital preservation is extremely limited, with financial records representing a specific gap in the literature.

Researchers within the area of Personal Archiving took a functional approach towards defining personal information. Personal information is defined by its uses and values. Personal information has long been recognized as an important medium of identity construction and representation by archivists (McKemmish, 1996; Kaplan, 2000; Hobbs 2001; Beagrie, 2005; Kaye et al. 2006; Cushing 2013). Personal archiving is a technique of identity construction through acts of witnessing and memorializing the self through personal records (McKemmish, 1996). McKemmish (1996) identifies a self-reflexive aspect to the interactions we have with personal archival materials, framing personal archiving as “a way of evidencing and memorializing our lives–our existence, our activities and experiences, our relationships with others, our identity, our place in the world” (p. 175). The creation of personal archives plays a direct role in the construction of individual and collective identities, in which the concerns, self-perceptions, aspirations, divisions, anxieties of its founders are palpable (Kaplan, 2000, p. 127). The primary value of personal records is their narrative value as a medium of storytelling and autobiography, through which the creators of personal archives engage in “self-presenting or representing the self” (Hobbs, 2001, p. 131). In a separate study of personal archives not related to personal finances, Kaye et al. (2006) echoed this sentiment stating, “we started to notice how archiving was used as an expression and crafting of identity, projected outwards towards the world as well as back at the individual to reinforce his or her sense of self” (p. 279). Cushing (2013) also sees personal information in the form of digital possessions as having a representational and mirror-like quality that reflects an individual’s interests, thoughts, and moods back to themselves while at the same time communicating themselves to others (p. 1729-1730). From an archival perspective, personal information provides a reflexive and intimate look into the values, interests, activities, and emotions of their creators, including how they see themselves, who they aspire to be, and how they want to be seen and remembered by others.

Archivists also recognize how personal archives function as an externalized form of memory over the long-term (McKemmish, 1996; Kaplan, 2000; Beagrie 2005; Kaye et al., 2006). The creation of personal archives is motivated by the desire to easily find and remember information about the self (Kaye et al., 2006, pp. 276-267). Individuals and groups can use personal archives as externalized memory repositories to construct personal and collective social identities in the present and future (Kaplan, 2000, p. 135). How people are remembered is shaped through the appraisal process, through which materials are carefully selected for inclusion in a personal archive to create an authoritative historical record of the individual and their life (Kaplan, 2000, p. 135). As externalized forms of memory, the records within personal archives are used to preserve information and construct narratives about the self that are often incomplete or idealized representations of the self.

Researchers stress how personal archives should not be considered objective representatives of the self or rememberings. Kaplan warns we should not view personal archives as containing objective historical truths or complete memory, “the archival record doesn’t just happen; it is created by individuals and organizations, and used, in turn, to support their values and missions, all of which comprises a process that is certainly not politically and culturally neutral” (Kaplan, 2000, p. 147). Consequently, personal archives can be subject to different forms of bias as well as motivated by a variety of individual and collective agendas. Personal archives have a “point of view” that entails both subjective and strategic forms of remembering (Kaplan, 2000, p. 147). Similarly, McKemmish (1996) notes how strategic omission and destruction of records in personal archives allows creators to control narrative and how they are remembered by others (p. 179). By controlling what is documented and preserved, people can create distorted or idealized representations of themselves, creating a disjuncture between the “archiving “I”” (the holistic actor who creates the personal archive) and the “archived “I”” (the partial reflection of the actor constructed through their careful selection, retention, and omission of materials for the personal archive) (Douglas, 2015; 2018). Douglas (2015) found that financial records along with other forms of personal ephemera such as to-do lists, doodles, grocery lists, and receipts are regularly, and intentionally, excluded from the donations of personal papers famous writers make to institutional archives. Their omission creates a distinction between the private self and public persona, purposefully limiting what can be known about the author's private life by future generations. Kaye et al. (2006) also rejects the view that personal archives are objective and complete forms of remembering in favor of the position that selection and appraisal processes create idealized representations of the self that are vulnerable to impression management (Kaye et al., 2006, p. 279). In the context of personal financial records of young adults, little is known about how impression management and the construction of carefully curated representations of the self might impact selection, discarding, and preservation practices. With a deeper understanding of the selection and appraisal of the value, or potential uses of personal financial records by their creators, we can better understand how social, political, and personal motives shape narratives constructed by individuals through the creation and maintenance of a personal archives.

Archival perspectives provide an alternative lens for conceptualizing personal information by pointing to a different set of motivations and functions from those proposed by researchers in PIM. Whereas PIM scholars identify the desire to reuse documents as the main motivation for maintaining personal collections, archival scholars emphasize identity construction and preservation of memory as primary functions of personal archiving. As such, archivists approach the topic of personal information from a strongly humanistic perspective that expands our understanding of personal archiving as a social practice. Little is presently known about how young adults use personal financial records to construct representations of the financial self and support financial remembering during the period of emerging adulthood.

In recent years, digital technologies shifted the ways in which archivists conceptualize personal information. Digital technologies spurred new conversation about the object-sense of personal information as people increasingly interact with digital information items and forms. Beagrie (2005) defines a "personal digital collection" as, "informal, diverse, and expanding collections accumulated and maintained by individuals" (para. 8). Personal digital collections contain electronic personal records, such as digital photographs, video, audio recordings, and documents. Excluded from personal digital collections is information maintained and accumulated by governmental sources and other third parties that collect information about individuals (Beagrie, 2005, para., 8). Beagrie's exclusion of governmental and third-party "information about us" appears as a rejection of some of Jones and Teevan's (2007) senses of personal information. Beagrie also differentiates between personal archives and personal libraries, when items are kept for personal reference in the former case or for sharing with others in the latter case (Beagrie, 2005, para. 8). Beagrie's distinction between personal archives and personal libraries reflects a similar belief that personal information is maintained exclusively for our own use in congruence with PIM definitions of personal information (e.g., Lansdale, 1988; Jones & Teevan, 2007; Bergman & Whittaker, 2016).

With the introduction of the concept of personal digital collections, a key change in the archival discourse occurs that reframes personal information as a form of personal property. This change can be seen through introduction of new conceptual terms for personal information within the literature such as "digital belongings" (Marshall, Bly, & Brun-Cottan, 2006; Marshall, 2007, 2008a, 2008b; Marshall, McCown, & Nelson, 2007; Lindley et al., 2013) and "digital possessions" (Cushing, 2010, 2013). These new terms emphasize the object-sense of digital personal information in addition to their functions as a medium of identity construction and externalized memory. Marshall, Bly, and Brun-Cottan (2006) define digital belongings as,

> a mix of artifacts one has created and gathered oneself, institutional records, and published media. To a greater extent than ever before, these digital belongings form the rich backdrop of a person's life–the photos, correspondences, financial records, video recordings, the documents they read and write, their creative work, the published work they own, and much more–that come into existence in digital form and mostly stay that way (p. 25).

The concept of digital belongings retains many of the features proposed by earlier authors in Personal Archiving. The concept of digital belongings also acknowledges an expanding array of media types and forms associated with contemporary computing, such as digital images, audio, and video files. Contrary to Beagrie's (2005) personal digital collections, Marshall, Bly, and Brun-Cottan's concept of digital belongings also includes duplicates on information obtained from third-party sources, such as institutional sources. Their choice to include "information about us" collected by individuals reflects an acceptance of Jones and Teevan's (2007) senses of personal information.

Cushing (2013) proposes the term "digital possessions" as an alternative object-oriented concept of personal information for personal archives. Digital possessions are (1) a form of evidence, (2) representations of identity, (3) possessions with value, and (4) provide owners with a sense of bound control comparable to other material possessions (Cushing, 2013, p. 1732). The principles of appraisal theory can help differentiate personal information from other kinds of digital items through consideration of their primary, secondary, and intrinsic values, using appraisal theory (Cushing, 2013, p. 1733). Primary value refers to the original use of a record. Secondary value refers to new uses for a record found after the original use of a record. Intrinsic value refers to the inherent uses of a record (Cushing, 2013, p. 1733; Menne-Haritz, 1994).

Cushing sees the secondary value of digital possessions, or their use beyond their original purpose, and their intrinsic value, or inherent usefulness, as defining characteristics that motivate curation by the creators of personal archives (Cushing, 2013, p. 1733). Through curation, people feel a sense of ownership or bounded control over digital items with secondary or intrinsic value, which transforms them into digital possessions. The bounded sense of control described by Cushing captures Jones and Teevan's (2007) "information people keep" sense of PI and Lansdale's (1988) definition of personal information as items we own and control. The sentimental attachments that people form with digital possessions because of associations with other people, events, organizations, or places, is a defining characteristic that differentiates digital possessions from other digital items (Cushing, 2013, p. 1733). The introduction of the terms "digital belongings" and "digital possessions" as alternative terms for personal information highlight the impact of digital technologies on how we think of personal information within the field of Information Studies and illustrate a shift towards a more object-oriented approach that is in greater alignment with original definitions of personal information as a form of property. Next, I continue our discussion of object-senses of personal information and turn to an observation I made about usage of the terms data and information in the literature.

Differentiating Between Data, Information, Scraps, and Containers

During review of the Information Studies literature, I noticed inconsistencies in use of the terms "information" and "data" when referring to personal records. Works on curation of PI contain several instances where data and information are treated as synonyms, which they use interchangeably. For example, while reflecting on common negative experiences people have with personal information, Bergman and Whittaker (2016) describe "lost personal data" as "the deeply worrying experience of being unable to locate important information that you know you have, whether in the form of a lost document, contact name, or number, or an email that contains important information" (Bergman & Whittaker, 2016, p. 6). In the above definition, documents (e.g., document, email) and some of their contents (e.g., a contact name, a phone number) are simultaneously framed as both data, information, and documents, which are objects that contain information. Another example of use of the terms data and information as synonyms can be seen in Bergman and Whittaker's (2016) definition of personal information itself,

> Our informal description of personal collections includes a wide range of information types originating from a variety of different sources. One critical point here is that not all personal data is self-created. In addition to personally created documents and photos, personal archives also contain emails, texts, and social media created and shared by others. Personal collections also contain data that were originally accessed from public archives, such as maps, or links to useful online resources. This public data might be bookmarked or saved to a local disk to increase its availability. What unifies all these disparate data types into a personal collection is their projected future value for a user. Users seek to preserve and organize personal data themselves because they want to ensure access to that data at some future time. What defines personal information is therefore not the type or provenance of information, but rather that users strategically choose to organize the information themselves with an eye to its future access. In other words, personal information is information that users curate (Bergman & Whittaker, 2016, p. 14).

In the above passage, the terms personal data and personal information are used interchangeably to describe a wide variety of documents and digital items. The relationships and distinctions between data, information, information types (which according to Jones and Teevan (2007) are determined by the tools we use to interact with information items), and kinds of documents or records normally found within personal collections remains ambiguous and undefined. This can be contrasted with approaches like that of Krtalic, Marcetic and Micunovic (2016), who use the framing of "data and documents" to reflect conceptual distinctions between data, information, and documents in their study of personal archiving among social sciences and humanities students. Likewise, in a recent study exploring opportunities the automation of keeping decisions in personal information management, Vitale, Odom and McGrenere (2019) refer to all information items and forms as "personal data", regardless of their form (e.g., photo, video, text document, app content) and without reference to the digital tools that enable human-information interactions. Next, I will discuss these distinctions in greater detail.

Theoretical distinctions between data, information, knowledge, and wisdom are articulated in the Wisdom Hierarchy (Zeleny, 1987; Ackoff 1989; Bellinger, Castro, & Mills, 2004; Zins, 2007; Rowley, 2007). Rowley (2007) synthesizes three decades of literature on the Wisdom Hierarchy and offers the following conceptual descriptions of data and information. Data has no meaning or value without context and interpretation, are unorganized and unprocessed discrete objective facts or observations, and are basic recorded descriptions of properties of things, events, activities, and transactions. (Rowley, 2007, p. 170). In contrast, information is a product of structural relationships between data points, achieved through aggregation and organization of data and interpretation of data for meaning, relevance, and purpose in context (Rowley, 2007, p. 171). Based on these theoretical definitions with 30 years of development within Information Studies, data and information are contained within documents and stored within personal collections but neither data, information, nor documents are conceptual equivalents that can be used as synonyms. These distinctions appear increasingly important as greater attention is paid to the impact of digital technologies on personal information and the expanding range of digital possessions managed by the creators of personal collections. Increasing use of digital technologies in personal finance, which allow people to interact with digital financial records in the form of documents (e.g., e-statements) as well as the content of banking apps and websites (e.g., bank account balances, transaction details) also raises questions about the benefit of having clearly defined theoretical relationships and distinctions between data, information, knowledge, wisdom, and documents. I will return to a discussion of the Wisdom Hierarchy when presenting the theoretical framework that informs this research in the next chapter on Methodology.

Recent work on the topic of "information scraps" in PIM also raise unresolved questions about whether personal information research would benefit from greater clarification of the relationship between documents and their contents. Information scraps refer to ideas, sketches, notes, reminders, and numbers that are encoded in a textual-linguistic form but might not take the form of a document (Bernstein et al, 2008). Examples of information scraps include words or numbers written in the margins of documents as, "...reminders, memory aids, or holding places for incomplete thoughts" (Bernstein et al, 2007, p. 2286). Information scraps are intentionally small and fragmentary, limited to just enough characters to "...evoke the complete thought in the author's mind" (Bernstein et al, 2007, p. 2286). Information scraps entail interactions with extremely small "units" of personal information. When interacting with information scraps, the meaning of the scrap is constructed inside the mind of the user rather than contained within a document in an explicit form. Little is known about the extent to which information scraps are used when managing personal finances, such as whether financial touch interactions with items such as bank account balances and transaction details observed by Kaye et al., (2014) are examples of information scraps. Furthermore, recent growth of activities such as self-tracking (Swan, 2013), lifelogging (Sellen et al., 2007; Sellen & Whittaker, 2010), data unification in personal information management (Karger & Jones, 2006), and secondary uses of digital belongings such as through big data (Boyd & Crawford, 2012) point to a future horizon where data may become a greater part of the personal collections people manage. Theoretical distinctions between data and information might help researchers in Personal Information Management and Personal Archiving better support individuals manage collections of personal data in addition to collections of personal papers, including within the context of personal finance. Next, I discuss how rejection of some of Jones and Teevan's (2007) senses of PI culminated in the emerged of two conceptual models of PIM.

Consumption Versus Curation of PI

As PIM matures as an area of research, expansion of the concept of PI has led to a disagreement between leaders in the field. One disagreement is hinged on whether two of Jones and Teevan's (2007) senses of personal information, specifically the "information people experience" and "information about us", and Jones' (2008) "information relevant to us", are truly forms of personal information. Whittaker (2011) argues that these two categories are in fact forms of public information. This critique is expressed in the following passage,

> Keeping is a perquisite for later stages: people cannot manage or exploit information that they have not kept. In contrast, Jones and Teevan's (2007) concern is more with public data and they begin with (re)finding such information, because it already exists in the public domain without users making efforts to create or preserve it (Whittaker, 2011, p. 10).

At the heart of this critique is a concern that information-seeking from public sources is outside of the scope of personal information management, which deals exclusively with unique information that cannot be regenerated from outside sources. Bergman and Whittaker (2016) expand upon this critique and question the fit of conceptual models of PIM that include information-seeking and information-retrieval of information items from the public domain (e.g., Bruce, 2005; Jones & Teevan, 2007),

> Consumption models are focused on new information, arguing that we are continually seeking out novel public resources rather than acting with the information we already have. If these models are correct, then we should not expect people to preserve personal archives for future consumption (Bergman & Whittaker, 2016, p. 10).

Whittaker (2011) and Bergman and Whittaker (2016) argue that the concept of PI should be restricted to unique information items that users own, either because they create the items or receive them from non-public sources (e.g., email). This disagreement has implications for the range of activities considered part of the management of personal information. For example, is use the financial touch to obtain glimpses of a person's general financial situation, as observed by Kaye et al., (2014) an example of consumption, rather than curation of PI? Additionally, are account balances, transaction data, and online statements accessed through banking websites and apps outside of the scope of personal information management when not kept and curated directly by individuals? Next, I turn to a discussion of long-term preservation of personal information as an enduring concern within the field.

Long-Term Preservation and the "Digital Recordkeeping Revolution"

Debates about the impact of digital technologies on the preservation and long-term access to personal information is also a source of disagreement among researchers. Archivists working with historical manuscripts, also known as "personal papers", were the first to raise concerns about the loss of potential archival records because of electronic recordkeeping in the domestic sphere (Cunningham, 1994, Cox 1996). Cunningham (1994) characterized the growing use of personal computers and digital information forms in the home as a "revolution taking place behind closed doors of suburbia" that threatened the completeness of institutional archival collections (p. 95). Advances in personal computers since the 1990's increasingly meant that ordinary individuals are increasingly capable of developing and maintaining "...comprehensive and fully integrated electronic personal recordkeeping system" for composing and managing many everyday types of manuscripts including domestic budgeting" (Cunningham, 1994, p. 95). Cunningham explicitly identified personal financial records as a specific category of personal information at risk of loss because of digital technologies.

As use of personal computers was becoming mainstream, professional acquisitions and management practices within archives were slow to respond to the paradigm shift in personal archiving created by personal computers (Cunningham, 1994 p. 96). The lag among archival professionals to respond to the increasing volume of digital manuscripts entering institutional archival collections was attributed to low levels of technological literacy among many professional archivists at the time and the perception of incompatibility between digital formats and traditional archival practices used to curate paper manuscripts (Cunningham, 1994, p. 96). Cunningham sounded alarms about the potential for catastrophic loss of evidential value, contextual meaning, and usability of archival records stemming from a "digital revolution" in personal recordkeeping (Cunningham, 1994, p. 96). To address this digital personal recordkeeping revolution, Cunningham advocated for (1) "pre-custodial intervention" by professional archivists with potential donors throughout the lifecycle of personal archives to assist professional archivists in preserving and providing long-term access in place of the standard non-interventionist "distributed custody" approach; (2) migration and conversion of electronic records to standard formats with online access for electronic records; and (3) and increased professional development and technical support from IT specialists within the profession (Cunningham, 1994, p. 58).

Cunningham created new awareness within the archival community of personal information, personal archives, and digital technologies but the suggestion for pre-custodial intervention by archivists was considered controversial within the field. For example, McKemmish (1996) suggested that archivists need to instead "further develop and share their understandings of the role of personal recordkeeping in our society and the 'place' of the personal archive in the collective archives" in response (McKemmish, 1996, p. 184). Instead, McKimmish advocated that the archival profession should treat personal archiving as a distinct documentary form and seek to understand how recordkeeping processes and systems become institutionalized by individuals including the rules that individuals apply to their personal records (McKemmish, 1996, p. 184). Professional archivists need to better understand the drives and personality traits that mandate personal recordkeeping rather than trying to promote adoption of institutional practices in the domestic sphere (McKemmish, 1996, p. 184). At heart, McKemmish argued for a non-interventionist approach where professional archivists attempt to understand personal archiving on its own terms while embracing novel electronic formats to adapt the profession to the new challenges posed by use of personal computers outside of institutional archival settings. This suggests archival professionals might advocate for use of a non-interventionist approach in future studies exploring novel forms of personal records and social practices involving digital technologies, such as emergent practices involving digital personal finance.

A preference for professional non-intervention was shared by Cox (1996) who argued that the challenge presented by electronic personal records is an opportunity for archivists to unite and “swing back to the real business of the archivist, the management of the record and recordkeeping systems with continuing value for evidence, accountability, and memory” (Cox, 1996, p. 48). Like McKemmish, Cox sees the study of personal records as an endeavor to understand “the impulses driving individuals and families to create, maintain, and use their own records” (Cox, 1996, p. 51), which is driven by similar information needs of other societal organizations, including, “to capture transactions, document activities, serve legal and administrative functions, and provide a basis for memory” (Cox, 1996, p. 52). In a subsequent publication, Cox and Duff (1997) appeared more open to limited forms of pre-custodial intervention, such as the creation of self-help resources to assist the creators of personal archives, thus acknowledging opportunities for knowledge-translation of professional practices to address preservation challenges faced in domestic recordkeeping settings. Specialized educational resources designed to provide best practices for maintaining and preserving personal financial records might be a particularly effective form of pre-custodial intervention for young adults early in their transitions towards financial adulthood resulting in greater financial independence and well-being during emerging adulthood.

Cushing (2010) also encourages greater collaboration between archival professionals and the PIM community to improve long-term access to personal records. Cushing identifies research siloes and limited use of archival knowledge by PIM and HCI researchers as a particular challenge for the field. Technology-focused researchers need greater awareness of archival thought and techniques related to personal records to ensure the survival of digital belongings and digital personal records (Cushing, 2010, p. 302). Cushing recommends that researchers on the periphery of Information Studies consider: (1) adopting of a records lifecycle approach to personal records along with a distributed custody approach rather than advocating for an interventionist approach reminiscent of those proposed by Cunningham (1994; 1999); (2) framing the archive as a static place for the centralization of information with recognition that distribution of personal records across services and devices makes curation of personal records more difficult; (3) addressing challenges of loss of access associated with format and compatibility issues caused by technological innovation; and (4) including a concept of appraisal by functional analysis for determining the value and retention periods for personal records to address uncontrolled accumulation and duplication of personal records within collections (Cushing, 2010, p. 304-310).

Cox (1996) also reflected on the impact of digital technologies and suggested that archivists need to work more closely with information technology designers to address technological challenges to fulfill their mandate to preserve and provide continued access to collective memory, including those contained within digital records (p. 55). Cox's call for greater interaction between professional archivists and information systems designers was followed by an increasing number of technology-focused publications on personal archiving by researchers from a diverse number of fields including Personal Information Management and Human-Computer Interaction (e.g., Whittaker & Hirschberg, 2001; Beagrie, 2005; Kaye et al., 2006; Czerwinski, 2006; Marshall, Bly, & Brun-Cottan, 2006; Marshall, 2007, 2008a, 2008; Marshall, McCown, & Nelson, 2007; Williams & Rowlands, 2008; Williams, Leighton, & Rowland, 2009; Cushing, 2010, 2013; Becker and Nogues, 2012; Lindley et al., 2013). Within this body of work is a resurgence of concern over long-term access to digital personal records and the role of information systems designers in the preservation of personal records in electronic formats.

Many of the concerns raised by researchers from PIM and HCI center around long-term access to digital personal records. Due to exponential increases in computer processing power and virtual storage, Beagrie (2005) predicted that individuals will face increased pressures when (1) securing their personal records over decades, (2) protecting privacy and controlling access in digital contexts, and (3) effectively organizing and extracting information from personal collections (para. 27). Beagrie (2005) also predicted an increase in direct-to-consumer information services aimed at supporting personal recordkeeping, as well as exploiting contents of personal digital collections (para. 28). Since then, designers of information systems have included features to support the preservation of digital personal records, such as cloud storage solutions that automatically back up collections and improved search features within operating systems. Williams and Rowlands (2008) found that preservation is an enduring issue for the creators of personal archives, noting how distinctions between offline and online are often blurred in personal archives, characterized by a lack of clarity about whether digital possessions are stored locally on a personal device or stored remotely through an online service such as a social media site (Conclusion, para. 2). They point to the need for greater guidance and advice from archival professionals in appraisal and selection, as well as options for storage and access control to personal records (Williams & Rowlands, 2008, Conclusion, para. 7). Becker and Nogues (2012) found that writers experience unmanageable accumulation of digital files resulting in the loss of archival materials and recommend greater levels of outreach and support for writers by professional archivists (p. 509). Lindlet et al. (2013) also found that preservation remains a challenge, with people treating personal information online as ephemeral while at the same time relying on websites to preserve and provide continued access to their personal information. Many of these preservation related challenges might also apply to the context of personal finance as more people adopt online banking websites and apps to access and store portions of their collections of personal financial records.

Information systems are seen as giving the creators of personal archives a false sense of security about the long-term access of their personal records and therefore take limited steps to preserve it. HCI scholars Marshall, McCown and Nelson (2007) identified three digital practices that threaten long-term preservation of digital belongings: (1) “opportunism” in the form of distributing files across information systems to reduce risk; (2) “optimism” through circular reasoning about their ability to recover documents from public sources and fragmented information systems; and (3) and “benign neglect” as a value-neutral stance in which loss is anticipated and rationalized (pp. 153-154). In combination, these three digital practices are referred to as “radical ephermalism” (Marshall, McCown and Nelson, 2007). Little is known about the potential threats and consequences of digital tools such as banking apps and websites on our long-term access to digital personal financial records and the degree to which individuals, including young adults, treat their personal financial records with benign neglect and radical ephemeralism.

Conclusion

In this chapter, I reviewed the closest related works on personal financial information from the research areas of HCI, personal archives, and personal information management. Past work on personal financial records is extremely limited despite the ubiquity of personal financial records as a form of personal information in the home. Financial records are distinguished by their structured numeric content and their main function is evidencing and recording an individual's financial transactions. Past work on personal finance and digital technologies found that people made limited use of aggregating personal financial information systems to track personal finances. Instead, researchers noted how people tend to use a strategy termed the financial touch to obtain glimpses of their current financial situation using limited elements of personal financial records, such as bank account balances and recent transaction details.

I also reviewed related works on the topic of Emerging Adulthood. Review of the literature revealed that obtaining financial independence was a major motivator during the transition from adolescence to adulthood and parents play a strong role in socializing young adults into personal financial skills and practices. No previous works explore the role of personal financial records during financial coming-of-age. This gap is particularly pressing considering the period of Emerging Adulthood is a critical period of development for learning financial skills and practices that produce financial independence.

Then I reviewed related literature on the concept of personal information from the research area of Personal Information Management. Review of the literature revealed shifts in the way personal information is defined. Personal information is the information we own and reuse. Personal information includes documents we have affective attachments to. Personal information is embedded in social practices and personal collections reflect the social roles and obligations we fulfill. Personal information is also the information we decide to keep and preserve long-term. Related works found that the arrangement of personal records within spaces such as the home reflect the document's lifecycle and our intended uses of the document. Review of related works within Personal Archiving revealed major functions of personal information include identity construction and the documenting of human lives. Personal records in personal archives support long-term remembering. The widespread adoption of personal computers shifted discourse within the archival community away from the functions of personal records towards practical issues of long-term preservation and access to digital records. This led to a more object-oriented approach and reframing of personal records as digital possessions or belongings within the archival literature.

I identified data as a growing area of concern not well addressed within the literature. Recent work in information scraps and other units of personal information raise the question of whether personal information management needs a concept of personal data to account for the increasing use of digital technologies. I also discuss how some authors in PIM appear to treat data and information as synonyms despite theoretical models of information that see data, information, knowledge, and wisdom as distinct concepts and objects. I also discussed unresolved questions within the field about whether "information people experience" and "information about us" are legitimate forms of personal information.

Related works from personal archiving that raise questions about the ways in which people use technology to preserve personal information over the long term. Previous work found that the preservation and long-term access to digital personal records remains an enduring problem for creators of personal archives. Recent work found that people tend to treat their digital personal records with radical ephemeralism, which can result in catastrophic loss despite the availability of digital tools to store and preserve personal records. Little is known about the extent to which people consider personal financial records contained within online banking websites and apps as ephemeral information to be experienced and therefore neglect to preserve it. In the next chapter, I turn to a discussion of the epistemological, theoretical, and methodological frameworks I used to address gaps discovered during review of the literature.

Chapter 3: Methodology

In this chapter, I provide an overview of the epistemological, theoretical, and methodological frameworks that inform this research, and I will provide a detailed description of the methods I used. First, I discuss my research questions. Next, I contextualize my use of the social constructionist framework to analyze and interpret the data collected for this thesis. Afterwards, I provide an overview of the methodology for the guided tour technique commonly used to collect data in PIM research. I describe my use of Reflexive Thematic Analysis as the methodology guiding my analysis and then provide a summary of the deductive and inductive analyses used to develop my findings and discussion. Lastly, I discuss the limitations of this study as well as the strategies and processes I used to control the quality of my qualitative data analyses. Now, I provide a summary of the research questions that guided this research.

Research Questions

My research questions evolved over the course of this study as my understanding of theoretical and practical issues in the field deepened. This study was originally motivated by a curiosity about what personal financial records young adults manage, how they manage them and why. Built into this curiosity was the assumption that digital technologies, such as online banking, have the potential to impact the ways in which young adults manage collections of personal financial records and their personal finances. By exploring what, how, and why young adults manage personal financial records, my aim was to better understand to what extent personal financial records, tools, and processes have transitioned to digital formats and the impacts this transition has on the achievement of financial independence and well-being.

Throughout the data collection and analysis process, I slowly developed an improved set of research questions that reflected changes in my theoretical sensitivity and awareness of opportunities to contribute to the research area of Personal Information Management (PIM). I became aware of inconsistent use of the concepts of "data" and "information" within some publications, which appeared inconsistent with the Wisdom Hierarchy. This motivated a change in my analytic focus during the data analysis and writing stages, towards the following revised research questions,

1) How can the Wisdom Hierarchy, as a general theoretical model of information, be used to understand the concept of personal information in a way that harmonizes usage of the terms data, information, knowledge and wisdom in PIM, PA, and HCI research with other areas of Information Studies?

a) What is personal financial "data"? How is it managed?

b) What is personal financial "information"? How is it constructed?

c) What is personal financial "knowledge"? How is it developed and shared?

d) What is personal financial "wisdom"? In what ways does it help young adults achieve financial independence and well-being?

2) How is personal financial data used to construct personal financial information?

a) How are documents implicated in the construction of personal financial information?

b) How are digital technologies implicated in the construction of personal financial information?

3) How are young adults' perceptions of personal financial record management shaped by social discourses and social practices?

a) What role do personal financial records management play in financial coming-of-age?

b) How are personal financial records implicated in the construction of adult financial identities?

Throughout the subsequent chapters, I attempt to provide satisfactory answers for all three research questions. I now turn to a discussion of the epistemological, theoretical, and methodological frameworks that inform this research.

Epistemology

The epistemological framework for this investigation is social constructionism. Social constructionism argues that human knowledge is constructed through language and social discursive practices (Talja, Tuominen, & Savolainen, 2005, p. 89). A discourse is a form of "communication [that] is structure[d] by a conceptual structure, by institutional enclosure, and by governance of a discourse fora" (Hjorland, 2002, p. 258). Rather than take place on an individual level, discourses are communications that take place at the social, cultural, and scientific level within communities and societies across time (Hjorland, 2002, p. 258). Discourses are codified and socially diffused structures of human knowledge that people use as resources to categorize and interpret their worlds, with the limits of discourse representing the limits of human knowledge and understanding (Talja, Tuominen, & Savolainen, 2005, p. 89). In a social constructionist framework, reality is neither objective or subjective; never existing outside of human experience or purely and privately within the mind of individuals (Tuominen & Savolainen, 1997). The construction of knowledge occurs through processual negotiation and renegotiation of meanings across time and people (Tuominen & Savolainen, 1997). Rather, knowledge is constituted through intentional sense-making of life-worlds reflecting the goals, cultures, histories, and experiences of knowledge producers (Weber, 2004, p. vi). As a result, this research is firmly rooted within an interpretivist ontological approach.

The rise of social constructionism in Information Studies is part of an epistemic shift within the field from realism to interpretivism. A constructionist approach uses discourse analysis to examine how knowledge claims in the form of statements, texts, and documents, become stable authoritative understandings about people, objects, processes, and events through institutionalization (Frohmann, 2001, p.16). Information professionals using discursive techniques aim to identify communicative situations centered around practices of seeking or reception of information (Tuominen & Savolainen, 1997). In a social constructionist approach to Information Studies, information is not an object with fixed boundaries that is exchanged through channels of communication. Instead, information is constructed through communicative and interpretive processes within the social and historical contexts in which the discourse takes place (Tuominen & Savolainen, 1997). Tuominen, Talja, and Savolainen (2003) describe this paradigmatic shift as a transition from the “information-transfer perspective” to the “knowledge-production perspective” (p. 561). In the information-transfer perspective, information systems transfer knowledge that already exists within the world as an object from one person to another by means of an information or communication system. In the knowledge-production perspective, knowledge is not an object that exists within the world. Rather, it is sense made about the world that is continually being constructed and revised through interaction.

My research design offers an opportunity to see the active construction of financial wisdom, knowledge, information, and data through exploration of personal financial records management. Discussions with young adults about the meanings and value of personal financial information also creates the opportunity to understand how social discourses as well as economic and cultural contexts can shape the meanings and practices associated with the management of personal financial records. Social constructionism provides an interpretive framework for understanding the information needs and processes taking place in the context of consumer finance.

Theoretical Framework

This investigation was motivated by concerns about current conceptualizations of "personal information" in Personal Information Management and their limited ability to articulate its relationship to data. This study uses the Wisdom Hierarchy as its theoretical framework to describe how financial knowledge is constructed and diffused. As a theoretical framework, the Wisdom Hierarchy is compatible with the assumption that information is subjectively and socially constructed in alignment with a social constructionist epistemology within an interpretive ontology. For these reasons, it was used to inform my methodology, data collection, and analysis methods. Next, I will discuss the Wisdom Hierarchy as a theoretical framework of information.

The Wisdom Hierarchy

As a theory of information, the Wisdom Hierarchy has developed over a 30-year period. The Wisdom Hierarchy is composed of four interrelated units and assumes all human understanding is socially constructed from these units. These units are data, information, knowledge, and wisdom. At the base of the hierarchy is data. Data is symbolic in nature, capturing and representing properties of events and objects in a linguistic form (Ackoff, 1989). Information is generated from data and represents the first elevation in the hierarchy. Information is processed data that is descriptive and capable of answering questions (Ackoff, 1989). Information is made from data through sense-making, but data is meaningless without relational mapping and interpretation (Zeleny, 1987). With information, one is then able to move up the hierarchy and generate knowledge. Knowledge is constructed through the accumulation, relational mapping, organization, structuring, and renegotiation of meaning of information (Zeleny, 1987). Knowledge is instrumental and capable of application to facilitate action (Ackoff, 1989). With knowledge, one can reach the pinnacle of the hierarchy to develop wisdom. Wisdom is achieved through application with a sense of purpose and value informed by discourse (Zeleny, 1987). Wisdom entails a sense of judgment of when to apply knowledge to achieve a desired outcome with efficiency (Ackoff, 1989). Knowledge and wisdom are not fixed objects that exist outside of human experience (Zeleny, 1987). They are constructed through human interpretation, language, and conversation; tolerant of ambiguity, plurality, and flexibility thus resisting fixing as stable objects (Zeleny, 1987). Knowledge-production entailed by the Wisdom Hierarchy disturbs the tendency to objectify and fix “information” in the form of objects, such as in the form of paper or digital documents that can then be managed through carefully designed information systems and processes. Documents, and their contents, can play an important role in the production of new forms of knowing, but documents are never synonyms for data, information, knowledge, or wisdom in the Wisdom Hierarchy.

The Wisdom Hierarchy was selected as the theoretical framework for this research because of its clearly articulated structural relationships between data and information, providing greater conceptual clarity for usage of the terms within the area of PIM. The Wisdom Hierarchy also challenges PIM researchers to see personal wisdom and personal knowledge as part of the larger personal information environment of individuals, that people use to achieve goals and make decisions, as well as and can become forms of information and data that can be managed using information systems when converted into document forms. Furthermore, the context of personal financial records management offers the opportunity to reflect on the strengths and limitations of the Wisdom Hierarchy as a theoretical model of knowledge-production in Information Studies.

Sense-Making

Although technically a methodology, Dervin's (1998) concept of "sense-making" also provided significant theoretical scaffolding for understanding how knowledge-production might occur in the management of personal financial records. Rather than viewing information and knowledge as objects that can be discovered and collected, Dervin's sense-making views knowledge and information as "verbs", as "ways of knowing" that are made and unmade through active processes of construction, deconstruction, and reconstruction foundational to the human condition and experience (Dervin, 1998, p. 36; Tuominen, Talja, & Savolainen, 2003).

Knowledge creation and knowledge management percolate all aspects of human existence and underpin human navigation through a world characterized by chaos and diversity (Dervin, 1998, p. 37). Sense-making creates centrality and order through creative, collaborative, processional and tactful action on the part of human interlocutors (Dervin, 1998, p. 37). Knowledge, according to Dervin, is "always an activity, embedded in time and space, moving from a history towards a horizon, made at the juncture between self and culture, society, organization." (Dervin, 1998, p. 36). Dervin argues that information and knowledge are rarely ends in themselves and should be considered as means to ends that reflect the needs, wants, feelings, hopes, and thoughts of "sense-makers" (Dervin, 1998, pp. 39-40). Information and knowledge bridge gaps and allow movement towards desired outcomes and human goals (Dervin, 1998, p. 40). A particular challenge with sense-making is Dervin's interchangeable use of the terms "information" and "knowledge" (i.e., as information/knowledge), in a fashion like that seen in Personal Information Management research, which I argue is not in alignment with the Wisdom Hierarchy. A second challenge is the tendency to frame information as objects (i.e., as publicly accessible information products), which obscures distinctions between information as inferences made from data and documents, which might be used to record and communicate those inferences to others (Dervin, 1998, p. 43). For this reason, inspiration was drawn from Dervin's philosophical and epistemic perspectives in sense-making without adoption of sense-making as the theoretical or methodological frameworks for this research.

Data Collection and Analysis Methodologies

This section describes the data collection and analysis methodologies used for this study. The methodology informing data collection was the guided tour technique (Malone 1983; Kwasnik, 1991; Everett & Barrett, 2012; Kaye et al., 2014; Thomson, 2018, 2018). The methodology guiding data analysis was Reflexive Thematic Analysis (Braun and Clarke, 2006, 2019). Next, I discuss the use of guided tours as a data collection method in PIM research.

The Guided Tour

The methodology guiding my data collection was "the guided tour". The guided tour is a data collection technique commonly used in Personal Information Management fieldwork that combines observation methods and semi-structured interviewing during a short but intentional interaction between a researcher and a research participant (Thomson, 2012, p. 515). Thomson (2012) provides the following comprehensive definition of the guided tours,

> during a guided tour, a participant is asked to lead the researcher through the location (often one that is personally significant to him or her) while describing and explaining its features, thinking-aloud the ideas and feelings to which it gives rise, and responding to a researcher's gentle prompts and conversational inquiries (p. 515).

As a form of fieldwork, the guided tour interaction between the participant and the researcher takes place in a natural setting of the human-information interactions being researched, which allows researchers to explore the relationships participants have with objects in the environmental setting (Everett & Barrett, 2012) as well as the ways in which those interactions are shaped and reshaped by social practices and conventions (Cox, 2012). During a guided tour, the researcher is both a participant and observer, sometimes taking a passive and reflexive role in the social interaction with participants by observing, while at times taking on a more active role by gently steering the narrative of the tour using probes and prompts. Everett and Barrett (2012) argue that guided tours have parallels with photo elicitation techniques, which use photographs to stimulate conversation and serve as prompts to loosely structure the research interaction. Unlike photo elicitation, guided tours can make use of a wider range of material objects and features within the environmental setting to generate conversation and research data. These include various features of rooms including its spatial arrangement, the furniture present, the tools, and devices located in that setting, in addition to documents.

Like other forms of qualitative data collection and analysis, the researcher is a research instrument (Thomson, 2012, p. 515). Research data is generated through interactions between researchers and participants as well as within the researcher using subjective experience of the interaction as a form of data (Everett and Barrett, 2012 p. 35). The embodied nature of some research data generated through guided tours requires use of reflexive awareness as a technique to make tacit experiences explicit, to vet for accuracy and quality, to analyze in a systematic fashion, and compare to data collected using other techniques or by other researchers (Thomson, 2012, p. 515). During guided tours, participants are asked to use reflexive awareness when describing, explaining, thinking aloud, and feeling aloud about their personal information management practices. Researchers also require reflexive awareness to attend to what they experience, feel, and learn in an embodied sense during data collection in addition to what they observe and hear during the guided tour. The guided tour interview can be differentiated from other fieldwork techniques by its limited time-duration, usually taking place within a single interaction. Other forms of participant observation such as techniques used by anthropologists make use of long time periods of habituation, interaction, and trust-building but most guided tours are short and discrete social interactions restricted to data generation and collection (Thomson, 2012, p. 516).

Malone's (1983) foundational study of office workspaces is considered the first use of guided tours as a technique for data collection in PIM research (Bergman 2013; Thomson, 2018). A particular challenge with guided tours is that many of the researchers who report using the data collection technique often provide extremely limited descriptions of the procedural methods they used (e.g., Kwasnik, 1991; Barreau, 1995; Boardman & Sasse, 2005; Piras & Zanutto, 2010; Lindley et al., 2013; Kaye et al., 2014; Thomson, 2018, p. 519). Bergman (2013) notes that researchers rarely provide detailed descriptions of the protocols they used to conduct their guided tours but describes the general sequence as: (1) the researcher initiates the tour using a general open-ended question (e.g., please show me how you organize your files…), after which (2) participants are left to lead the remainder of the interview while occasionally being interrupted by the researcher, who (3) asks probes and clarifying questions along the way (pp. 466-468). To address this gap in explicit methodological procedures for guided tours, Thomson (2018) identifies seven steps common to studies that employed the technique (pp. 523-524). First, researchers should generate a clear statement of their aims and of the phenomenon of interest. Second, researchers should develop a data collection plan and identify the data collection equipment they will use to capture aspects of the guided tour (e.g., audio recorders, video recorders, etc.). Third, researchers should build rapport, reassure participants, and give them time to prepare for the guided tour. Fourth, researchers should initiate the guided tour with an open-ended request. Fifth, researchers should empower participants to take the lead in the direction of the guided tour. Sixth, researchers should use verbal and object probes or a loosely defined set of "prestructuring" questions to support participants throughout the tour. And seventh, upon exhaustion of probes, the researcher should terminate the guided tour. Thomson's seven steps make an important contribution to the area of PIM by providing the most clearly articulated process for conducting a guided tour to date.

Kaye et al. (2014) make methodological observations and recommendations that can inform future work using guided tour to explore the topic of personal finance from a HCI perspective. They found participants were more comfortable discussing financial topics using human contexts and life events as the "conversational scaffolding" rather than talking directly about financial events themselves (Kaye et al., 2014, p. 529). Asking direct questions about personal finances such as salaries, bank account balances, and debts is socially taboo, but these topics become more approachable when framed around transitional roles and events (Kaye et al., 2014, p. 529). For example, discussing the financial implications of changes in employment or place of residence allows participants and researchers to side-step some of the vulnerability and social awkwardness associated with discussing topics such as a participant's salary, account balance, or debt burden directly. Kaye et al. (2014) also suggest that transitional roles and events can serve as conversational scaffolding when presenting and translating the findings finance to general audiences. They recommend designs for novel information systems, as a potential output of HCI research on financial topics, reflect and cater to a wide range of human experiences, sensations, and contexts connected to personal finance because these are deemed more acceptable by potential users than existing systems that rely too heavily on presenting structured numerical content only (Kaye et al., 2014, p. 529-30). These observations suggest the need for research approaches that leverage holistic and human-centered techniques for studying information behaviors in personal finance that contextualize individual information and financial behaviors within wider social practices and human experiences. Now I turn to a discussion of the methodology that informs the data analysis process used in this research.

Reflexive Thematic Analysis

The methodological framework I used to interpret research data collected using was Braun and Clarke's Reflexive Thematic Analysis (RTA) (2006, 2019a; 2019b). Reflexive Thematic Analysis was chosen because it is a versatile and systematic methodology commonly used for qualitative and social constructionist research that is not tied to any specific theoretical framework (Braun & Clark, 2019a). As a methodology compatible with a social constructionist epistemology, Reflexive Thematic Analysis seeks to theorize how events, realities, meanings, and experiences are produced and reproduced through discourses within society (Braun & Clark, 2006; 2019a). Researchers who use Reflexive Thematic Analysis are required to critically analyze the sociocultural contexts and structural conditions that shape what participants say or do rather than seeing reality as solely reflective of individualistic psychologies and motivations, the latter of which is common within essentialist or realist epistemic positions (Braun & Clark, 2006, 2019a).

Within Reflexive Thematic Analysis, the analyst's subjectivity and creativity are tools in the theory generating process. New understanding is constructed using Reflexive Thematic Analysis at the intersection of data, the method, and the researcher (Braun & Clark, 2019a). In RTA, themes do not passively emerge through coding processes (Braun & Clark, 2006, 2019a). Rather, analysis is an active process of inquiry during which the researcher must question their own assumptions as they code and interpret data (Braun & Clark, 2019a). Researchers should aim for the highest degree of consistency, coherence, and transparency in their coding and interpretive processes (Braun & Clark, 2019a). Although systematic in procedure, Reflexive Thematic Analysis is a recursive process rather than linear (Braun & Clark, 2019a). Writing is an integral part of the analysis process that requires the analyst to move back and forth between the coded data and the theorized interpretation of the data in a reflexive and engaged way (Braun & Clark, 2019a).

Reflexive Thematic Analysis has six discrete but recursive steps (Braun & Clark, 2006). Analysis occurs simultaneously with data collection and writing activities (Braun & Clark, 2006). The first step of RTA is to familiarize yourself with the data without coding. In the familiarization step, the analyst transcribes the data, reads, re-reads, and begins recording initial observations and impressions of the data (Braun & Clark, 2006). The second step in RTA is the initial coding of the data to identify features in the dataset. Braun and Clarke recommend coding data as it is collected rather than beginning to analyze after to develop tentative themes and observations that can be verified during later stages of the data collection and analysis process (Braun & Clark, 2006). The third step in RTA is to sort the data into themes using the codes assigned to data extracts (Braun & Clark, 2006). The extracts should be collated to allow side-by-side comparison for consistency in coding and coherence across the dataset in the subsequent step (Braun & Clark, 2006). The fourth step in RTA is to review the tentative themes (Braun & Clark, 2006). The review step has two sub-tasks. The first task of review requires comparison of the data within tentative themes (Braun & Clark, 2006). The second task of review entails comparison of themes across the entire dataset generating a thematic map of the analysis (Braun

& Clark, 2006). In the fifth step of RTA, themes are no longer treated as tentative and given names and definitions (Braun & Clark, 2006). The sixth and final step of RTA is preparation of the final written report for dissemination (Braun & Clark, 2006). Unlike other popular qualitative analysis methodologies, Reflexive Thematic Analysis does not require use of codebooks, inter-rater reliability tests, or pre-determined coding frameworks because of its rejection of realist assumptions that the themes reside within the data waiting to be discovered by the researcher, in favor of the position that meaning is actively constructed by the research through their interaction with the data (Braun & Clark, 2019a).

Braun and Clarke provide a set of technical definitions to harmonize the use of common terms across investigations using Reflexive Thematic Analysis. Themes refer to patterns of shared meanings within a dataset (Braun & Clark, 2019a). A subtheme is a theme-within-a-theme (Braun and Clark, 2019a). Domain summaries are descriptions of the range or diversity of meaning related to a particular topic or "domain" of discussion within the dataset (Braun & Clark, 2019a). A central organizing concept is an idea or pattern that unites themes across the entire dataset (Braun & Clark, 2019a). Researchers can code and identify two distinct kinds of themes using Reflexive Thematic Analysis: (1) semantic themes and (2) latent themes. Semantic themes capture explicit or surface level meanings, which are descriptive and summarize the content of the data being coded (Braun & Clark, 2006). Semantic themes are useful in early stages of analysis for identifying features in a dataset. Latent themes are interpretive conceptualizations that go beyond the surface level content of the data (Braun & Clark, 2006). Latent themes theorize the significance of what participants say by identifying its broader meanings and implications (Braun & Clark, 2006). Reflexive Thematic Analysis assumes that the semantic content of data is shaped by underlying ideas, assumptions, conceptualizations, and ideology otherwise known as social discourse (Braun & Clark, 2006). Reflexive Thematic Analysis also assumes that the descriptions provided by participants are implicitly theorized already because of the way discourse shapes human language (Braun & Clark, 2006). The role of the researcher in analysis is to make discourses contained within the data explicit, often framed as a form of storytelling about its meaning (Braun & Clark, 2006). Both semantic and latent themes are appropriate outputs of Reflexive Thematic Analysis, but researchers should aim to identify and articulate latent themes from a social constructionist epistemic orientation.

Researchers can also approach coding from two distinct directions: (1) deductive or (2) inductive coding. Deductive, or theoretical coding, uses a pre-existing coding framework such as a theory to code data (Braun & Clark, 2006). When using a deductive approach, coding and analysis is driven by a theoretical interest in a "top-down" fashion looking for features within the dataset that correspond to specific research questions or map to a predetermined theoretical framework (Braun & Clark, 2006). Inductive, or open coding is the opposite of deductive coding. Inductive approaches are data-driven, and the resulting codes may not correspond to the research questions or theoretical interests that originally motivated the research (Braun & Clark, 2006). In an inductive approach, codes are generated in a "bottom-up" fashion resulting in themes that are strongly linked to the features of the data but may not provide direct answers to research questions or map to pre-existing theories in the field (Braun & Clark, 2006). Inductive approaches make particular use of the researcher's subjectivity and interpretive creativity as an analytic resource to generate themes (Braun & Clark, 2019a). Analysts can use both inductive and deductive approaches to code data, but researchers must be explicit about which approach they used when analyzing the data (Braun & Clark, 2006).

Unlike other common qualitative analysis methodologies like Grounded Theory, Reflexive Thematic Analysis does not use the concept of data saturation to justify sample size or signal the end of the data analysis process (Braun & Clark, 2019b). Braun and Clarke reject the concept of data saturation based on the argument that "meaning is not inherent or self-evident in data" but rather meaning is actively constructed by the researcher using reflexive, interpretive, open-ended processes without fixed end points (Braun & Clark, 2019b, p. 10). Because Reflexive Thematic Analysis' epistemic assumption is non-realist, Braun and Clarke argue researchers must instead use their own judgment consistently with the goals and purpose of the analysis to decide when the data collection and reflexive analysis process is complete (Braun & Clark, 2019b, p. 10). Furthermore, Braun and Clarke recognize pragmatic considerations and constraints as forces in qualitative research that determine sample size and the temporal duration of an analysis. These forces include social norms within the discipline or field of study reflected in the demands and expectations of gatekeepers such as peer reviewers, journals and conferences, thesis examination committees, and funding bodies that evaluate research designs and knowledge claims (Braun & Clark, 2019b, p. 11). Other pragmatic constraints include degree time limitations as well as the number of resources and funds available to researchers (Braun & Clark, 2019 p. 11). In the following section, I provide a detailed overview of the specific methods and procedures used in this research.

Methods

This section outlines the specific assumptions, procedures, and analytic decisions I made throughout my data collection and analysis process. In doing so, it provides an overview of the processes I used for recruitment, data collection in the form of guided tour semi-structured interviews, transcription and analysis, as well as the technological supports and ethical considerations that underpin this research. First, I will describe my recruitment process.

Recruitment

This study recruited "young adults" from the greater Montréal and Toronto areas as participants. For this study, young adults are defined as persons between the ages of 18 and 25 years old. Participants were recruited using several overlapping strategies: (1) through paper posters posted on bulletin boards across McGill's downtown campus; (2) digital classified ads posted on McGill University's Career Counseling website; (3) social media posted on my Facebook profile; (4) and through word of mouth (see Appendices 1 and 4 for copies of the recruitment materials seen by participants). Classified ads targeting current undergraduate students and recent graduates seeking employment opportunities was the most successful strategy for attracting and recruiting participants. All calls for participants in the form of paper posters, virtual posters, and classified ads contained an identical short description of the study, a simple image representing my interest in personal financial records, my contact information and details about my supervisory team, and a QR code that directed potential participants to the website I use to host my research profile where people could obtain additional information about the study. This study used convenience sampling due to the exploratory nature of this research and my initial high-level of uncertainty over how difficult it might be to recruit any participants willing to give guided tours of collections of personal financial information in their homes.

My website was an important tool for introducing the study (Appendix 1), for personifying myself as a researcher to potential participants, and for managing the delivery of general information about the study. My introduction and personification as a legitimate researcher were achieved through inclusion of two photos that put a face to my name, a copy of my CV, a list of my recent publications and research presentations, and contact information identifying my office's location on campus. My website also had a tab specifically dedicated to research participation opportunities for this study. Within this tab, potential participants could consult several resources related to the study. This included a general overview of the purpose of the study and an overview of participant inclusion and exclusion criteria. I chose to proactively provide virtual copies of all documents used in the data collection process to be as transparent as possible about the data collection procedures and intentions of the study. I made the decision to provide all study documentation proactively to prospective participants, including a copy of the study's ethical approval certificate from McGill University's Research Ethics Board, a virtual copy of the study's informed consent documentation, a copy of the pre-interview preparation instructions for participants, and a copy of the interview protocol to help insure transparency about the study's methods and supervision. Lastly, I maintained a Q&A page which was regularly updated with responses to all the questions I received via email from prospective participants, to provide transparent and uniform clarifications about the study. The Q&A page was also effective in reducing the workload associated with email communication with participants prior to enrolment in the study. Use of the researcher's website was an effective tool for delivering the kinds of clarifications participants needed to feel fully informed in advance about the purpose and data collection processes used in this research.

All recruitment materials directed participants to contact the researcher by email to express their interest in the study. Emails received from prospective participants were responded to within 48 hours with a general description of the purpose of the study and an overview of the screening process. Participants were asked to review and confirm their eligibility to participate using the study's inclusions and exclusion criteria. If confirmed, I asked participants if they had any questions or concerns about the purpose of the study and data collection methods. If participants indicated their desire to continue with the study, I then asked participants to provide me with a few potential 1-hour time slots in the following 14-day window for the guided tour interview. After agreeing upon a time slot, I then asked participants to provide his or her address to finalize their registration in the study. Upon receiving addresses, I provided participants with a link to a guided tour preparation information sheet on my website that provided more detail on the kinds of data I would and would not collect as part of the guided tour (see Appendix 1). I specifically informed participants that during the guided tours, I would take photos as examples of financial records and workspaces that would appear in research publications and my dissertation without intentionally collecting personally identifying information and sensitive financial data contained within personal financial records, such as names, addresses and contact information, account numbers, bank account balances, or credit card limits. I made the decision not to collect personally identifying information and sensitive financial data to reduce potential risks and unintended negative consequences associated with participation in the research (e.g., identity theft and fraud). I also made the decision not to collect sensitive financial data to focus conversation on human experiences related to financial recordkeeping and violating social taboos associated with asking about personal finances directly as recommended by Kaye et al.'s (2014). The guided tour preparation information sheet also contained instructions to the participant not to clean their apartment in advance of the guided tour to ensure the state of their personal information environment was as "natural" as possible. Participants were then given an additional opportunity to ask any questions, raise concerns, or withdraw from the study without prejudice. All participants received a reminder email 24-hours before their scheduled guided tour to confirm their availability and interest in the study.

All participants were given $10 cash in exchange for their time at the start of the interview and were instructed that they could keep the money but withdraw their consent and data at any time after starting the guided tour without penalty or prejudice. This clause was present in the informed consent documentation and the FAQ page on my website but was not emphasized to participants prior to enrolment in the study to reduce the risk of registration solely for the purpose of collecting compensation. No participants expressed discomfort during the interview, skipped questions, withdrew from the study, or refused compensation. I now turn to a description of the guided tour protocol used for this research.

Participants

This study focused on young adult personal finance for the following reasons. Young adults are in the earliest stages of their financial lives. Young adults have limited previous financial management experience to draw upon in comparison to older cohorts of adults, and therefore stand to derive the greatest benefit from the findings of this research. Young adulthood is a time of limited financial resources and income generating potential in general due to limited past work experience and high educational time constraints typical of this period in people's lives. Consequently, financial recordkeeping might have more salience and value to young adult populations in comparison to those studied by Kaye et al. (2014). Youth may face the challenge of more limited awareness of specialized tools and technologies for financial recordkeeping and minimal formal instruction for managing financial documentation in comparison to older adults, due to fewer direct personal experiences with personal financial management. Financial mismanagement can have disastrous consequences for all adults, which young adults might experience more acutely due to their limited financial resources. Furthermore, the use of online consumer banking is becoming more widespread resulting in greater distribution and fragmentation of collections of personal financial documents across electronic devices and service provider information systems, which increases the level of difficulty of managing personal financial records. If young adults are more eager adopters of digital technologies for personal finance in comparison to older adults, they may experience higher levels of fragmentation and management burdens for personal financial records in comparison to older adults. For these reasons, young adults were selected as the target population for this study.

Both inclusion and exclusion criteria were used to screen potential participants and construct the study's sample. Three inclusion criteria were used to determine eligibility to participate, participants were required to be: (1) young adults between the ages of 18 to 25 residing in Montréal or Toronto at the time of research enabling both the researcher and participant to be present in the same time and location for the purpose of guided tours; (2) with at least 6 months of part-time or full-time work experience any time between the ages of 16 to 25 giving them at least some direct experience with managing financial resources and documentation associated with employment; and (3) with at least one financial expense that they were uniquely responsible for managing, such as a credit card or cellphone account, ensuring they had some financial documentation within their possession associated with fulfilling those financial obligations. The purpose of the inclusion criteria was to ensure participants fit within the targeted demographic age range and had some direct personal experience with managing personal financial records.

Five exclusion criteria were used to disqualify some young adults from participation in the study to restrict the scope unit of research to individual rather than group finance (i.e., families). Participants could not be (1) married or cohabitate with a partner with whom they had combined finances or joint bank accounts although young adults in romantic relationships where both partners maintained separate accounts and collections of personal financial records remained eligible to participate; (2) a parent since they would be responsible for managing the financial documentation of their dependents; (3) people with less than 6 months of work experience between the ages of 16-25 since they were deemed to have insufficient levels of direct experience managing financial resources and associated documentation central to this research; (4) people without at least one financial expense that they were independently responsible for thus limiting their overall direct experience with managing financial resources and records; and (5) people who filed for bankruptcy anytime between the ages of 16-25 to prevent the collection of data from cases with extreme experiences of financial mismanagement or hardship atypical of the general population of young adults. The exclusion criteria were designed to ensure participants had both sufficient and somewhat comparable experiences with managing personal financial documentation.

Ethics

It is important to discuss the ethical considerations and agreements I made to protect the privacy and overall well-being of participants as part of my research design. Without the trust and collaboration of the participants, this research would not have been possible. Strong and explicit ethical parameters in this research allowed participants to speak about their diverse financial situations and practices with honesty and vulnerability.

Ethical approval for this study was received from McGill Research Ethics Board (REB). Ethical approval is required for all research involving human participants and requires researchers to anticipate and develop plans to mitigate potential risks and harms. Careful consideration of risks and harms is particularly relevant to this study due to personally identifying information contained within personal financial records and the sensitivity of personal financial data, which could culminate in identity theft or financial fraud in the wrong hands. The decision not to collect personally identifying information was informed by Cavoukian's (2011) seven foundational principles of Privacy by Design. Although many participants felt comfortable showing some of their financial documents and records in uncensored forms because they assessed their contents as low risk, I was adamant about not collecting financial data that could pose risks of financial exploitation or could lead to the unauthorized identification of participants. Another related safeguard was that all data and photos, including audio recordings and transcripts, were stored offline under password protection to prevent unauthorized access by third parties. At the completion of each interview, participants were given the opportunity to review in detail all photos taken by the researcher and give a final informed verbal consent for use of the photos for analysis and presentation as described in my informed consent documentation.

Ethical approval was obtained by filling out a request for ethical review from McGill University's REB and successful completion of Tri-Council Policy Statement 2 (TCPS2) Course on Research Ethics (CORE). Ethical approval was requested from the REB after completion and approval of my research proposal by my doctoral supervisory committee. To receive ethical approval, I was required to describe my data collection protocol and provide copies of my guided tour procedures, consent forms and any other materials that would be used to recruit participants (e.g., my recruitment poster). My research design was evaluated as low risk by the REB, and I received ethical approval without any major difficulties. Upon receiving ethical approval, the content of reviewed materials cannot be changed without amendment by the REB. Ethical approval for this research was granted on the condition that no photos of the faces of participants be collected and that no personally identifying information and sensitive financial data that might place undue financial or identity-related risks to participants would appear in the dissertation or subsequent research publications and presentations. Approval required that participant anonymity and privacy were privileged above all other considerations. See Appendix 2 for copies of my ethics documentation.

All participants who invited me into their home fully consented to the study's methods including allowing the researcher to audio record the conversation and take pictures of spaces and financial records as illustrative examples that could be used in written reports and presentations. I provided participants with access to a supply of opaque sticky notes of various sizes and shapes that they could use to hide sensitive or personally identifying content of personal financial records, apps, and websites to prevent their accidental capture. Participants had ultimate authority during the guided tours to decide which content was private and which could be collected by the researcher. Additional verbal consent was obtained prior to taking each individual photo, which gave participants the opportunity to assess risks and obscure any personally identifying information from financial records using sticky notes or other household objects such as spoons and personal effects of their choice. Participants were also free to remove any non-financial personal effects from spaces that they did not want captured as part of the data collection process (e.g., personal or family photos, personal hygiene products, evidence of illicit drug or alcohol use, etc.). I asked participants to temporarily remove personal photos and government identification from areas being photographed as per REB requirements.

On the day of each guided tour, I printed out a copy of the guided tour protocol, the demographic questionnaire, and two copies of the informed consent statement. Upon arrival at the participant's home, I rang the doorbell or emailed the participant announcing my arrival (in the case that the participant did not have a doorbell or access to their apartment's buzzer system). I was greeted by the participant at the door, where I introduced myself and asked for permission to enter. Upon entering the home of the participant, I asked where they were most comfortable sitting down to complete the screening and informed consent process. I provided the participants with two paper copies of the study consent forms and a copy of the eligibility criteria. Prior to proceeding, I asked participants to review the inclusion and exclusion criteria of the study and provide verbal confirmation of their eligibility. Upon confirmation of eligibility, I provided participants with a verbatim oral summary of the contents of the study documents and consent forms. It was important to me as the researcher to ensure that the participants had a clear understanding of the guided tour protocol with ample opportunities to ask questions, express concerns, and give consent in a free and informed fashion. After verbal consent was received, participants were asked to sign both copies of the consent form, which was also signed by the researcher. One copy was given to the participant to keep, and one copy was retained by myself. Participants were then given $10 in a plain envelope.

During the guided tours, most participants showed me their personal financial records without censure despite the availability of sticky notes to hide financial figures such as bank account balances. Participants agreed to give the researcher a guided tour of their most personal and private spaces within homes, in their most “natural” or disordered states. Most often, this meant young adults agreed to show their bedrooms in varying degrees of disarray, to tolerate the researcher taking photos of the most hidden recesses of their closets while they emptied out the deepest drawers in their desks and wardrobes in search of information items central to the focus of the research. Because of the level of intimacy and trust entailed by the guided tour research and topic of personal finance, it was of utmost importance that participants feel comfortable and in control of all aspects of their participation. I strategically and periodically stopped the interviews to do consent “check-ins” to give participants the opportunity to reflect on their comfort-level during the data collection processes and ensure that their consent remained informed and ongoing.

Certain risks on the side of the researcher also required careful management. I used a “buddy system”, in which I “clocked in” with a trusted doctoral colleague at the start of an interview and then “clocked out” with the same buddy upon completion. Although the “buddy” was never given the address or any other identifying details about the participant or location of the interview, use of a buddy system was a safeguard to ensure someone would know if I was missing and potentially in a dangerous situation. I was careful to assess the overall “scene” when entering a participant’s home, trusting my instincts about whether the location and participant were safe and genuinely interested in research participation. I credit the use of the website as a tool for screening and communication prior to participation with both building trust and rapport with participants prior to meeting as well as filtering out potential participants who might present safety risks to the researcher. Next, I discuss my guided tour protocol.

Guided Tour Protocol

This section describes my data collection protocol in detail. Data collection took place through 23 guided tours in the homes of participants over a period of 8 months between March and October of 2015. Guided tours were approximately 1 hour in duration, conversational, and mostly informal in nature. Guided tours were punctuated with a series of predefined prompts to support participants with the overall itinerary of the guided tour after which participants were free to decide which features of their personal space of information and collections of personal financial records they wanted to present and discuss as the content of their guided tours (see Appendix 3).

At times, I asked participants to pause their tours so that I could seek clarifications and test my understandings or assumptions, ask probing questions that invited participants to expand upon things they recently said and showed, and to take photographs of the spaces and documents presented by participants as the content of their guided tours. The photos taken during the guided tours were not used as prompts for generating research data, such as is the case in studies using photo elicitation. Throughout the guided tours, I made handwritten notes of observations and reminders for probe questions on a printed copy of my guided tour protocol. I also used this printed copy of the protocol as a checklist to help me ensure all topics in the protocol were addressed within each guided tour. The full list of prompts and probe questions used was available on my website, which participants were able to review in advance if they so desired (see Appendix 1).

Next, I discuss the specific prompts and probes used during the guided tours. The guided tour protocol I developed contained 8 topics to support conversation during the research interaction (see Appendix 3). After completion of the screening and informed consent processes, I informed the participant that we could now start the guided tour and I started audio recording.

The first topic of the guided tours was a personal introduction. Participants were asked to introduce themselves and provide me with a little bit of context in which the interview was taking place. Participants used this topic to provide background information about who they were, their educational background, their living arrangement, their financial situation, as well as to reflect on their recordkeeping style and values. This topic was a rich source of data that provided insight into how young adults thought and felt about financial recordkeeping in a general sense as well as some of the needs, goals, and preferences that motivated how they managed their collections of personal financial records.

The second topic of the guided tours was an introduction to the spaces where participants stored and normally interacted with personal financial records within the home. Participants were asked to take me to the space where they normally manage their personal financial records and provide me with an overview of the space. The most common space was their bedroom, which represented the young adult's most personal space within their home. During this portion of the guided tour, I used a series of probes to support participants on the tour. Probes included questions about their use of material artifacts in the physical space for managing personal financial records such as work surfaces like desks and storage furniture like drawers, cabinets, and shelves. I also used a series of probes about digital spaces and tools in personal financial records management including items such as computers and laptops, cellphones, tablets, email, cloud storage, and specialized financial software like Mint.com or Quickbooks. The use of probes to prestructure this portion of the guided tour was important for helping participants overcome the tendency to focus exclusively on physical spaces, objects, and records. Photographs of spaces were taken during this portion of the tour using a point-and-shoot digital camera and SD memory card.

The second topic of the guided tours also included examples of personal financial records. I asked participants to shift the focus of their tour from the space to the contents of their personal collections. During this portion of the guided tour, participants showed examples of documents they created or collected as part of managing their personal finances, pulling samples from piles, desk drawers, wallets, hard drive folders, cloud services, websites, and apps. Probes were used to inquire about specific kinds of personal financial documents such as budgets, reminders, and time management tools. Most photographs of example documents were taken during this portion of the tour.

The third topic of the guided tours was structure and organization of personal financial records. Young adults were asked to shift the direction of the tour to focus on the strategies they use to organize their personal collections. Participants responded by discussing and providing examples of the categories they used to group documents in addition to the ways the arrangement of documents differed between physical and digital spaces. Specific probes were used to learn more about how organizational structures developed and changed over time, whether they experienced challenges because of how they organize their personal financial records, and how long they keep financial documents. Photographs on folder labels, directory structures, and spreadsheet column headings were taken during this portion of the tour.

The fourth topic of the guided tours was processes associated with the management of personal financial records. Participants were asked to describe the tasks and actions they typically associate with managing personal finances. Participants were asked to illustrate how personal financial records moved throughout the personal space of information throughout their "personal financial management workflow". Specific probes used during this portion of the guided tour included questions about the frequency of the activities described by young adults as well as the impact of income tax season on their "normal" personal financial records management.

The fifth topic of the guided tours was information retrieval. Young adults were asked to illustrate how they retrieve financial documents from their personal collections. Participants were asked to choose a financial record from their personal collection and then try to retrieve it while talking aloud about their retrieval strategy or process. Participants were also probed to reflect on an instance when they lost a financial document permanently or temporarily.

The sixth topic of the guided tours was information seeking. Participants were asked to reflect on information seeking strategies. Participants were asked to illustrate examples of information resources they used to support personal financial records management and financial management. The purpose of this prompt was to better understand the kinds of documents young adults brought into their personal collections from public sources as theorized by the consumption model of PIM. Specific probes were used to help participants reflect on their use of online resources such as websites and social media as well as offline resources such as books, magazines, governmental documents and guides, etc. Probes were used to help participants reflect on instances in which personal financial records and information resources related to personal finance were directed to them by others. Participants were probed on the kinds of information sources they trusted and consulted when making financial decisions, such as signing up for a new credit card or other financial product or service. Participants were also probed about role models who influenced how they manage their personal financial records to better understand the potential role of financial socialization in personal financial records management.

The seventh topic of the guided tours was challenges and solutions. Participants were asked a design question, which asked them to imagine an ideal tool or technology for managing personal financial records. They were asked to describe what it would be and what it would do. The purpose of this task was to help participants reflect on information needs and records management challenges they experience in the practice of managing personal financial records. Participants were encouraged to allow their imagination to be unconstrained by today's technologies or social conventions when imagining better ways and digital technologies to manage personal financial records.

The eighth and final topic in the guided tours was potential impacts of the guided tour. Participants were asked to reflect on the guided tour experience itself. Participants used this opportunity to discuss things they learned about themselves and their personal financial records management because of participation in this research. Participants were probed whether they thought they might change aspects of their records management practices after the guided tour. Participants were also probed about whether they anticipated any future transitional life events and roles that might impact or necessitate them to make changes to their current practices. After this, I signaled to the participant that we could formally close the guided tour.

Upon closing, I informed participants that I would stop audio recording. Participants were then asked to fill out a paper copy of the demographics questionnaire and insert it into a plain envelope. Demographic questionnaires were kept unlinked to guided tour data and consent forms as a mechanism to enhance anonymity of participants and protect privacy. I intentionally sought to prevent future readers from being able to identify participants by linking demographic data with intimate contextual details contained within the guided tour transcripts. My decision to unlink demographic questionnaires from guided tour data prevents secondary analysis of the dataset using participant demographics as variables, since representative sampling techniques were not used, and the dataset was never intended to be analyzed in this fashion. After filling out the demographic questionnaire, participants were given an opportunity to review, approve or reject all photos taken during the guided tour. Rejected photos were deleted in front of the participant. To close the interaction, participants were thanked for their time and effort as they escorted me out of their residence.

Overall, the guided tour protocol was a successful method for observing the spaces, technologies, and records that young adults regularly interact with as a part of managing personal finances. The use of probes was important for helping participants consider digital spaces and records as part of their personal space of financial information, which they might not have done without the support of these probes. The need for the introduction and closing topics were identified and added after the first interview. Over the course of the 23 guided tours, I was also able to adapt and refine my probes to follow up on observations made by previous participants and test my own assumptions and hypotheses about meaning contained within the data. Although a few participants did make small changes to the structure and contents of their personal collections of financial records during the guided tours (e.g., by reorganizing or discarding documents), the guided tour was not particularly effective for observing natural interactions with records in this specific project. For example, no participants completed real financial tasks (e.g., receiving and paying bills, searching for information resources to answer financial questions or support recordkeeping practices, etc.) during guided tours. Therefore, these guided tours should not be viewed as a form of naturalistic observation or shadowing of participants, which could allow for comparisons between reported and actual practices. Despite these limitations, the guided tour protocol produced a detailed dataset. On average, guided tours were 40 minutes in duration, with a range of as little as 18 minutes for the shortest tour and up to 1 hour and 45 minutes for the longest. This resulted in an average of 12 pages of transcribed single-spaced text per tour, with a range of 7 to 25 pages that an average of approximately 4500 words per transcript with a range of 1500 words to 12000 words each. A total of 90 photos were taken over 23 guided tours with an average of 4 photos taken per tour and a range of 1 to 7 photographs taken per participant. Next, I describe tools used for transcription and analysis of my dataset.

Transcription and Analysis Tools

Throughout the data collection process, I transcribed interview data soon after completing each guided tour using the software ScribeExpress. ScribeExpress is a specialized word processor with built in features that allow researchers to start, stop, rewind, speed up, and slow down audio recordings while they manually produce a typed transcript of the content of an audio file. My transcriptions included instances of “conversational repairs” where participants corrected themselves or changed directions in their speech mid-sentence to allow for richer insight into how meaning is actively shaped through speech including how people used social discourse and ideology to frame and interpret their responses to aspects of the guided tour (Potter, 1996). For readability, excerpts that appear in the subsequent results and discussion chapters were streamlined for increased readability by removing conversational repairs and adding in contextual details that speakers often leave out in natural speech using square brackets with careful regard not to distort the meanings conveyed by participants.

I used the open-source qualitative analysis software Taguette to code and analyze the transcribed guided tour data after transcription. Taguette supports qualitative analysis by allowing researchers to “highlight” features in their dataset by dragging their cursor to select text. The researcher then codes the data by assigning a “tag” to the highlighted data, either by generating a new code using natural language or reusing a code assigned to a previous feature in the dataset. Researchers can assign an unlimited number of tags to the same feature in a dataset allowing great flexibility in how data is coded. Taguette automates the sorting and review of coded data by allowing researchers to generate lists that display all the excerpts assigned to a particular code. At any time in the coding process, the researcher can use Taguette to sort tagged data. If a unit of data is described using multiple tags, the additional tags are displayed underneath the unit of data allowing the researcher to visually assess cooccurrence of codes, which can contribute to the identification of themes within the dataset. Researchers can also use Taguette to conduct keyword searches of their dataset.

Compared to other qualitative data analyses applications such as NVivo or Atlas.ti, Taguette is extremely “low-tech” and only supports manual coding of datasets. For example, Taguette does not support proximity searches, the generation of tag clouds or other diagrams, or use artificial intelligence to suggest relationships between codes. Taguette does not contain any features that allow researchers to articulate relationships between codes although researchers can revise the wording of their tags at any time and reassign all units of data under one tag into another as they revise their coding schemes. Taguette’s support for theme development is limited, requiring researchers to use other tools and techniques for creating thematic maps that articulate the relationship between codes, subthemes, themes, and central organizing concepts.

To construct the thematic maps that appear in the following results and discussion chapters, I used the open-source diagramming software yEd. yEd allows researchers to manually create diagrams by dragging and dropping shapes, inserting text, and then arrange those objects to create visual representations of themes and subthemes. Next, I turn to a discussion of my analysis process.

The Reflexive Analysis Process

This section describes my analysis process. The trajectory of analysis was not linear in this investigation. I spent a long period of time reviewing, analyzing, and reanalyzing the data before feeling confident in the findings presented in the following chapters. Although the duration of time used for analysis was atypical and not ideal, it took me a long time to develop enough "theoretical sensitivity" (a term borrowed from Strauss and Corbin, 1990), to feel confident in the findings and theoretical contributions of this research.

This research used both deductive and inductive coding. For the deductive portion of the analysis, Rowley's (2007) synthesis of the Wisdom Hierarchy was used to code for examples within the data that corresponded with theoretical concepts of data, information, knowledge, and wisdom. The aim of this phase was to answer my first research question by describing the contents of collections of personal financial information and exploring how the Wisdom Hierarchy can improve current concepts of "personal information" used within the area of PIM and related fields. Then, inductive coding was used to deepen the analysis. First, inductive coding was used to explore the relationship between data and information within collections of personal financial information more in greater detail. Portions of the transcripts identified as examples of data and information during the deductive phases were revisited to explore how data is used to generate information and the ways in which documents and digital technologies interact with the knowledge-production process. The aim of this portion of the analysis was to answer research question 2, which seeks to better understand how interactions with data generate information. Then, the entire dataset was inductively coded again to identify instances when participants discussed motivations and challenges that motivate or necessitate the creation, use and management of personal financial records. The purpose of this portion of the analysis was to answer research question 3 and better understand the ways in which social discourses shape financial recordkeeping as a social practice as well as the ways in which personal financial knowledge and wisdom are constructed by young adults. Now I describe the analysis process in greater detail using the 6 steps of Braun and Clarke's (2006, 2019a) Reflexive Thematic Analysis.

Familiarization

Familiarization involves transcription, reading, and re-reading of the transcripts to generate initial ideas about the meaning of the data (Braun & Clarke, 2006, p. 87). Manual transcription of the audio recordings was the first step in familiarizing myself with the contents of each guided tour. Each guided tour was transcribed in its entirety including the prompts and probes used by the researcher. At times, the photos taken during the guided tour were reviewed visually to verify and contextualize dialogue with participants. I also reviewed the handwritten notes and observations I made during each guided tour on my paper copy of the guided tour protocol. After transcription, I printed out paper copies of each transcript to read and start to generate initial ideas about the data. Using pencil, I underlined features in the text that caught my analytical attention. I also wrote short notes and keywords in the margins to capture preliminary impressions and observations about features in the data.

Generating Initial Codes

Generating initial codes entails identifying interesting features within the data in a systematic fashion across the entire dataset and then separating and grouping data around the initial set of codes (Braun & Clarke, 2006, p. 87). To generate the initial set of codes, transcripts were uploaded into Taguette and then reviewed. Taguette allows researchers to highlight text and then assign codes to those features. For the deductive portion of the analysis, features of the data that corresponded with Rowley's (2007) definitions of data, information, knowledge, and wisdom were coded as such to allow for comparison and verification after collation. Then, the contents of the photos taken during the guided tours were appraised, loosely inspired in part by the methods used by Dowdall and Golden (1989). Appraisal involved looking for features within the photographic examples documents and spaces that corresponded with oral descriptions provided by participants during guided tours and theoretical definitions from the Wisdom Hierarchy to code the guided tour transcripts. Features of the photographs were also assigned a set of inductive codes that described features unique to the photographs (e.g., instances when participants used annotation, highlighting, and underlining to supplement the contents of personal financial records). Although photographs were analyzed in a systematic fashion, they were not used for thematic development and served primarily as memory supports for me as the researcher during analysis and as illustrative examples for readers during dissemination, which distinguishes my approach from Dowdall and Golden (1989).

For the inductive portions of the analysis, the data was reviewed and re-coded using semantic content from the data. For research question 2, initial codes focused on identifying the functions of data, information, documents, and digital tools in personal financial management to better understand how ascension up the Wisdom Hierarchy takes place. For research question 3, the features of the data that gave insight into the social discourses that young adults use to interpret their own management of personal financial records were coded. Initial coding for research question 3 was focused on identifying the social challenges and pressures that young adults face when managing personal finances as well as the ways in which young adults developed financial knowledge and wisdom. After developing the initial set of codes, Taguette was used to collate the coded data. I then compared all the data within each code to assess my consistency in usage of the codes across guided tours and the fit between the code and highlighted data within each guided tour. This allowed me to revise the codes assigned to highlights, harmonize code usage, and identify instances in which multiple codes could be collapsed into a single code or identify new codes that better captured the features identified in the data.

Searching for Themes

After initial coding of the data, I started to search for themes within the data. Searching for themes requires researchers to group codes and compare data across the grouped codes (Braun & Clarke, 2006, p. 87). Taguette assisted in the search for themes. When Taguette collates data, all data points assigned to a particular code are presented to the researcher in the form of a list. Under each data point appears any additional codes assigned to that data point. The co-occurrence of codes within these lists served as the starting point for exploring relationships across codes that could then be used to construct themes. Candidate themes were generated as headings with bullet points that captured the different codes that made up each theme.

Reviewing Themes

The reviewing of themes is a verification step where the data and codes within a potential theme are compared to their parent theme and then across the entire dataset (Braun & Clarke, 2006, p. 87). Reviewing themes is used to validate or eliminate prospective themes that fail to reflect the whole dataset. The outcome of this step is a thematic map of validated themes and subthemes with internal consistency in the way data is coded. For this research, the reviewing of themes resulted in the elimination of some potential themes and the collapsing of multiple themes into a single high-level theme that better encompassed the data and dataset.

Defining and Naming Themes

The defining and naming phase of analysis entails refining the specificity of the labels used for validated themes and then generating expanded descriptions of those themes that start to articulate the overall narrative that the analysis tells (Braun & Clarke, 2006, p. 87). Defining and naming themes initiated the start of the writing process. Themes were given expanded labels that would serve as headings for later presentation of my findings. Definitions for each theme and subtheme were developed that translated codes and short forms used in the Reflexive Thematic

Analysis process to describe the findings of the analysis for readers. I used the concept mapping software yEd to create thematic maps, which were in turn used to revise the labels and definitions of themes and illustrate the relationship between themes. Drafts of concept maps were useful for communicating the preliminary findings of my analysis to my supervisors and identifying instances where prospective themes and subthemes required further review and revision.

Preparation of the report

When producing the final report, the researcher must pick illustrative examples from the dataset that reflect the findings of the analysis, provide answers to the study's research questions, and impact our understanding of the literature (Braun & Clarke, 2006, p.87). Selection of illustrative examples from the data serves as a final verification step, testing the degree of support for the narrative developed through the Reflexive Thematic Analysis process. Throughout my analysis, I produced and revised multiple drafts of the subsequent results and discussion chapters, which helped me identify areas of my literature review and methodology that required further development to reflect changes in analytic focus and theme development. Writing truly was an important part of the analysis process. Writing was useful for verifying internal coherence of my themes and assessing how consistently I used my codes across the dataset. The writing process was also important for developing a better understanding of the contributions made by this research through a process of reflecting on what the findings mean for the field of PIM.

Quality Control

All forms of research require a degree of quality control and rigor for knowledge claims made by researchers to be accepted. Braun and Clarke (2006) offer researchers using Reflexive Thematic Analysis a 15-point checklist of criteria that they can use to assess the quality of their analysis and faithfulness to the Reflexive Thematic Analysis process. This section discusses quality control used for this research.

Transcription

The first quality control mechanism in RTA is to ensure that audio recorded data is transcribed to an appropriate level of detail and checked against the original recordings for accuracy (Braun & Clarke, 2006, p. 96). Upon completion of the guided tours, I transcribed all audio recordings verbatim, including instances of repairs where participants stopped a thought mid-sentence to correct or redirect its conclusion. Repairs were interpreted as instances where participants developed greater clarity and precision in their response to the demands of the guided tour and their responses to probes asked by the researcher. When faced with passages in the guided tours with high levels of detail, I often slowed down the playback speed and paused playback to ensure the accuracy of the transcripts being produced. I also reviewed handwritten notes and photos taken during the guided tour to verify details when audio recordings contradicted the researcher's recollections of what was said during the guided tours. Upon completion of transcription, I reviewed and revised the transcripts while listening to the audio recording.

Coding

Braun and Clarke offer several checkpoints for assessing the quality of coding in Reflexive Thematic Analysis. Researchers should give each data point equal attention in a coding process that is thorough, inclusive, and comprehensive (Braun & Clarke, 2006, p. 96). For each research question, the entire dataset was reviewed and coded (e.g., deductively for research question 1 and inductively for research questions 2 and 3 respectively) to ensure that the coding process was thorough, inclusive of all the data collected, and comprehensive. I treated each research question as a separate analysis by reviewing and coding the entire dataset for each. For this reason, the results of the Reflexive Thematic Analysis are presented as three separate but interrelated chapters. Upon completion of initial coding, researchers must then collate all the extracts for each code to verify consistency of use across the dataset (Braun & Clarke, 2006, p. 96). Taguette was used to collate the data extracts for each code, which appear as lists. The contents of each list were reviewed to ensure the appropriateness of the code assigned to each data point or extract and revised when instances of inconsistency were found. Revision occurred either by reassigning the data extract with a more appropriate code generated during the initial coding or the creation of a new code that better reflected the observation being made in the data point. Initial codes took the form of keywords or short phrases that described the features in the data that captured my analytical attention. As researchers develop initial themes, prospective themes should be checked against each other and back to the original dataset to ensure internal coherence, consistency, and distinctiveness (Braun & Clarke, 2006, p. 96). The checking of themes was achieved by maintaining lists of codes with headings that represented potential themes. The use of lists to organize codes allowed for the identification of subthemes within themes and identification of duplication of themes. Potential themes were collapsed into a single theme when viewed by the researcher as describing the same meaning. My revision of codes and potential themes was directed towards distilling my thematic labels down to only those that reflected patterns of meaning seen across participants and across the entirety of the dataset.

Analysis

Researchers should assess whether all data has been analyzed rather than summarized (Braun & Clarke, 2006, p. 98). True analysis requires the researcher to interpret and make sense of the data rather than simply describe or paraphrase it (Braun & Clarke, 2006, p. 98). The quality of my analysis was improved through the writing process, which exposed shortcomings in the interpretation of data extracts during initial attempts to communicate my findings. In a good quality RTA, the knowledge claims made must match the content of the extracts used to illustrate those claims and the presentation of knowledge claims should form a convincing and well-organized narrative about the data and the research area (Braun & Clarke, 2006, p. 96). Feedback from my supervisory committee on drafts and diagrams summarizing the main findings of my analysis was helpful in identifying areas in which additional analytic attention was required to support the knowledge claims being made in this thesis. The presentation of findings should strike a good balance between analytic narrative that makes knowledge claims and the illustrative examples used to support those knowledge claims (Braun & Clarke, 2006, p. 96). This balance was achieved by giving myself permission to prioritize my own voice and interpretations of the data as the narrator of this thesis while resisting the impulse to overly let data extracts speak for themselves as a means for giving participants voice in the overall narrative.

Written Report

The written report represents a researcher's final opportunity to control the quality of the analysis. When writing, researchers must make their assumptions and their approach to Reflexive Thematic Analysis explicit to their readers (Braun & Clarke, 2006, p. 96). In this chapter, I explicitly laid out the epistemic and methodological resources I used to inform the design of this study as well as described the methods used for both the collection and analysis of the data in detail as a technique for demonstrating the rigor of my approach. Written reports should implicitly demonstrate consistency between methods described and the analysis presented (Braun & Clarke, 2006, p. 96). For this reason, each analysis is presented in a separate chapter allowing readers to evaluate the consistency across the knowledge claims made, the data used to illustrate those findings within each chapter, and the methods used.

The language and concepts used in the final report should always be consistent with the researcher's epistemological position in a high-quality use of RTA (Braun & Clarke, 2006, p. 96). The feedback I received from committee members when revising this draft was useful for pointing out instances when my use of epistemic and methodological language and concepts were inconsistent or incompatible with RTA. A particular challenge I faced as a qualitative researcher using RTA was recognizing when concepts and techniques from realist epistemic approaches commonly used in qualitative research were incompatible, such as Fedel's (2012) human-information interaction and Lincoln and Guba's (1985) quality control concepts of credibility, transferability, dependability, confirmability, and data saturation. Braun and Clarke (2019b) reject Lincoln and Guba's quality control concepts because they contain implicit realist assumptions incompatible with interpretive approaches to knowledge-production. In particular, the assumption that meaning and themes exist a priori and objectively within the dataset, waiting to be "discovered" by researchers and capable of being vetted for quality using standardized methods akin to quantitative quality control mechanisms (e.g., via the use of codebooks, interrater reliability quotients, data saturation assessments, etc.) are signs of holding realist epistemic positions not shared by RTA as a methodology (Braun & Clarke, 2006; 2019a; 2019b).

Realist quality control mechanisms are incompatible with RTA because qualitative researchers using interpretive approaches see themselves as actively constructing meaning and themes during analysis (Braun & Clarke, 2006, p.96). The researcher's subjectivity, creativity, and reflexivity are important tools for making knowledge-claims and controlling quality in RTA. To demonstrate rigor, researchers must be transparent about their approach and epistemic assumptions, be consistent in their use of theoretical concepts and language, select appropriate methods, and construct coherent narratives using relevant research data as illustrative examples to support the knowledge-claims they make. Readers evaluate the quality of analyses using RTA by looking for high levels of transparency, consistency, coherence, and relevance between the methods, data, and findings presented.

Lastly, ensuring adequate time is given to complete all phases of the Reflexive Thematic Analysis process without rushing, skipping phases, or omitting verification steps is important for controlling quality (Braun & Clarke, 2006, p. 96). As a researcher, demonstrating rigor in the data collection and analysis processes was important to me to have confidence in my findings and the knowledge claims I make in this thesis. For this reason, the dataset was coded multiple times and multiple drafts of each chapter were produced to resolve inconsistencies and incompatibilities from earlier phases of the analysis. Next, I turn to a discussion of limitations of this research.

Limitations

The sample reported in this research is nonrandom with a high degree of self-selection because participants were recruited through classified ads and posters. All participants elected to participate rather than being selected using randomization or matching techniques to ensure representativeness between the sample and the general population of young adults in Canada. Several young adults chose to participate in this research because the study's focus on financial records management resonated with them on a personal level. In such cases, participants felt that financial recordkeeping is an important issue and saw participation in this research as an opportunity to share with others the positive impact that financial recordkeeping has in their day-to-day lives. There were also participants who expressed some degree of financial motivation as part of their desire to participate. In such cases, participants saw the study an easy way to earn $10 while also contributing to science on our understanding of financial recordkeeping despite the demands of the guided tour.

A limitation of this study is the way in which data about the age of participants was collected. Poorly defined age ranges were used in place of asking participants to disclose their birth year or precise age at the time of research. Therefore, data collected related to age must be treated with caution. Despite this flaw, the age range of 18 to 25 appears well represented by the young adults who participated in this study. During the recruitment process, men expressed higher levels of caution and apprehension to participate in the study during email correspondences. This was especially the case when discussing the guided tour. Unexpectedly, men were more apprehensive about the idea of allowing a researcher into their home for data collection purposes. As a stranger, I sought to provide all prospective participants with verifiable information about myself, my supervisory team, my university department, and my data collection processes to prove to participants that I was a legitimate researcher conducting a credible investigation with good intentions and concerned about the safety and privacy for participants. Despite these efforts, I was not able to achieve a relative level of gender parity in the sample.

Use of convenience sampling is a limitation of this study, impacting the degree to which the findings of this research can be generalized. Convenience sampling was used due to limited financial and technical resources at the doctoral level, which prevented use of recruitment techniques that could generate a representative sample of the young adult population of Montréal or Toronto. Furthermore, the guided tour portion of this study required participants to reside near the researcher, preventing recruitment at the provincial or national level. To address this limitation, I used inclusion and exclusion criteria as quality control mechanisms to create a degree of comparability between participants and avoid total haphazard sampling. The inclusion and exclusion criteria were designed to restrict the unit of analysis to the individual, rather than household, as well as to prevent recruitment of atypical cases such as young adults with histories of bankruptcy. Use of inclusion and exclusion criteria was only partially successful in achieving these aims. Although cases of family finance were successfully excluded from the sample (e.g., couples without separate finances and participants with dependents such as children), the frequency of cohabitation with roommates meant household finance could not be completely controlled and excluded from the sample. As will be discussed in the following chapter, the resulting sample was also female dominated and therefore not representative of the general population. Over-representation of women in the sample can be viewed as creating a unique opportunity to hear and privilege the voices and experiences of women on the topic of personal finance rarely seen in Information Studies and HCI. The overwhelming representation of women in the sample was completely unexpected during the proposal and data collection phases used to design this study. Therefore, this research is less effective at giving voice to young adult men on the topic of personal financial recordkeeping in comparison to women because of convenience sampling.

Guided tours were single time-limited interaction with participants that provided "snapshots" of collections of personal financial records, which may differ dramatically from the perspectives gained through use of a long-term observational method designed to capture changes over time. Many young adults described changes in how they managed their personal financial records. Changes were implemented to respond to new information needs and changing life circumstances as they arose. As a result, guided tours did not fully capture the complete lifecycle of personal financial records and their associated management practices despite some young adults acknowledging and describing differences between their past and current practices.

This study relies on participants' perceptions and descriptions of their records management behaviors rather than naturalistic observations. Data was collected during a single interaction with participants without opportunity for follow ups or critical feedback from participants on the researcher's interpretations and findings. I was able to test some of my earlier interpretations and assumptions from previous interviews in later interviews through use of specific probes. The guided tour interviews also provided several opportunities to see some of the limitations and biases in participants' perceptions and descriptions of other young adults and themselves. Comparisons could be made between what participants claimed and with what could be observed directly by the researcher within interviews, across interviews, across home environments, and during simulated management tasks such as when participants were asked to try retrieving an item from their own collection. In some cases, the differences between participants' perceptions and reality were exposed, such as in one case when a participant was unable to find a specific webpage within their online banking platform that they claimed to consult daily and rely upon heavily to manage their day-to-day personal finances. Such instances reminded the researcher of the necessity of critical thinking not only about my own perceptions but also about participants' perceptions as well during the analysis process.

There was a lengthy delay between data collection and completion of the final report. This delay was a result of several factors including changes in the composition of my supervisory committee. Some of these changes stemmed from factors outside of my control such as when committee members retired or went on leave. My timeline was also negatively impacted by the disruptions associated with the COVID-19 pandemic. Other factors were within my control, such as my decision to change supervisors and members of my committee late in my degree to better reflect the mentorship I needed to grow as a researcher and complete the research. Despite the delay between data collection and completion of the final report, I remain confident that many of the observations and findings of this research remain relevant today despite changes in technological and social conditions, especially because of COVID-19, which dramatically increased use of digital technologies in many domains of life including work, education, and recreation. Despite these limitations, my data and analysis still offers useful insights on the topic of personal information, financial records management, and opportunities support the transition from adolescence to adulthood through personal finance.

Conclusion

In this chapter, I present my epistemological, theoretical, and methodological frameworks. This research uses social constructionism as its theoretical framework and adopts an interpretive epistemic approach to making knowledge-claims. I describe the Wisdom Hierarchy as the theoretical framework used to define the concepts of data, information, knowledge, and wisdom, which was also used as a theoretical coding scheme for one of the three qualitative analyses presented in this dissertation. I discuss my used of inductive coding in the subsequent two qualitative analyses and the data analysis tools I used to process and interpret my research data. I identify guided tours as the methodology used to collect my research data and Reflexive Thematic Analysis as the methodological framework that guides my analysis. Then I discuss the specific methods used to design my study, obtain ethical approval and manage potential risks and harms to participants, recruit participants, and collect and analyze different forms of research data. Lastly, I discuss limitations of this research. In the next chapter, I present an analysis of the demographic data collected during the guided tours to describe my sample in greater detail and then formally introduce the young adults who participated in this research.

Chapter 4: Participants and Demographics

This chapter describes the young adults who participated in this research. First, I present the results of the demographic questionnaire, which was administered at the end of each guided tour interview. Then, I introduce and provide some background biographical information about the participants.

Age

Each of the 23 participants fell between the ages of 18 to 25. As discussed in the previous chapter, an issue with phrasing in the demographic questionnaire limits my level of precision when reporting participant ages. Regardless, the age of participants appears well-distributed across the age period of 18 to 25, ensuring fair representation of young adults across the entire transition from adolescence to adulthood. The age distribution of the participants who participated in this investigation is presented in Table 3.

Table 3

Participant Ages

Age Range	Frequency	%
18	2	8.7
19-20	8	34.8
21-22	6	26.1
23-24	4	17.4
25	3	13

Gender

Of the total 23 participants recruited for this investigation, 18 identified as female and 5 identified as male. As a result, the data reported in this investigation predominately represents the financial records management experiences and practices of women. As stated in the previous section on limitations, over-representation of women in the sample was not intentional nor anticipated during the planning phase. Recruitment of any participant who fit within the study's inclusion criteria was prioritized over gender parity in the sample to recruit as many young adults as possible during the data collection phase. The gender distribution of the sample is presented in Table 4.

Table 4
Gender

Gender	Frequency	%
Female	18	78
Male	5	22

Education

Participants were asked to disclose their current level of education as part of the demographic questionnaire. Because most participants were recruited through university classified ads available through the McGill University's Employment Counseling Service office and through fliers posted on McGill University's campus, the sample overwhelmingly represents English-speaking undergraduate university students from the city of Montréal. Education level results are reported in Table 5.

Table 5
Education Level

Education Level	Frequency	%
Some undergraduate	12	52.2
Undergraduate	9	39.1
Some graduate	2	8.7

Roughly half (12) of participants were currently enrolled as undergraduate students. The remainder had recently completed their undergraduate degrees and were either working or looking for work in their respective fields (9),or chose to continue their education and enrolled in a graduate education program (2). Two of the participants resided in Toronto and the remaining participants were in Montréal.

Annual Income

Participants were asked to disclose their approximate annual income at the time of research. The demographic survey revealed that most participants earned very modest annual incomes, typical of full-time students and recent graduates in the early stages of their careers. Two participants reported not knowing their annual income. Reported income levels support the assumption that young adulthood is a period in people's lives during requiring careful financial management due to limited financial resources. At the same time, low-income levels might mean that collections of personal financial documentation are smaller in volume in comparison to older adults with higher levels of income. Results for income level are presented in Table 6.

Table 6
Annual Income

Annual Income	Frequency	%
Less than $10,000	14	60.9
$10,000-13,999	1	4.4
$14,000-17,999	0	0
$18,000-21,999	2	8.7
$22,000-25,999	0	0
$26,000-29,999	1	4.4
$30,000+	3	13
Don't Know	2	8.7

Household Composition

Participants were asked to provide further information about their household composition as part of the demographic survey. Since the study aimed to explore individual rather than family financial records management, potential participants who were married, common-law, or had children were excluded from participation. In cases where young adults lived with others, participants were asked to affirm that they maintained separate financial records from other members of the household. Results related to household composition are presented in Table 7. Most participants lived with other young adults as roommates. In no cases were multiple individuals from the same household interviewed. In the case of those who lived with roommates, those who self-selected to participate in this investigation often referred to themselves as the household's "designated records manager". The attraction of designated records managers to the call for participants points to a limitation of non-representative sampling methods and may suggest that the findings of this research may overrepresent the level of financial records management experience and proficiency of people within this age group.

Table 7
Household Composition

Household Composition	Frequency	%
Alone	4	17.4
Family home	3	13
Roommate(s)	16	69.6

Age of First Employment

As part of verifying eligibility to participate, young adults were asked to disclose their age at the time of first employment. The purpose of this question was to ensure that all participants had previous experience earning an income, and therefore, experience managing some form of personal financial records of interest to this investigation. All participants reported their first employment taking place before the age of 21 with most participants starting to earn an income prior to their legal recognition as adults, which is 18 years of age in Canada. Age of first employment results is presented in Table 8.

Table 8

Age of First Employment

Age of First Employment	Frequency	%
Under 15	2	8.7
15-16	10	43.5
17-18	8	34.8
19-20	3	13

Age of First Expense

Young adults were also asked to disclose at what age they first started managing a personal financial expense independently. Examples of first independent financial expenses included things like managing a cell phone or credit card account in their name. Young adults were asked the age at which they first became independently financially responsible for something to indirectly assess their duration of experience with managing financial documentation. Results for age of first expense are reported in Table 9.

Table 9

Age of First Expense

Age of First Expense	Frequency	%
Under 15	6	26.1
15-16	8	34.8
17-18	6	26.1
19-20	0	0
21-22	1	4.4
23-24	1	4.4
25	0	0
No response	1	4.4

All participants gave verbal confirmation prior to the study that they became independently responsible for their first financial expense prior to age 25. One participant left this question blank on the demographic questionnaire, and it was unclear whether they did not know, declined to answer, or skipped the question by accident. I was able to conclude that all participants recruited for this study had some degree of experience earning income and using their own personal financial resources thus providing them with relevant experience with personal financial information management. Participants were not asked any demographic questions pertaining to racial or sexual identities because results were not intended to be analyzed based on racial or sexual identity experiences. Regardless, the sample includes voices of both Canadian and international students from a variety of cultural, racial, and sexual social groups, reflecting the diversity of McGill University and metropolitan Montréal and Toronto in general. The sample also included both native English and French speakers of Canadians citizenship, despite all interviews taking place in English and primarily recruited within an English-speaking university setting. Even though demographic data on social diversity within the sample was not formally collected, I feel it is important to affirm the sample includes the voices of people of color, members of the LGTBQ2A community, people of non-Canadian citizenship, as well as French and English-speaking Canadians. I included these details in the introductory descriptions of participants that appear in the following section. The cultural, sexual, and national diversity among participants was perceivable through the face-to-face interactions I had with each participant as well as from the contextual discussions with participants that took place during the guided tours. Each interview started with a rapport building question that asked young adults to describe themselves, which gave participants an opportunity to identify themselves in ways that they were comfortable with, including their citizenship status, country of origin, and cultural background. On occasion, I used probing questions to follow up on statements made by participants related to their social identities, which gave me additional opportunities to learn more about participants social backgrounds.

Participant Personas

The purpose of this section is to introduce the 23 participants recruited for this study. At the beginning of each guided tour, participants were asked a rapport-building question. The purpose of the rapport-building question was to give participants an opportunity to introduce themselves on their own terms. Participants were asked to provide a little bit of contextual background and biographical information about themselves so that I could develop a basic understanding of who each participant was and the context in which the guided tour interview was taking place. Participants were given a large degree of freedom in how they described themselves and how much contextual information they shared. In many cases, young adults provided a general description of where they were in terms of their educational status and career goals. Participants were probed to describe their living arrangement and household composition during the rapport-building stage. Participants were also probed to give a general overview of their recordkeeping "style" and preferences as part of this topic in the guided tours. Results of the rapport building question are provided in Table 10.

Table 10
Participant Personas

Part. no.	Pseudonym	Gender	Description

1	Claire	Female	A first-year undergraduate student of European descent living alone in a small bachelor apartment close to the university in Montréal. In addition to studying full time, Claire works as a model to earn spending money that she likes to use to buy gifts for family members. Claire liked to track her day-to-day expenses and spending using a paper notebook and made very little use of digital technologies for personal finances.
2	Jane	Female	A fourth-year physiology undergraduate student of European descent living with two roommates in Montréal. Jane is close to graduation, taking her last four classes, and plans to move to Europe in the fall for graduate school to become a physiotherapist. Jane describes herself as an avid athlete. In particular, she runs her university's Quidditch recreational sports team, which she credits as one of the main sources of her basic financial records management skills. Jane was responsible for managing the shared expenses in her apartment. Jane liked to use her laptop to manage her personal financial records.
3	Dan	Male	A fourth-year engineering student of European descent graduating at the end of the semester. Dan was unemployed at the time of research but recently completed an engineering internship, which resulted in a dramatic change in financial resources available to him. Dan lives in a trendy Montréal neighborhood with three roommates and was responsible for managing the financial records for shared expenses in his household. Dan liked to use a laptop to track his day-to-day expenses and maintained a large collection of paper financial records in a plastic bin in the back of his closet.
4	Kate	Female	A first-year nursing student of Filipino heritage living at home with her parents in a west suburb of Montréal. Kate works part time at a fast-food restaurant to cover some of her university expenses. Kate described herself as an active member of her church and despite storing her personal financial records in her wardrobe in her bedroom, she described her preference to organize and process her financial records at the kitchen table to keep her bedroom as a place where she can pray and be closer to God. Kate tracked her expenses using a piece of paper she carried in her wallet, which consolidated with her other financial records monthly.

5	Michelle	Female	A fourth-year student of Chinese heritage who lived in a dormitory style bachelor apartment with a roommate to save money. In preparation for her graduation at the end of the semester and a move back to her hometown, Michelle was in the active processes of downsizing and packing her physical possessions. She described selling her desk and filing cabinet shortly before the guided tour interview, which she replaced with binders filled with dividers and plastic document sleeves that she stored in banker boxes.
6	Anastasia	Female	A recent graduate who worked in the real estate sector during the final years of her undergraduate degree. Anastasia was of Russian heritage and moved to Montréal and lived with her parents shortly before starting university. Anastasia had a very organized workspace in her bedroom with a shelf containing a set of binders she used for storing her personal financial records. She also used her laptop to manage her digital financial records.
7	Kim	Female	A queer-identifying undergraduate science student of European heritage in her final year of her degree with two roommates. Kim described herself as coming from a low socio-economic-status family background and took pride in independently financing her university education through work study programs, working abroad, and government loan programs for students. She was unemployed at the time of research but looked forward to starting a new job in her field soon after graduation. Kim described budgeting and tracking her spending as especially important because she was unemployed to focus on completing her degree. Kim managed both paper and digital financial records with a clearly articulated plan for their preservation. Kim chose to store all her digital financial records in the cloud to prevent loss in the event of a hardware failure and stored her paper records in a small box that she could quickly grab in the event of a fire.

8	Jake	Male	An athletic undergraduate student who lived with two roommates in student housing close to the university in Montréal. Jake was an aspiring actor who maintained his financial records with the goal of documenting his set time hours to apply for membership in an acting union. Although Jake has a desk and filing cabinet in his bedroom, he actively tries to reduce the amount of paper financial records in his possession using digital technologies for managing his banking, health insurance, and employment documentation. Jake was a member of his department's student council, where he gained experience using Mint.com and was responsible for managing the financial records for shared expenses in his apartment, which he tracked using Spreadsheets.
9	Sara	Female	A second-year undergraduate student of Jamaican heritage originally from Toronto, who lived alone in Montréal, and worked in a university residence building. Sara described feeling overwhelmed by her personal finances and made extensive use of online and telephone banking to manage her personal finances. Sarah described how her job at the university was an important context for developing basic financial literacy and understanding the value of financial recordkeeping through managing a small budget for social programming for residents.
10	Lana	Female	A 24-year-old PhD student of European heritage, originally from Saskatchewan, with a passion for history. Lana rented a bedroom of a condo in old Montréal owned by her mid-aged adult roommate. As a graduate student, Lana lived on a tight budget and described oscillating between periods of paying close attention and periods of avoiding her da-to-day finances. Lana had a hybrid collection of both paper and digital records that she stored on her laptop and in a reusable shopping bag that she hung on the doorknob of her closet.
11	Peggy	Female	A Chinese exchange student living in Montréal and studying engineering full time. Peggy shared an apartment with a roommate and stored her financial records in a plastic storage unit in the corner of her bedroom. Peggy valued the relationship she had with her investment manager who helped her navigate the financial system in her home country and in Canada.

12	Maria	Female	A first-year undergraduate student of Italian heritage living with her parents in the Greater Toronto Area studying graphic design and advertising. Maria did not have a desk or dedicated workspace in her bedroom. Rather, she stored paper financial records in a dresser drawer and preferred to use her laptop and cellphone to manage her personal finances digitally.
13	Gina	Female	A second-year cognitive science undergraduate student of European heritage living with a roommate in Montréal. Gina described working full time in the summers, which is when she makes most of her income and working for the university's transcription service part time during the school year. She is actively saving so that she can study abroad in Europe next year. Gina prefers to manage most of her financial records online but still maintains a small collection of paper receipts.
14	Cathy	Female	A recent graduate who moved To Montréal from Winnipeg to complete a master's program and found a job in the gaming industry shortly after graduation. Cathay lives alone and has a very hands-off approach to financial recordkeeping. She prefers to let incoming documents pile up on a table near her front door and stores older records in a lightweight divided storage unit she purchased from a discount store that she stores in her dining area. Cathay was also a user of e-Post, a digital mailbox service offered by the government of Canada that digitizes and aggregates a portion of her incoming mail, which she uses to reduce the amount of paper financial records she stores at home because Cathy tends to change apartments every year in order to explore life in different areas of the city.
15	Rachel	Female	A recent graduate and real estate agent of Italian heritage working and living in Toronto. Rachel had a dedicated office space in the apartment that she uses to store both her work and personal financial records. Rachel was unusual in the sense that she had two laptop computers, one of which she uses exclusively for her business while the other is used for personal computing. Rachel had an extensive system of binders, dividers, and document sleeves that she used to store her work and personal financial records in paper format, with a sophisticated system for gluing down and matching receipts to lines in her monthly credit card statements.

16	Mike	Male	An undergraduate international student of European descent who moved from Baltimore to Montréal for university but continues to work during the summer in his parents' retail store in his home state of Maryland. Mike lives with two roommates in Montréal and is responsible for managing the financial records for shared expenses. Mike stores his digital financial records on his computer and keeps paper financial records in his desk drawer in his bedroom.
17	Chris	Male	A recent graduate in business administration, born and living in Montréal’s west end, who described himself as coming from a low socio-economic family background after moving out of his mother’s home at the age of 17. Chris was unemployed at the time of research as he searched for a new job in his field but worked for several years as a teller in a Canadian bank. Chris described himself as a “financial influencer” among his circle of friends, which he credits to his banking background, encouraging his peers and girlfriend to start budgeting and saving early. Chris stores his minimal collection of financial records on a shelf in his living room in a plastic divided portfolio. Chris also disclosed that he files his annual income taxes using the Government of Canada’s paper income reporting form because enjoys the process.
18	Jenny	Female	A third year economic and computer science student of Chinese heritage who moved from Vancouver to Montréal for university. Carefully managing day-to-day finances is important to Jenny because she is financing her education using student loans. Jenny uses a spreadsheet and online banking to do most of her personal financial management but experimented with Mint.com and has experience using Quickbooks as a treasurer of a student club at her university.
19	Arvy	Male	A recent graduate who moved from India to Montréal to attend university and has been working as a sales analyst since his graduation. Arvy’s financial recordkeeping was motivated by his desire to become a permanent resident of Canada, for which he needed evidence of income and employment to qualify. At the time of research, Arvy was technically homeless but saving money by sleeping on the sofa in the living room of his friend’s one bedroom apartment. Arvy was an avid user of online banking to reduce the amount of paper records he manages but still had a small collection of paper documents that he stored in file folders on a bookshelf close to the apartment’s kitchen.

20	Alex	Female	A second-year American international undergraduate economics student of European heritage living alone in Montréal. At the time of research, Alex was living on her own for the first time in her life, which introduced a range of new financial responsibilities such as paying her own rent, food, and tuition expenses. Consequently, Alex felt like she was still getting a handle on financial recordkeeping. Alex preferred to manage her personal finances on paper and disclosed recently deleting the online banking app from her cell phone because she never used it. Alex stored her financial records in her bedroom, with new records stored on her desk and old records stored in an underbed storage bin under her bed.
21	Cindy	Female	A third-year undergraduate student of European heritage, originally from Toronto, living with two roommates in an apartment close to the university. Cindy described being the captain of a university sports team, the president of a university student association, and working part time as a brand ambassador for a popular energy drink company. Cindy was responsible for managing the financial records associated with shared expenses in her household. Cindy had a desk in her bedroom that she used to store all her personal and sports team related paper financial records. Cindy was also a dedicated user of her paper planner, which she also used for managing her personal finances. In her planner, she had a sophisticated color-coding system for organizing entries. Cindy also made use of her laptop computer for managing personal finances.
22	Claudia	Female	A fourth-year student of Malawi heritage who moved from Rome to Montréal for university and was working towards obtaining permanent residency in Canada. Living in a bachelor apartment, Claudia had a small desk located beside the kitchen where she managed her personal finances. Claudia described doing most of her personal finances online via online banking and e-billing but maintained a small plastic divided portfolio for limited paper records. Claudia had previous experience with Minto.com but stopped using it because she found it cumbersome to manually enter in her cash transactions. Claudia described being a big fan of Pinterest, which inspires her to maintain a tidy and organized home, including her financial records.

23	Lucy	Female	An international exchange student of European heritage who relocated from New Zealand to Montréal to complete a second bachelor's degree in the French Language before starting a master's degree in Kinesiology in the fall. Lucky lived in a rough apartment in the center of a trendy neighborhood with three other students. Lucy described her financial recordkeeping strategy as haphazard because of the big geographic move and limited time she intended to stay in Canada as an exchange student. Lucy described keeping track of her personal finances by writing notes in the margin of her agenda in addition to tracking her spending using a financial app developed by the Government of Australia. Lucy kept her limited paper financial records in a backpack, attached to her bed frame using a bike lock since none of the bedrooms in her temporary accommodations had locking doors.

All names that appear in this thesis are pseudonyms intended to anonymize and respect the privacy of participants. Throughout this thesis, I intentionally obscured some of the biographical details shared by participants, by omitting names or replacing specifics with generics, to prevent readers from being able to identify participants via their affiliations with entities such sports teams, student organizations, and employers. Care was taken not to twist context or misrepresent participants' identities in the anonymizing process.

Conclusion

In conclusion, 23 participants were recruited and completed the guided tour interview. Most of the participants were recruited through classified ads through McGill University's Career Counseling Service. Data related to age should be interpreted with some caution because of the aforementioned flaw in the demographic questionnaire but the age range of 18 to 25 appears well-represented within the sample despite this issue. Most participants lived with at least one roommate. More than two thirds of all participants were students, with roughly half being undergraduates. Most participants became independently responsible for their first financial expense like a cellphone bill in their name, which was required to participate study, before the age of 18 in alignment with the eligibility criteria. Most participants reported earning a modest annual income of $30K or less. The sample is disproportionately represented by female identifying participants. Data on race, sexuality, culture, and citizenship were not collected in a systematic fashion but face-to-face guided tour interviews provided participants with various opportunities to disclose these kinds of identifications when relevant to their financial record keeping. Now, I present the findings of my deductive analysis that uses the Wisdom Hierarchy to explore the collections of personal financial records.

Chapter 5: A Hierarchy of Financial Knowing

This chapter presents the findings of a deductive analysis using the Wisdom Hierarchy to explore different forms of financial knowing among young adults. To analyze the guided tour dataset, I synthesized literature on the Wisdom Hierarchy to generate a theoretical coding scheme. The resulting coding scheme was used to identify forms of data, information, knowledge, and wisdom discussed by participants for further analysis. The coding scheme I used to code the guided tour data is presented in Table 11.

Table 11
Wisdom Hierarchy Coding Scheme

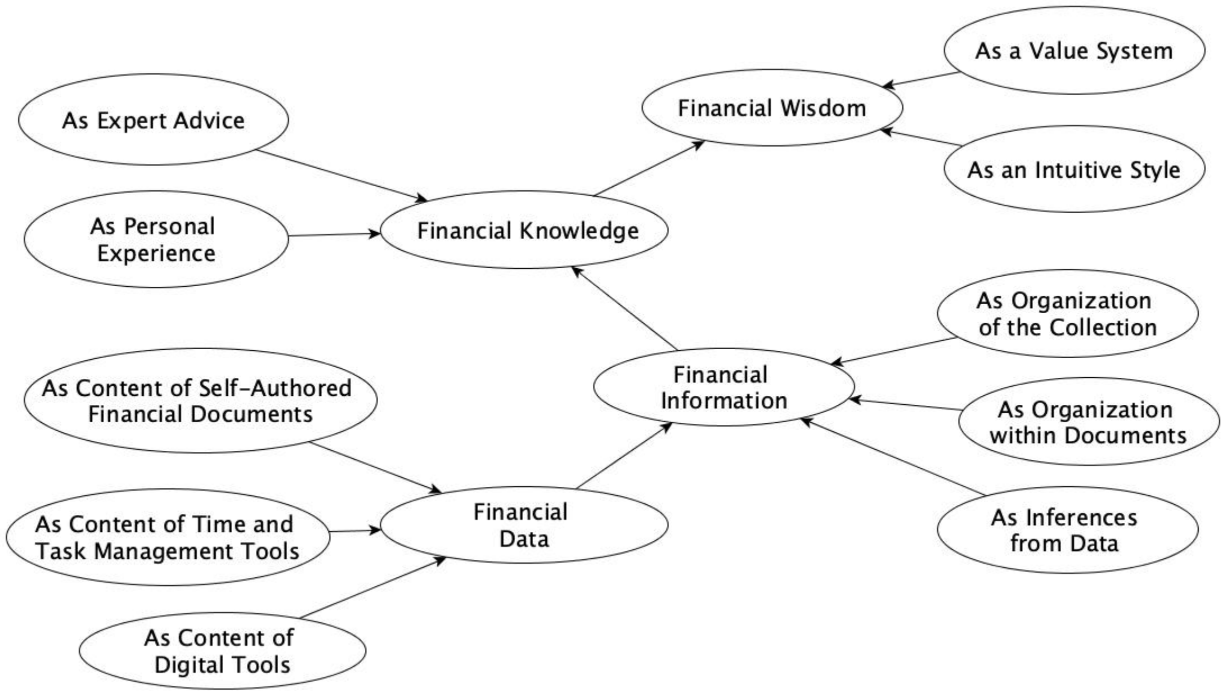
Code	Definition	Metaphor
Data	Elementary recorded descriptions of things, events, activities, and transactions. Captures discrete, objective facts, observations, or sensory experiences. Does not convey meaning in unorganized and unprocessed forms but its organization and processing generate new value through interpretation and contextualization. Embedded in information systems, such as documents and displays. Symbolic in nature.	Know-nothing
Information	Created through the aggregation, formatting, defining of relationships between data points. Has value-added through its organization, processing, interpretation, and contextual. Is meaningful and useful to humans, has relevance to a particular goal, purpose, or context. Answers who, what, where, and when questions. Interpretive in nature.	Know-what

Knowledge	Combines data and information with opinion, expertise, skills, and experience. Is organized and processed. Conveys understanding, accumulated learning, and synthesis of multiple sources of information. Is applied towards decision making, problem solving, completion of activities and tasks. Is a property of people, lives in the minds of people, reflects values, beliefs, training, rules, perceptions, and shapes actions. Can be tacit (intangible and embodied) or explicit (tangible and recorded). Actionable and procedural in nature.	Know-how
Wisdom	The accumulation of knowledge that generates human understanding and judgment. Connected with human intuition, vision and abstraction, anticipation, and making predictions. Anticipatory in nature.	Know-why

My deductive analysis was guided by the following research question, how can the Wisdom Hierarchy, as a general theoretical model of information, be used to rethink the concept of "personal information" in a way that harmonizes usage of the terms "data" and "information" within PIM with other research areas in Information Studies? Rowley's (2007) review of the Wisdom Hierarchy and Zeleny's (1987) metaphors served as the foundation for developing a theoretical coding scheme that could be used to identify and code features in the dataset. The entire dataset was coded using the above theoretical coding scheme. I present a Thematic Map of the themes and subthemes that emerged through deductive analysis (Figure 1).

The first section of this chapter explores examples of personal financial data. Three categories of personal financial data emerged through thematic analysis: (1) as the content of self-authored financial documents such as spending logs and spreadsheets, (2) the content of time and task management tools like planners and calendars, and (3) the content of digital tools including online banking websites and apps. Then I discuss examples of personal financial information that emerged through thematic analysis. Three categories of personal financial information as new value generated through interactions with financial documents are discussed: (1) as the organization of the collection, (2) as organization within self-authored personal financial documents, and (3) as financial inferences made from personal financial data. Then I discuss examples of personal financial knowledge: (1) as advice and mentorship that young adults sought from people they saw as possessing financial knowledge they did not, and (2) as insights gained from direct personal experience managing personal finances and associated records. Lastly, I discuss examples of personal financial wisdom: (1) as the value systems that young adults use to guide their financial behaviors, and (2) as intuitive styles of financial management that young adults use to predict their future financial situation and manage their day-to-day financial expenses. Next, I discuss examples of personal financial data.

Figure 1
Thematic Map for Hierarchy of Financial Knowing



Personal Financial Data

Data refers to elementary recorded descriptions of things, events, activities, and transactions, embedded in documents and information systems, and can be used to generate new value through organization, processing, interpretation, and contextualization (Rowley, 2007). Examples of personal financial data captured during the guided tours recorded elementary factual details of financial activities and events. Two general kinds of personal financial data were identified in the guided tour dataset. The first form was financial data young adults created and captured themselves, which I refer to as "self-captured" personal financial data. The second form was financial data was captured by financial service provider information systems made available to young adults through banking apps and websites, which I refer to as "system-captured" personal financial data. Next, I present examples of self-captured personal financial data.

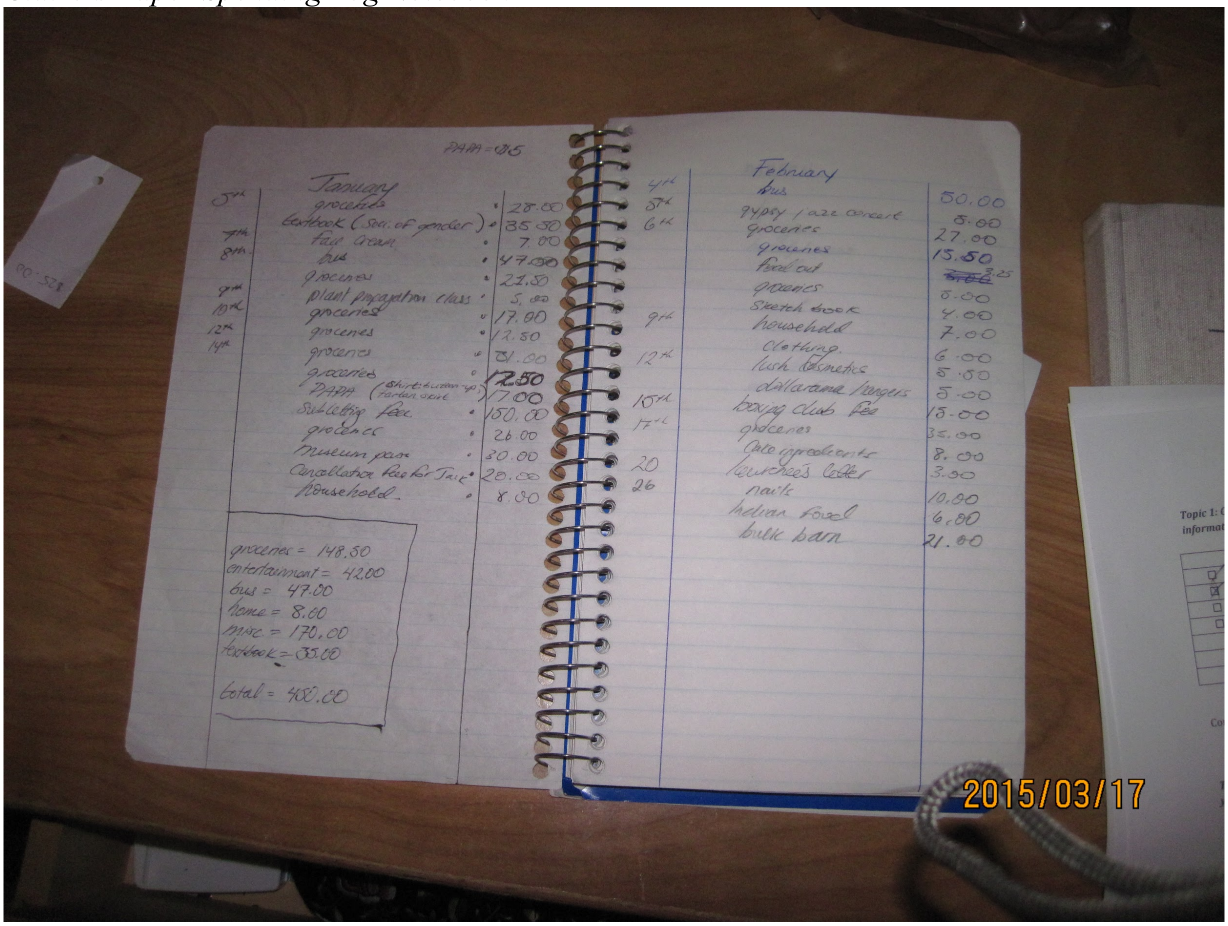
As Content of Self-Authored Financial Documents

In the guided tours, young adults described or showed examples of personal financial records that they used to capture or record details of financial transactions. These were coded as examples of personal financial data. Examples of personal financial data were both linguistic and numeric in form. Linguistic examples include descriptions and names that young adults recorded about financial transactions (e.g., names of retailers where they spent money or notes that reminded young adults about the purpose of a financial transaction in spending logs and spreadsheets). Numeric examples include dates and dollar values of financial transactions. When disparate pieces of personal financial data were combined, young adults were able to interpret and generate meaning from the data not evident from any individual piece alone. Personal financial data supports remembering of financial events consistent with framings of personal information as memory aids. Personal financial data supports memory by turning tacit experiences into explicit records that can be managed outside of the human mind. Researchers in PIM and PA have noted the reminding and memory functions of personal records (Malone, 1983; Bernstein et al., 2007, 2008; McKemmish, 1996; Kaplan, 2000; Beagrie 2005; Kaye et al., 2006). Recording personal financial data was important for remembering financial transactions in the future and for making sense of personal financial behaviors later in time. Participants showed several examples of personal financial data they captured and maintained as part of their collections of personal financial records, which conformed with the theoretical definition of data as elementary recorded descriptions of things, events, activities, and transactions. Examples of records young adults created to capture details about financial events, such as the date, time, parties involved in the financial transaction, and actions taken, were coded as examples of personal financial data. Some of these examples will be discussed here.

During the first guided tour, Claire, a first-year undergraduate student living alone for the first time in a small bachelor apartment close to her university, showed me the paper notebook that she uses to keep track of her day-to-day spending (Figure 2). Organized using three columns, Claire recorded the date in numeric form, a short description, and the dollar amount rounded up to the nearest dollar for each of her financial transactions. On the top of each page is a label indicating the month during which the transactions that appear below took place. As Claire spends money, she makes a new entry below her most recent transaction and at the end of the month, she processes the data by categorizing her transactions into six broad categories, calculating the totals spent within each. She visually separates this information from her data using a hand drawn box, which can be seen on the left-hand page for the month of January but was yet to be completed for the month of February at the time of research, which can be seen on the right-hand page.

Figure 2

Claire's Paper Spending Log Notebook



Note. Claire shows the financial data for the expenses she tracked for January and February.

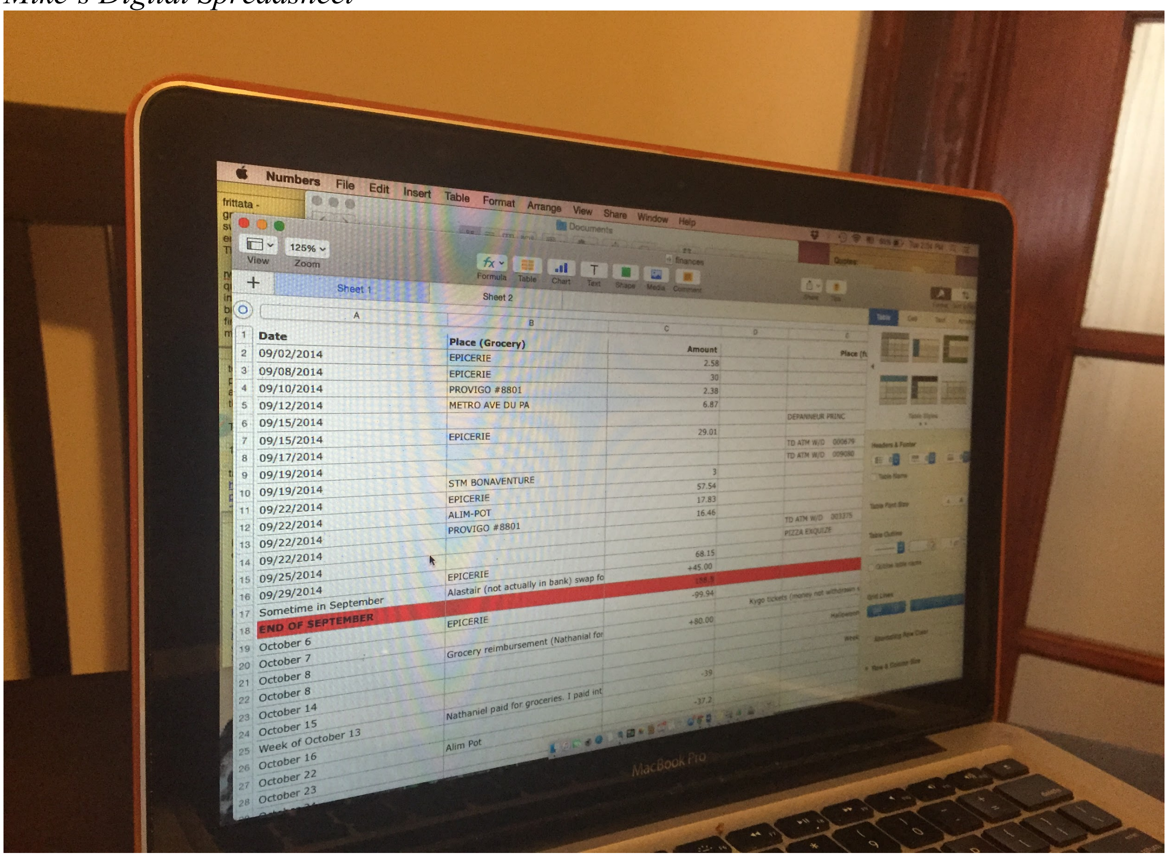
Claire's notebook simultaneously illustrates several aspects of the theoretical definition of data from the Wisdom Hierarchy. First, the data Claire records about her day-to-day spending are elementary recorded descriptions that capture factual details about some of her financial activities, specifically when purchases took place, what the transaction was for, and how much was spent. As an act of capturing, Claire uses her notebook to turn financial experiences, which are intangible and sensory, into an object form as a record that can then be interacted with and managed using personal information management processes. The creation of unique personal financial data is the first step in Claire's personal financial records management lifecycle, which differs from the two main models of PIM (i.e., Jones & Teevan 2007; Bergman and Whittaker, 2012) that conceptualize the conscious decision to keep records as the starting point of a PIM workflow. Feng and Agosto (2019) also found that keeping and organizing records become less important in PIM as digital technologies automate many of these functions on behalf of users, enabling them to focus more on creating and then interpreting personal data rather than its management.

Sense making is also central to Claire's interactions with her personal financial data. Claire's choice to simultaneously record the date, description, and dollar value of her day-to-day financial transactions is not accidental. Rather, she is able interpret the relationship between these three data points and reconstruct a memory of the event that is not evident from any individual pieces of data alone. Claire's use of her personal financial data to remember is reminiscent of use of information scraps to support remembering (Bernstein et al. 2007, 2008). It differs in her use of multiple fragments, rather than a single piece, to invoke an idea in the mind and recall the event or experience she intended to remember at the time of making the record. The ability to reconstruct a recollection of the financial event and infer meaning about the financial transaction by connecting the dots between data points is an example of information produced through sense-making (Dervin, 1998). Claire answers questions she has about her financial activities during the past month (e.g., how much she spent within the categories she tracks) by interpreting the personal financial data she aggregates within her notebook, thus generating new value that helps her understand her financial situation and spending behaviors.

During the guided tours, young adults provided examples of how digital tools were used to capture and record personal financial data for tracking spending in ways like those seen with paper information items. Digital spreadsheets were particularly valued tools for capturing and transforming personal financial experiences into personal financial data. For example, Mike, an undergraduate student who moved from Baltimore to Montréal for school, showed how he used a digital spreadsheet to record and track his day-to-day spending (Figure 3).

Figure 3

Mike's Digital Spreadsheet



Note. Mike collects date, place, amount, and notes about his financial transactions.

The self-authored documents young adults use to capture, store, and make sense of personal financial data conformed with Lemieux's (2010) assertion that structured numeric content about money is a distinguishing feature of personal financial records. During his guided tour, Mike showed me the spreadsheet he created for the previous financial year to track his financial transactions for the months of September and October. Like Claire, Mike uses columns to separate the main data points he collects, which includes the date, location, dollar amount spent, and dollar amounts received from roommates and peers for shared apartment expenses such as food. Mike uses a solid red row in his spreadsheet to visually separate entries for the month of September from those recorded for October. In the date column, Mike illustrates how both linguistic and numeric forms can be used to record personal financial data although sometimes he is inconsistent with which form he prefers to use. Mike uses a numeric format to record transaction dates during the month of September but then changes to a semi-linguistic format of the name of the month followed by the numeric day when recording transaction dates during the month of October. Mike's use of a digital spreadsheet to record factual details about financial events and funds spent and received also satisfies the theoretical definition of data. Structure in documents, such as rows and columns, along with strategic use of color coding and highlighting within documents helped participants make sense of personal financial data by organizing data into categories with clear structural relationships to one another. At the same time, Lemieux's definition of financial records did not encompass all examples of documents that young adults kept and maintained as part of their personal collections, such as contracts and correspondences between young adults and financial institutions and governmental agencies. Documents such as the latter examples were primarily linguistic in form but still considered financial in nature by participants and the researcher because of their articulation of financial personhood and the socio-legal aspects of personal finance. Therefore, in addition to containing structure numeric content, a distinguishing feature of personal financial records is their ability to reflect the financial character and relationships of their creators, in alignment with personal archival perspectives on personal papers (e.g., McKemmish, 1996; Kaplan, 2000; Hobbs 2001; Beagrie, 2005; Kaye et al. 2006; Cushing 2013). Next, I discuss examples of self-captured personal financial data in time and task management tools.

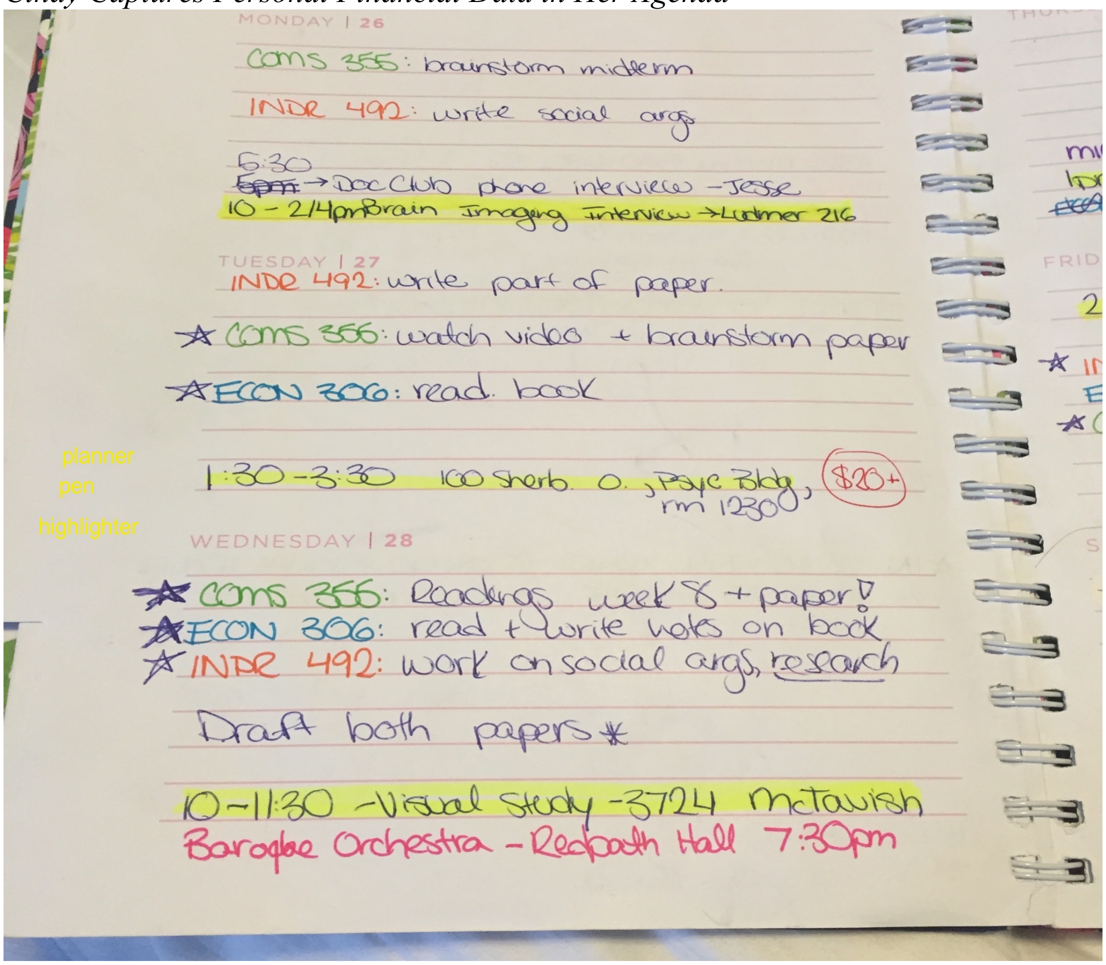
As Content of Time and Task Management Tools

Details about financial transactions recorded in calendars and planners was another frequently encountered example of personal financial data in the guided tours. Time management tools provided young adults with a convenient space to capture details about financial events, both past and upcoming. Scholars have long recognized the time and task management functions of personal records and information systems used to manage personal records (Malone, 1983; Gwizda, 2000; Whittaker & Hirschberg, 2001; Bellotti et al., 2002; Henderson, 2005). Therefore, it's not surprising that several participants made extensive use of time and task management tools as containers for personal financial data and to coordinate financial tasks and actions, although they rarely saw these kinds of documents as financial in nature until probed during the guided tours. This section discusses examples of personal financial data in planners and calendars in greater detail.

Cindy included her agenda as a feature of her guided tour because of the way she integrated personal finance into her day-to-day planning and time management (Figure 4). Cindy was an extremely busy person, balancing a full undergraduate course load in addition to being the captain of a university sports team, a student association president, and an energy drink brand ambassador. Cindy's agenda was an important tool for coordinating and managing her time and as a result, she had an atypically high-level of organization. Cindy included her agenda in her guided tour because of the way she used it to capture data about her money earning activities.

Figure 4

Cindy Captures Personal Financial Data in Her Agenda



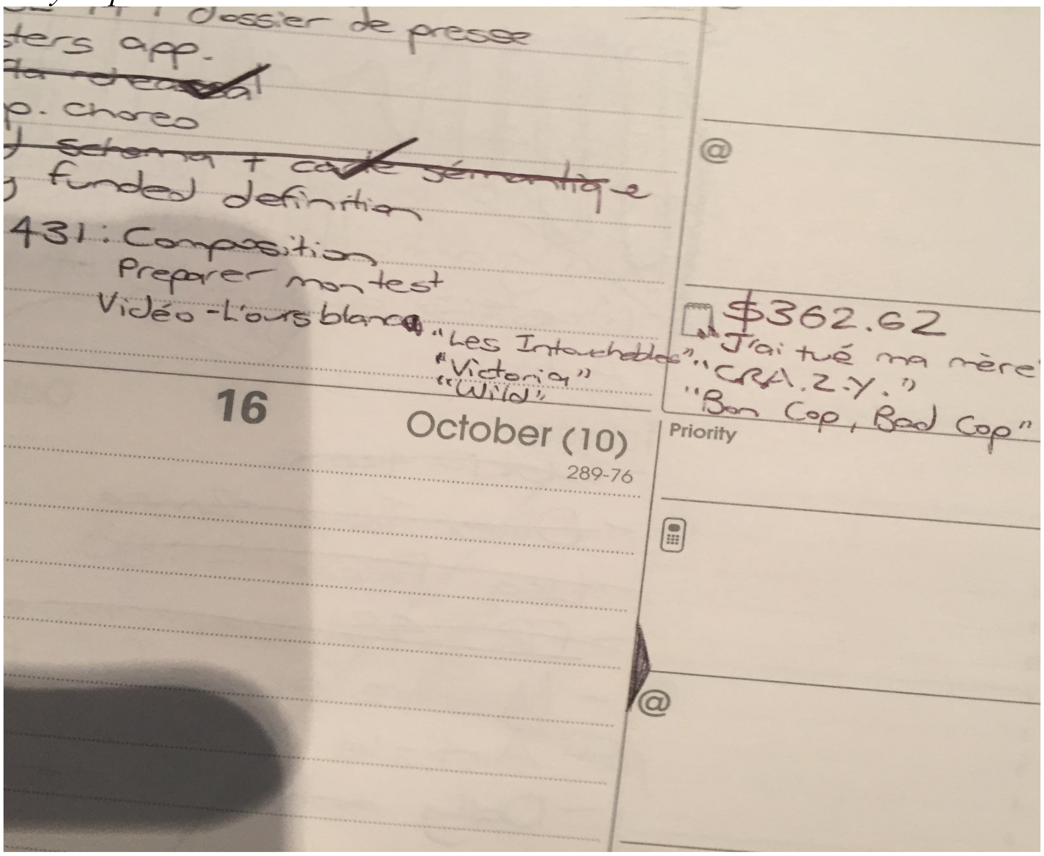
Note. Cindy uses her agenda to record details about money-making activities in parallel with her with work and education commitments.

Cindy used a red pen to record data about money-generating activities in her agenda. Using a two-step process, Cindy would first record the amount of money she would earn from a future activity, such as participating in a psychology study at her university. After completing the activity, she would circle the amount she earned using her red pen, symbolizing completion of the activity and confirmation of her collecting the associated funds. By recording personal financial data in her agenda, Cindy was able to keep track of how much money she earned from cash transactions for each month. Cindy's use of color coding, highlighting, and annotations were examples of the invisible labor that often goes unrecognized in personal information management but adds value to peoples' lives (Piras & Zanutto, 2010).

Despite limited recognition of time and task management documents as types of personal financial records, young adults valued incorporation of time and task management tools into their everyday personal financial to coordinate and execute everyday financial actions like paying bills on time. Lucy, an exchange student from New Zealand who came to Montréal to complete a second undergraduate degree with plans to start a master's degree in Kinesiology in the fall, also included her planner as a location of personal financial data during her guided tour. Lucy found her planner to be extremely important for managing the financial costs associated with traveling and studying abroad, which she illustrated by showing a page containing an amount to be paid on October 15th (Figure 5).

Figure 5

Lucy Captures Personal Financial Data in Her Calendar



Note. Lucy records a dollar amount in her calendar along with French language movie titles she wants to remember.

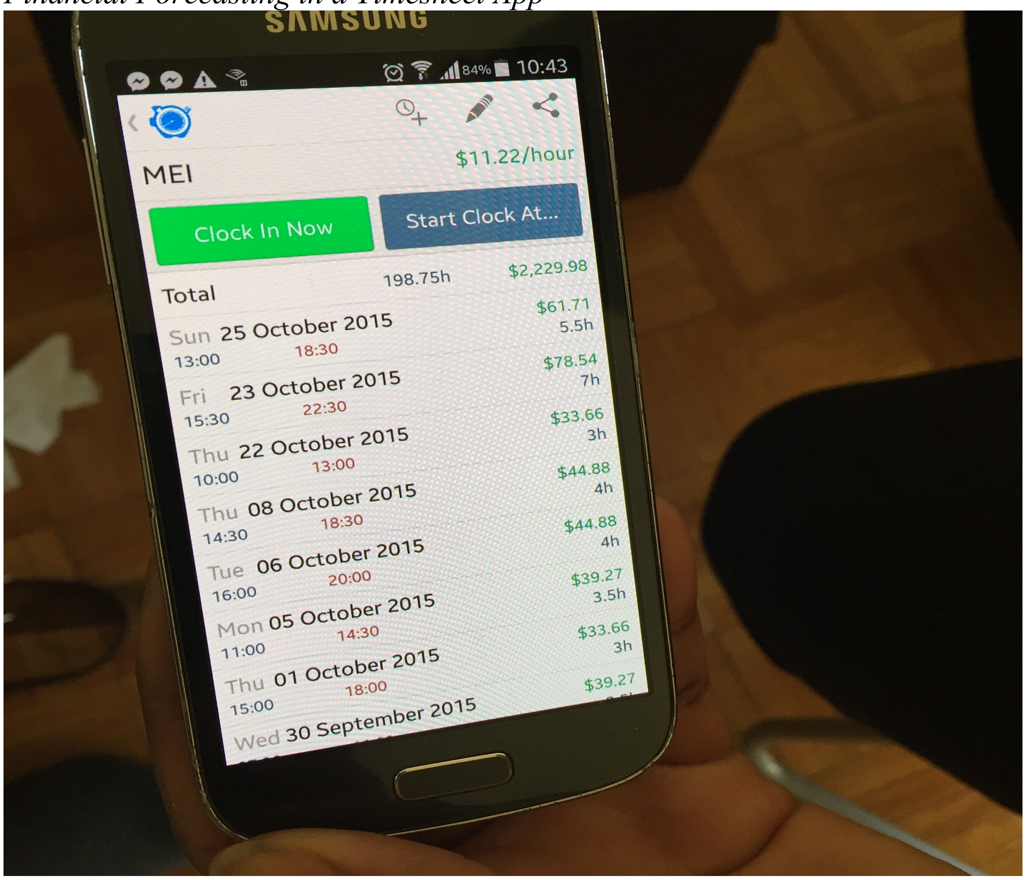
The personal financial data Lucy captured and recorded in her planner served as a form of "action information" (Cole, 1982). As action information, reencountering the entry in the future was intended to initiate a financial action, such as the payment of a bill for the dollar amount listed on that date. When used to execute a financial task, personal financial data was strategically located within a document with the intention of being reencountered at the right time to initiate the action, like ways seen when documents are intentionally located within workspaces such as offices (Cole, 1982; Malone, 1983). As containers of action information, time management tools fulfilled task management functions, like those seen in previous work on tools adapted for PIM purposes (Bellotti et al., 2002, 2003).

The personal financial data Lucy recorded in her calendar took the form of a single data point. It is difficult to interpret the meaning of an individual data point without relations to other pieces of data to give it context. Yet, Lucy was able to remember the significance of the dollar amount and the action she intended to initiate once she reencountered it in the future. The construction of meaning reflects a process like those observed with information scraps (Bernstein et al., 2007; 2008), where extremely small elements of personal records, such as annotations, are used as mnemonic devices to invoke complete ideas or memories in the mind of its creator. Success of personal data as mnemonic devices depends on a person's ability to successfully interpret, reconstruct meaning, and recall their original intention from the time of creation of the information scrap. The dollar amount recorded by Lucy becomes meaningful through its contextualization, such as being recorded on a specific date within the embedded structure of the calendar, and the interpretative process within Lucy that constructs meaning about what action took place or needs to take place on that date in response to that recorded dollar value. This was another example of how personal financial data could be used to generate new meaning recognized as information within the wisdom hierarchy, indicating instances of knowledge-production when interacting with personal financial data. In this case, the mnemonic quality of personal financial data is used to initiate a financial action rather than simply remember. A similar pattern is seen with the entries below the dollar amount, which are French language movie titles that Lucy recorded to remember and initiate the action of watching in the future as part of improving her command of French as a second language.

A final unique example of personal financial data encountered during the guided tours, related to time and task management tools, were timesheets that young adults used to track the hours they work and collect payment from their employers. Participants presented both paper and digital examples of timesheets. Claudia, a fourth-year undergraduate student of Malawi heritage who moved to Montréal from her homebase of Rome, showed an example of an app she uses to record the hours she works and estimate her income (Figure 6).

Figure 6

Financial Forecasting in a Timesheet App



Note. Claudia uses an app to record the hours she works and to predict her gross income.

Personal financial data such as timesheet entries were seen to fulfill some of the financial functions of households, such as monitoring flows of money and recording income generating activities and events (Tufano, 2009; Lemieux, 2010). Claudia used a timesheet app on her cellphone to monitor her work productivity, motivate herself while working, and to estimate the amount of money she will receive at the end of her pay period, which has similarities to other forms of quantification of the self and self-tracking using personal data, such as those explored by Feng and Agosto (2019). Claudia's timesheet app is an example of how data is embedded in information systems and how that data can be used to generate new value (Rowley, 2007). Claudia does not generate the new value herself. Instead, she uses the app to automate the generation of the new value she needs to make financial predictions. Claudia's use of a timesheet app illustrated how fulfillment of financial functions is an important criterion for assessing whether a data point is financial or not. The time data Claudia records becomes financial when used to fulfill the functions of communicating the hours she works to her employer to get paid or make financial forecasts. Next, I discuss examples of personal financial data embedded in information systems rather than self-captured by young adults.

As Content of Digital Tools

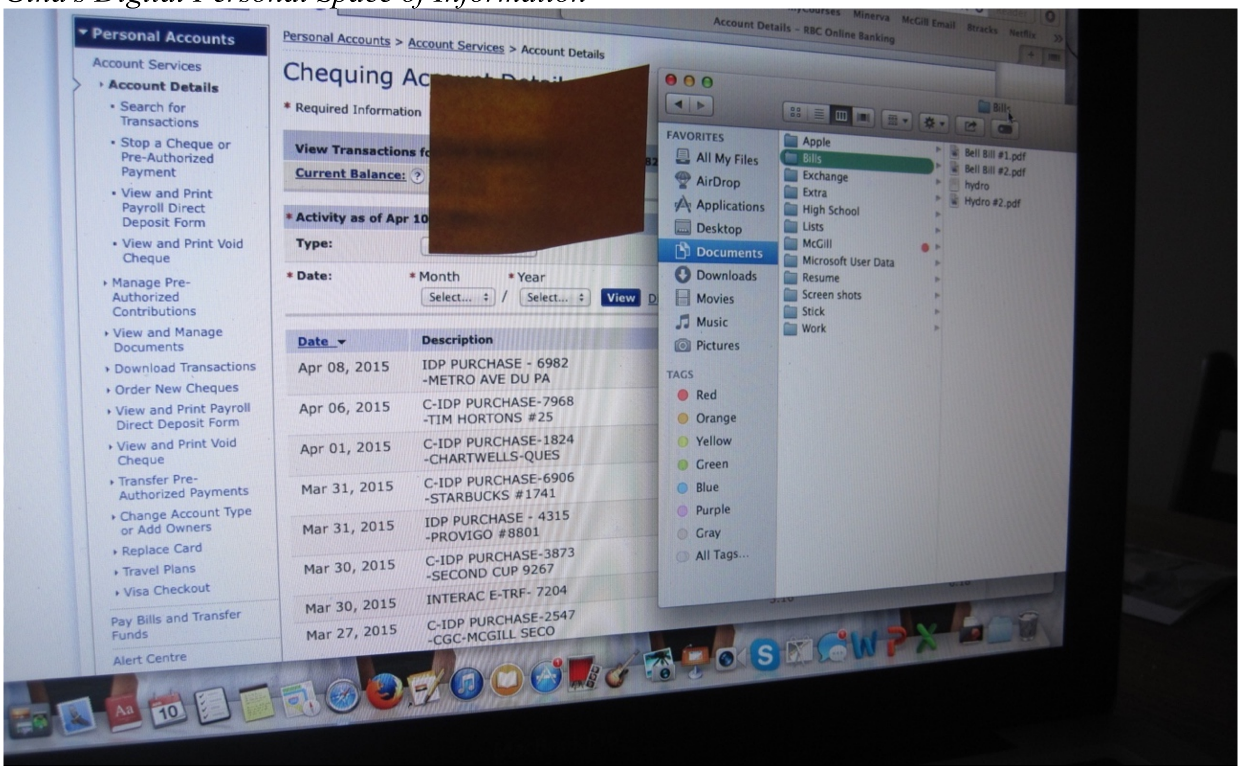
Young adults regularly access and interact with personal financial data automatically captured through financial service provider websites and apps. Examples include account balances and transaction records in the form of banking website and app content. These forms of personal financial data were distinct from the self-captured forms discussed previously. Financial banking websites and apps were important locations where young adults interacted with personal financial data on a regular basis. Personal financial data in digital tools took the form of “content” rather than documents. This section describes examples of personal financial data in digital tools in greater detail.

When giving her guided tour, Gina included online banking along with her laptop hard drive as locations where she interacts with personal financial data (Figure 7). On the left of her screen is an open browser with the online banking portal she uses to monitor her recent financial transactions and changes to her overall financial situation, which she assessed through her account balance (which she covered with a sticky note to protect her privacy). On the right, Gina showed examples of the PDF copies of monthly banking statements that she downloads on a regular basis.

The Wisdom Hierarchy recognizes how digital data is often embedded in information systems and displays (Rowley, 2007). Transaction details and account balances displayed to young adults as website and app content are forms of personal financial data consistent with the Wisdom Hierarchy as objective and discrete records of financial events, experiences, and transactions. They differ from self-captured personal financial data by virtue of the fact they are collected and organized automatically by financial service provider information systems rather than by young adults themselves. Data points such as account balances provided young adults with a summary of the standing of their account, which young adults could use as a heuristic of their overall financial situation. Kaye et al. (2014) refers to the strategy of checking and interpreting balancing to manage personal finances as use of the “financial touch”. Use of the financial touch for knowledge-production will be discussed in greater detail in the following chapter. Account balances as a single data point alone illustrate the ambiguity of meaning of data without relational mapping, context, and interpretation, which was often achieved with other system-captured data points such as transaction dates, amounts, and locations. Consequently, young adults like Gina used transaction data to verify and make sense of their account balances.

Figure 7

Gina's Digital Personal Space of Information



Note. Gina shows examples of transaction data from her online banking (on the left) and digital copies of financial statements she downloads and stores on her computer hard drive (on the right). A sticky note is used to prevent unintentional collection of financial data.

To summarize the main points of this section, three general categories of personal financial data were captured by the guided tour interviews: (1) self-captured personal financial data stored and interacted with in self-authored personal financial documents such as spreadsheets and spending logs; (2) self-captured personal financial data stored and interacted with in time management tools; and (3) system-captured personal financial data stored in financial service provider websites, apps. Financial data took the form of basic descriptions of financial activities, which captures the "when", "where", "what", and "how much" of financial transactions. I discussed examples of how personal financial data was used by young adults to make sense of their personal finances, support memory, and execute financial actions at the right time, as well as ways in which personal financial data is used to capture and reveal aspects of a person's financial personhood or character when used for financial tracking or to answer questions about one's financial behaviors. The creation of unique financial records in the form of personal financial data, such as within a spreadsheet or spending log, also raised questions about the appropriateness of existing models of PIM that conceptualize the start of the PIM lifecycle with keeping decisions, highlighting how interactions with personal data are often invisible and under-valued labor practices that create new value for users. Next, I turn to a discussion of examples of personal financial information captured by the guided tours.

Personal Financial Information

A key argument of this thesis is that personal financial information is distinct from personal financial records or documents, which as I argued in Chapter 2, are often treated as synonyms in PIM literature. This section further illustrates how "personal financial documents" or "records", as containers of personal financial data, are distinct from "personal financial information" as inferences made from financial data. Information, according to the Wisdom Hierarchy, is generated through the aggregation, organizing, and processing of data, through which meaningful relationships are articulated, new value is generated, and the ability to use that information towards the achievement of human goals and purposes becomes possible (Rowley, 2007).

Financial documents in themselves did not constitute “information”. Rather, personal financial information is a product of the meaning made from the contents of personal financial documents. Guided tours captured three ways that young adults generated novel forms of financial knowing, through: aggregation, organization, and processing of financial data and records. First, personal financial information was generated through the organization of financial records at the collection-level. Participants exhibited varying degrees of investment arranging and describing the personal financial records within their collections, but when organized, arrangement conveyed important information to young adults about their financial personhood and financial records management workflow. The generation of personal financial information was also observed in the ways in which young adults organized and processed personal financial data within self-authored documents. Lastly, personal financial information was generated through exploitation of personal financial data in the form of inferences. This section contrasts the examples of storage practices within collections of personal financial documents with illustrations of personal financial information that conform with the Wisdom Hierarchy. First, I discuss the organization of personal financial records within participants’ personal collections.

As Organization of the Collection

Across guided tours, young adults presented numerous examples of personal financial records in the form of financial documents, both analog and digital, that they curated as personal collections. Common examples of personal financial records included bills, statements, receipts, correspondences, and contracts. These records were presented in addition to the self-authored documents that young adults create such as spreadsheets, spending logs, and time management tools used to capture personal financial data discussed in the previous section.

Collections of personal financial information contained four general categories of records that young adults saw as requiring curation. Young adults kept and preserved personal financial records that they saw as containing (1) proof of purchase and other forms of financial "evidence", (2) communications and agreements between themselves and other parties with whom they have financial relationships, (3) documents associated with their financial or legal identity, specifically those containing personally identifying data like names, social insurance number, account numbers, etc., and (4) items that evidence their execution of financial roles and responsibilities. The categories correspond closely to functions associated with personal papers and personal archives (e.g., Cox, 1996; McKemmish, 1996; Cox & Duff, 1997). Documents were containers of valued personal financial data, and documents provided young adults with the means for its preservation, access, and interaction. Young adults use records management behaviors (e.g., appraising, keeping, organizing, retrieving, discarding, etc.) and digital technologies (e.g., personal computers) to curate and manage their collections of personal financial records.

Across the guided tours, participants showed example documents from their collections of personal financial records as well as the various ways in which they stored their personal financial records within their homes. Collections of personal financial documents contained both paper and digital records that young adults preserved and maintained in storage. The range of collection storage and organizational strategies observed across guided tours conformed with

Malone's (1983) general distinction between filing and piles with finding and reminding functions as the two predominant styles for storing personal records. Both piling and filing styles of storage were observed during the guided tours, with some participants exhibiting a "hybrid style" with some portions of their personal collections neatly organized using folders or dividers while other portions were stored in loosely organized piles within their personal information environment. Malone (1983) found two distinct styles of personal information management at the collection-level, with some office workers preferring to file personal records neatly while others preferred to store documents in temporally structured piles located near their workspace. Personal style in Malone's study was closely associated with function, with piles supporting both "finding" documents when needed and "reminding" their owners of tasks that needed to be completed. Young adult's interactions with spreadsheets and paper spending logs were rather similar. Young adults build their collections of financial data and documents overtime through processes of accumulation, which was reflected in the temporal organization of documents within the personal information environment. The location of documents within a space provided insights into the financial records management workflows of participants and their intended uses for personal financial documents. The following sections explore the arrangement of financial documents within the homes of young adults before turning to a discussion of personal financial information as inferences generated from personal financial data contained within those records. First, I discuss examples of piles from the guided tours.

Storage Piles

The use of piles for storing personal financial records was common across guided tours. Malone (1983) defines piles as groupings of documents that are not titled or explicitly arranged, created in a haphazard fashion and inverse chronologically ordered, but located strategically in a workspace to support reuse and remind owners of tasks to be completed (pp. 106-107). Piles were a low cost and low effort way of organizing personal financial documents through processes of accumulation. Locations for piles used for storage were often tucked away and hidden from view within a young adult's personal space of information, such as in the back of a closet, stored in a storage bin under a bed, or within a drawer. The use of piles reflected the motivation to keep and preserve personal financial documents if they were ever needed in the future but with limited investment in describing (e.g., labeling) or organizing (e.g., categorization via filing) that could support future retrieval. Across guided tours, participants recalled very few instances when they retrieved and reused personal financial records from their collections, explaining why participants appeared to invest extremely limited time and effort into creating more elaborate organizational structures in comparison to piles. The limited concern about retrievability of personal financial documents among young adult participants somewhat diverges from Malone's (1983) finding that the temporal organization of piles through processes of accumulation directly supports retrieval through browsing strategies, where owners of documents use the temporal organization of piles to remember the approximate location and find documents. In the case of collections of personal financial records, retrieval in the future was often low-priority and did not motivate use of piles as an organizational strategy since participants described rarely retrieving documents from their own collections.

Participants described fluctuations in the amount of effort they put into the organization of their personal collections, with a general tendency towards reductions over time. For example, Dan was a fourth-year engineering student close to graduation at the time of research. He recently completed an internship during his third year of study, which afforded him a new level of financial resources compared to what he experienced at the start of his university experience. During his guided tour, Dan described how his newfound elevated income resulted in a period of much greater interaction with personal financial records. Dan was motivated to interact with his personal financial records more because of his desire to manage his new income carefully and responsibly, which he achieved using digital spreadsheets that allowed him to track how he spent and saved his income. Dan described how the amount of time and effort he put into tracking his spending using Excel, and managing his collection of personal financial records, declined as he became accustomed to the financial stability afforded by his internship.

One of the destinations of his guided tour was the back of his bedroom closet where he kept a plastic storage bin full of personal financial records for long-term storage, such as bills and pays stubs, some of which remained unopened in their original envelopes (Figure 8). PIM researchers theorize that filing-based organizational strategies for personal records indicate the intention to retrieve and use information items in the future (Malone, 1983; Barreau, 1995; Barreau & Nardi, 1995). Use of a storage bin in the back of his closet was an easy and low-effort way for Dan to store personal financial records but his minimal investment in organization and description also illustrated his limited intention to ever access and retrieve those records in the future. Rather, Dan's strategy was motivated by a desire to keep and preserve records in case they were ever needed, reflecting Moen and Flatley's (2005) "just-in-case" category of personal records. Keeping said important things about the perceived value of financial records by young adults. The keeping of personal financial documents signified that they were appraised with high intrinsic value, suggesting young adults see personal financial data as inherently valuable and therefore worth keeping. But limited investment in organization at the collection-level when preserving financial documents suggested that financial records were appraised with low-secondary value with limited anticipation of reuse. As a result, the pile in the back of Dan's closet was organized temporally by default reflecting his process of accumulating financial records over time kept just-in-case.

Figure 8

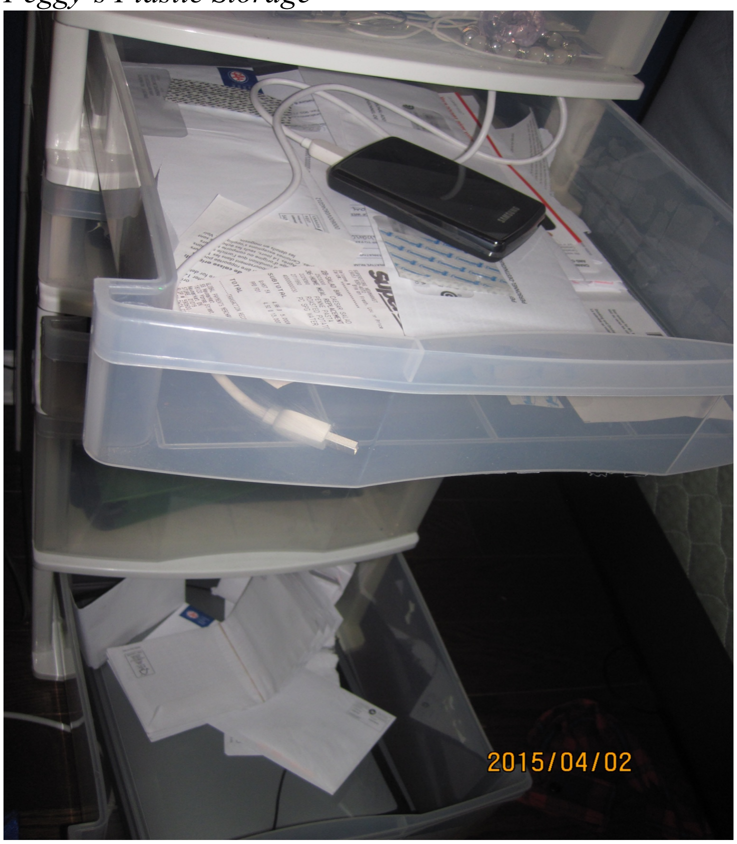
Dan's Long Term Storage Pile in the Back of his Bedroom Closet

Note. Dan used a plastic basket to house a temporally organized pile in the back of his bedroom closet to store paper financial records hidden from view.

Peggy, an international undergraduate student from China studying in Montréal, also used a piling strategy for the long-term storage of her personal financial records. During Peggy's guided tour, she presented the plastic storage container located in the corner of her bedroom, which she used for containing her piles of personal financial records (Figure 9). Peggy's plastic storage bin was also the location where she stored a backup copy of her most important digital files, which she kept on an external hard drive seen resting on top of her pile of receipts and financial statements. Peggy used more than one drawer to store her personal financial records, both of which contained piles with dramatically different styles of organization.

Figure 9

Peggy's Plastic Storage



Note. Peggy uses a plastic storage bin to pile personal financial records including receipts (top drawer) and bank statements (bottom drawer), some of which are still in their original envelopes in an unopened state.

The pile in Peggy's top drawer showed a much higher level of organization, with documents and receipts neatly piled on top of each other compared to her bottom drawer, which was used to haphazardly collect financial documents still in their original envelopes. Like Dan's storage pile in the back of his closet, Peggy's piles show very few organizational behaviors that would indicate significant investment in supporting future retrieval, such as categorization, labeling, or filing. Rather, Peggy's use of piles also supports an interpretive narrative where personal financial documents have limited reuse or secondary value, which in turn provides limited justification for investment in information management behaviors that would support future retrieval. Instead, piles were used as a low-cost low-effort "just-in-case" preservation strategy for financial records with intrinsic value but limited secondary value. Next, I turn to a discussion of reminding as a second function of piles observed during the guided tours.

Reminding and Communicating Piles

A second category of piles that served distinct functions from storage and preservation described in the previous section emerged through thematic analysis. In some cases, piles served reminding functions, like those described by Malone (1983). "Reminding piles" were distinct from storage piles because of their highly visible locations in the personal spaces of information of young adults. Participants put reminder piles in strategic places where they could easily deposit new financial records in preparation for further processing and use. The high visibility of reminding piles served as a motivator of financial action (e.g., such as paying a bill) and financial coordination with other members of a household, reminiscent of Cole's (1982) category of action information.

Kim described how the spatial location of documents within her personal space was intentional and corresponded with the life cycle of personal financial records as well as her workflow used to act upon and manage them. Kim was a fourth-year science student who described herself as coming from a low socio-economic-status family. She took pride in her ability to self-finance her university education through a combination of work study programs and government loans. She credited her personal financial records management practices as an important skillset helping her achieve her educational and career goals. One of the first destinations on Kim's guided tour was a pile of mail on the windowsill in her bedroom containing recently received paper bills and financial statements. Kim chose the windowsill for her temporary storage area because the windowsill was immediately next to her bedroom door, allowing her to deposit new items there as she entered her room (Figure 10). Kim described her pile as a transitory storage area for incoming financial documents requiring her attention soon. One reason for storing documents in a reminding pile was coordinating financial actions that require multiple financial documents that arrive separately. Kim would store documents in her reminding pile as she waited for additional financial documents to first arrive in the mail that she needed to complete the task. The high visibility of the pile on her windowsill allowed Kim to keep track of which documents she received, and which remained outstanding. Once all the documents she needed for the month arrived, she described how the pile would then serve as a reminder of the uncompleted financial tasks awaiting her attention. Upon completion of tasks, such as paying the associated bills, she would neatly file the documents in her desk drawer. Kim's use of a pile to motivate financial action captures Malone's (1983) reminding function of piles, Cole's (1982) concept of action information in personal collections, and Moen and Brennan's (2005) "just-at-hand" storage solutions. Observations of reminding piles in collections of personal financial records reinforce findings from previous works that the spatial location of personal records within work settings is strategic and reflects the workflows and intended uses of documents. The arrangement of documents within a personal information environment sometimes communicated important messages about upcoming financial actions and tasks to young adults, which was interpreted as a form of knowledge-production related to workflow with personal financial records. These conversations were an example of self-directed communication that occurs during the curation of personal financial records (Bergman & Whittaker, 2016, p.17).

Figure 10

Kim's Incoming Financial Records Pile

Note. Kim maintains a pile of "incoming" financial documents on a windowsill near the entrance of her bedroom that reminds and motivates financial and records management actions.

Sometimes piles supported financial communication among members of a household. In such cases, temporary storage piles were used to transfer custody of financial documents from one member of the household to another. Temporary storage piles used to communicate and transfer custody were strategically located in high-traffic communal spaces within a home such as kitchens. This was an example of what Piras and Zannuto (2010) refers to as “crossroads” in personal information environments, which are selected to support reencountering and accessing personal records. The communicative and custodial transferring functions of piles differ from the reminding and finding functions originally identified by Malone (1983). Rather than remind, temporary storage piles located at crossroads supported communication and coordination among financial actors within a household.

Crossroads within homes were especially important sites for communication and transferring custody of records in households containing more than one young adult. Mike, a second-year undergraduate student living with two roommates in an apartment close to his university, included a crossroad for personal financial records on his guided tour. The crossroad in his apartment was a small gap between the microwave and a kitchen cupboard that he and his roommates used to gather receipts and bills for shared monthly expenses (Figure 11). As the designated records manager in his household, Mike was responsible for collecting the documents deposited by his roommates at the crossroads, adding up the expenses, paying the bills, and then communicating amounts owed by each roommate using a note posted on the refrigerator door. In Mike’s apartment, the crossroads was an important hub for asynchronous financial communication and coordination. After, Mike would store the bills and receipts he collected from the crossroads in his bedroom with the rest of his collection of personal financial records.

The use of a crossroads in Mike's apartment highlighted a distinction between personal and shared spaces for information within a home. Across guided tours, bedrooms were the most common location where guided tour interviews took place and were often the default location for storing personal financial records. Bedrooms carried the dual connotation of "the personal" as (1) a reserved space exclusively used by one person, and (2) a "private" space for objects requiring access control due to their sensitive nature. Many financial records also carried this dual connotation of personal, as both intended for exclusive use by the young adult owner as well as containing content that is deeply private in nature not meant for circulation. The dual connotation of personal in the context of personal finance differs from Lansdale's (1983) definition of personal information that rejects privacy as a distinguishing feature of personal information. For this reason, the use of temporary storage locations in communal spaces within a home to share personal financial records and information stood out in contrast from the pattern of longer-term storage in exclusive spaces such as bedrooms. Next, I turn to a discussion of filing in collections of personal financial records.

Figure 11

The Financial Crossroads in Mike's Apartment

Note. The crossroad in Mike's apartment was used for transferring custody of financial records between roommates and communicating about shared expenses.

Storage Files

Guided tours also provided several examples of filing as a storage solution for collections of personal financial records. Filing was distinguished from piles as an organizational and storage strategy through use of categorization and grouping of financial records within a personal collection. Filing allowed young adults to generate novel information about the structure of their collection of personal financial records. Sometimes filing structures also generated information about the different domains of financial personhood being monitored by young adults through personal financial records management. Across guided tours, several young adults included filing cabinets, binders, divided portfolio folders, and other storage devices that allowed them to organize and store personal financial documents as tour destinations. Many young adults also showed digital spaces, such as directories on computer hard drives structured using digital folders, used to organize and store digital personal financial documents. Malone (1983) found that filing was a distinct style of records management within office spaces, characterized by investment of time and effort to describe and structure collections in support of future document retrieval. Several participants expressed rarely retrieving documents from their collections of personal financial information, reflected in their limited use of sophisticated and detailed filing systems for personal financial records. This section provides a contrasting perspective and explores examples of filing as a storage solution.

Folders are an organizational strategy that supports future retrieval of documents, but people commonly experience greater difficulty finding documents when their collections are organized categorically rather than temporally (Malone, 1983, Lansdale 1991; Barreau 1995; Barreau & Nardi 1995). Instead, people tend to use visual attributes of documents to identify and retrieve documents, with browsing being the preferred information behavior used in retrieval. Some young adults used folders to store documents but exhibited limited investments in labeling their files because they rarely search for and retrieve documents from their personal collections. Jane, a fourth-year physiology student, was in the middle of planning a move to Europe to start a master’s program in physiotherapy at the time of research. Jane preferred to manage most of her personal finances digitally using a self-authored spreadsheet and her online banking, but she still maintained a desk drawer of files for paper financial documentation. As a result, Jane had a digital-analog hybrid style of personal financial records management that spanned both digital and physical spaces of information. Jane included a drawer of a small mobile filing cabinet as a destination on her guided tour, where she used hanging folders to organize and store a limited number of financial records (Figure 12). Use of hanging holders allowed Jane to easily organize and store financial records in distinct categories. Despite using folders to separate her records, she made very little use of description, with only two folders labeled using bright pink sticky notes. Although jane invested some effort into categorizing the paper portion of her collection by separating documents into different folders, she invested less time into explicit description of her collection that could support future retrieval. Across guided tours, few participants recalled instances in which they ever needed to find a retrieve older documents from their collections as a reason for limited use of description in their filing strategies.

Figure 12
Jane's Filing Cabinet

Note. Jane's minimally labeled hanging folders used to manage paper financial records despite preferring e-records for managing her day-to-day personal finances.

Limited use of explicit description and labelling was common among participants who used filing to organize and store collections of personal financial records in paper format. Among participants, there was a preference for portfolio-style document holders with built-in dividers, rather than the use of filing cabinets or other more substantial pieces of storage furniture. Portfolio-style document holders offered a low-cost and highly portable solution for organizing personal financial records that young adults could relocate to different spaces within a home, and between homes since several participants reported changing apartments frequently during university, consistent with the high residential instability associated with young adulthood (Arnett, 1998; 2000). Chris, a recent graduate of a management and business administration program, who described his personal financial records management style as minimal and paper-based, used a small divided-document portfolio to house his entire collection of personal financial records, which he kept on a bookshelf in the living room of his apartment (Figure 13). Built-in dividers offered an easy low-effort strategy for separating financial documents into categories, but Chris also made limited effort to explicitly describe the structure of his collection leaving all included label tabs blank. Like Jane, Chris relied on visual-based strategies to retrieve documents and the small size of his collection meant that he saw little need to invest in description to assist with retrieval. As the sole user of his collection and given the limited frequency of reusing personal financial records after storing, Chris felt little need to make the tacit structure of his filing explicit.

Figure 13

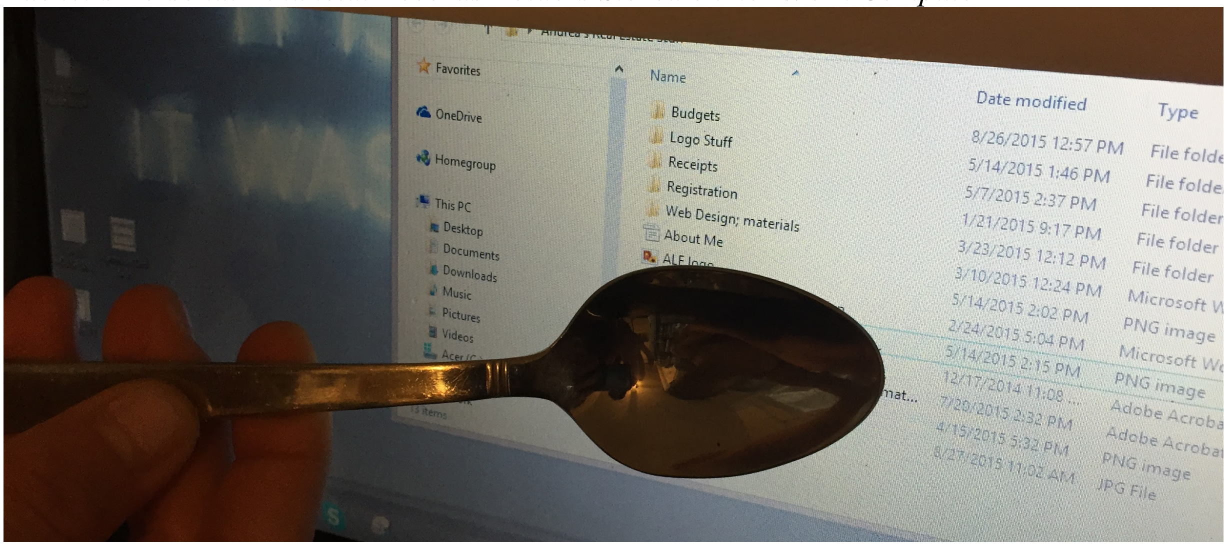
Chris' Minimalist Collection of Personal Financial Documents

Note. Chris uses a plastic portfolio style storage container with built in dividers to store an unlabeled minimal collection of personal financial records in his living room along with pet supplies, cleaning products, and keepsakes.

When participants used digital tools to manage digital collections, they were more likely to engage in descriptive behaviors, specifically the labeling of file folders, in ways that young adults who managed paper collections rarely did. Digital environments reduced young adults' abilities to see the documents within folders, so labeling was essential for understanding the structure of a digital collection of personal financial records. Rachel, a recent university graduate running her own small real estate business in Toronto, included the hard drive of one of her two laptop computers as a locale on her guided tour. Rachel described using two separate laptops, one work and one personal device, to keep her work and non-work personal documentation separate. One exception to this rule was her personal financial records, which she preferred to maintain on her work device. As a small business owner Rachel felt there was a lot of overlap between her personal and business finances, which made the distinction between work and personal documents blurry in comparison to the kinds of personal files she stored on her personal device, like photos. She also chose to manage her personal financial records on her work device due to a higher level of security used to protect the sensitive information she maintained on her business clients. Rachel maintained a digital folder for her personal finances, which contained a small number of subfolders used to categorize her personal financial records, which she used a spoon rather than a sticky note to obscure the file names from view of the researcher during her guided tour (Figure 14). When asked about retrieval, Rachel described still using a visual-based browsing strategy to find target documents with minimal use of folder names. The use of visual-based retrieval strategies, or browsing, that rely on physical and contextual attributes of documents as the default retrieval strategy with personal collections is well documented in the literature on personal information management (Lansdale 1991; Barreau 1995; Barreau & Nardi 1995). Young adults who participated in this research described using browsing strategies for both paper and digital documents regardless of whether they used filing or piling strategies, with or without folder labels.

Figure 14

Rachel's Personal Financial Records Folders Stored on her Work Computer

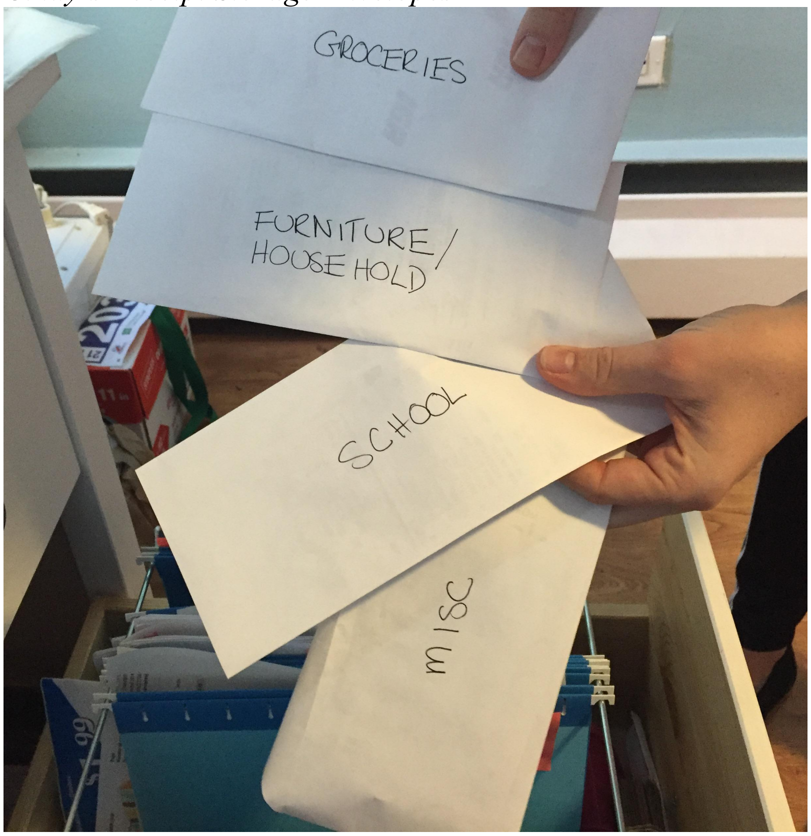


Note. Rachel shows the folder labels she uses for her digital financial records file structure. She uses a spoon to hide personally identifying details she does not want captured by the researcher.

Young adults separated their entire collection of personal records into different "genres of personal information" using filing that revealed the top-level structure of their collections. Top-level structures also revealed how young adults see their own financial personhood. It was not uncommon for young adults to curate school, work, health, and government-related documents together with their personal financial information. Some participants made little distinction between personal financial documents and other kinds of personal records, referring to their entire collections as their "important papers". The documents contained within a personal collection reflected different facets of a young adult's life context, including activities and relationships that have financial implications. Filing structures, when used by young adults, highlighted the ways in which personal finance intersects with many other domains of human life. The intersection of personal finance with other aspects of the human experience was clearly illustrated by Cindy, a busy undergraduate student who was also the captain of a university sports team and president of a student council, who included a desk drawer in her bedroom as a location on her guided tour, where she maintained a small number of hanging file folders for managing personal paper documents. Cindy described how she used plain mailer envelopes to organize and separate receipts in her desk drawer, which she kept in a single folder (Figure 15). Cindy's use of labels on envelopes provided insight into the structure she uses to organize her collection of personal financial records. Since the envelopes she used were opaque and offer few clues about their contents, use of labels was essential for differentiating between envelopes and visually seeing the categories of receipts in her collection. The categories young adults used to structure their collections of personal financial records resembled the "financial maps" produced by participants in Kaye et al.'s (2014) study, which provided insights into all the different aspects of financial life that need to be integrated into well-designed financial management systems. Guided tours with young adults support this argument and reveal how personal financial records are an important tool for young adults to manage their lives in general, with the categorical structures used to organize personal collections reflecting the different domains of their lives being monitored and managed simultaneously through personal finance as a proxy. Next, I turn to a discussion of personal financial information, which is distinct from the personal financial documents discussed thus far in this section.

Figure 15

Cindy's Receipt Storage Envelopes



Note. Cindy's receipt filled envelopes shows how personal finance intersects with different domains of her life.

As Organization within Documents

Personal financial data was one of the main tools that young adults used for understanding their financial situations and making financial decisions. The production of personal financial information from personal financial data is a form of sense-making (Dervin, 1983). As a context of sense-making, people experience gaps in their understanding of their financial situation that can be filled through personal financial data, which provide objective and factual accounts of their recent financial behaviors. Through sense-making, people construct subjective accounts or narratives of their financial situation that can in turn support financial action and guide financial planning and decision-making. To construct a “financial narrative”, people need to look back at recent financial events and construct stories that draw causal links between their actions from the financial past to the financial present. Guided tours revealed that financial narratives were constructed from personal financial data. Since a person’s financial situation is always changing and new personal financial data is generated with each financial transaction, interactions with personal financial records afford people with many opportunities to revise the financial narratives they construct and arrive at new interpretations of their financial situation in order identify and address gaps in their knowledge, make financial decisions, and execute financial actions. The guided tours showed how documents, especially self-authored documents, are useful for generating personal financial information from personal financial data, through a process called knowledge-production, which will be discussed briefly in the following section and in greater detail in Chapter 6.

Young adults generated coherent financial narratives through their interactions with personal financial data. One of the main ways sense-making occurred through interactions with personal financial data was when young adults captured and organized personal financial data in self-authored financial documents such as spreadsheets and spending logs. Headings, color codes, and annotations within documents were important tools for organizing, categorizing, and interpreting personal financial data to generate new value, which were coded as examples of personal financial information.

Young adults also engaged in sense-making when they generated novel information through mathematical calculations using the data that they recorded in personal financial documents such as spending logs and spreadsheets. Young adults described how they processed their personal financial data to calculate totals spent within categories of expenses they regularly monitor (e.g., amounts spent on food). The outcome of personal financial sense-making through interactions with personal financial data was the construction of narratives about their current financial situation that could inform future financial decisions and coordinate financial actions. Through the interpretive and knowledge-production processes entailed by sense-making, young adults generate personal financial information from personal financial data. Guided tours captured traces of the sense-making processes where young adults generated novel value and insights from their personal financial data. These instances were also coded as examples of personal financial information. The remainder of this section explores examples of personal financial information inferred from personal financial data.

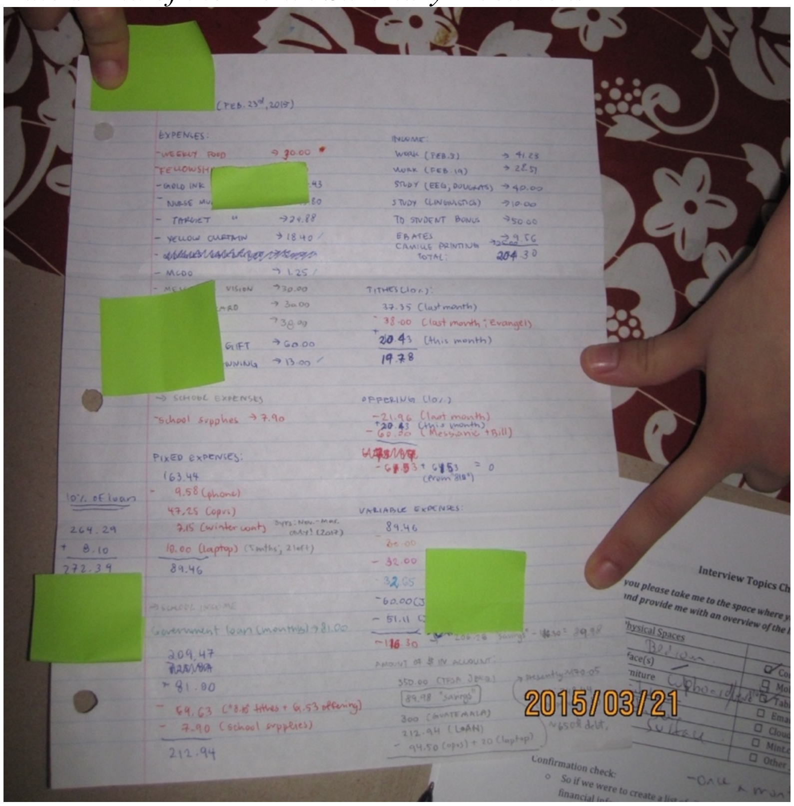
Returning to the example of Cindy's agenda, which she used to capture personal financial data about her income generating activities (Figure 4), several techniques were used simultaneously to organize and make sense of her time management data, which generated novel information. To organize and differentiate between entries, she used a sophisticated color-coding system to represent and visually distinguish between different kinds of data captured on the same page. Money generating time commitments were highlighted in yellow which separated them from entries related to school and recreation. To illustrate her color-coding system, she showed a page that contained three entries for a series of psychology studies she was enrolled in. Cindy described how she kept track of the completion of money generating activities using red pen, which she used to write down and circle the dollar amount received upon completion that she could later use to generate a total earned each month. Piras and Zanutto (2010) made similar observations about underlining, annotating, and integration as strategies that enhance the contents of personal health records but often go unrecognized for the added-value that they generate as forms of invisible labor. Underlining, annotations, and color-coding were simultaneously forms of personal financial data as well as structural elements that could be used within documents organize and support interpretation of data to generate new value in the form of personal financial information. Next, I discuss examples of new value in the form of inferences generated from the interpretation of personal financial data.

As Inferences from Data

In guided tours, participants presented examples of the ways in which they processed the personal financial data they collected to generate new value that could be used to make sense of their personal finances. Such examples contrast from what scholars in personal information management typically mean when using the term "information", which is normally treated as a synonym for documents as discussed in Chapter 2. Documents were valued containers of data that young adults could use to generate personal financial information using inferences to answer financial questions and execute financial actions, as hypothesized by the Wisdom Hierarchy. Kate was a first-year nursing student who worked part time at a local fast-food restaurant to earn spending money. Kate also described herself as a religious person and took pride in volunteering regularly in her church. Kate provided an example of a self-authored document that illustrated how she generates personal financial information from personal financial data. During her guided tour, Kate described how she always kept a sheet of paper in her wallet that she used to record her day-to-day cash transactions to track her spending, which she then used at the end of each month to create a new financial document that summarized all the money she spent and earned (Figure 16). The purpose of creating this monthly summary was to better understand her financial situation at the end of each month and stay within her financial plan. By creating a monthly summary, Kate was able to bring together financial data that is normally fragmented across different financial documents. Like other participants, Kate used a sophisticated color-coding system by utilizing four different pen colors to visually organize and categorize data within her monthly summary. Kate used headings to describe her data and columns to keep her categories separated. In the margins and at the end of sections, Kate recorded calculations used to generate new value that addressed gaps in her understanding about how much she spent and earned within the month. With this newly constructed financial narrative, she could then modify her financial behaviors in the following month in order stay within her financial means. Kate's end of the month financial summaries contained a record of the interpretive processes she uses to make sense of her financial situation as well as the new value she generated through processing and using her personal financial data. In particular, the calculations she conducted with her personal financial data to answer questions she had about her spending and saving were examples of the kinds of personal financial information that young adults infer from personal financial data.

Figure 16

Kate's End of the Month Summary Document



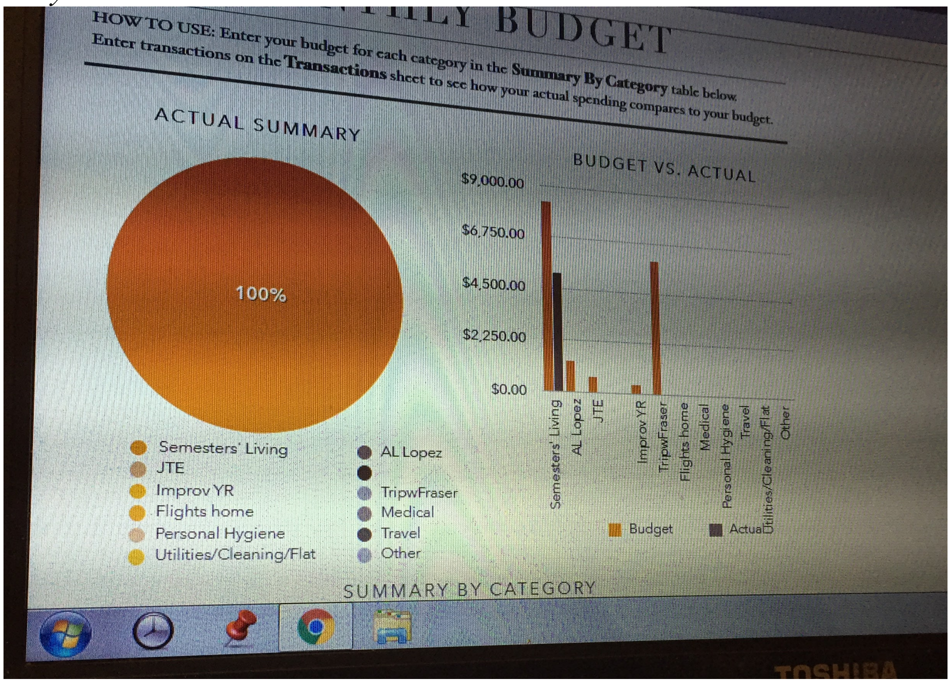
Note. Kate's end of the month consolidation that she creates to help her see and understand her financial situation.

Sense making was used to generate the inferences that young adults needed to answer every day financial questions and navigate novel financial situations, both in the present and the future. The generation of information from data was an interpretive process, with the insights generated capable of being represented in a variety of ways including visualizations. Lucy, the international student from New Zealand who used her calendar to record personal financial data, also included a document that illustrated her interpretive process in her guided tour. After moving to Canada to complete a second bachelor's degree before starting graduate school, Lucy created a financial document to make the most of her limited financial resources and compare her actual expenses with the estimates she developed before moving. To make the comparisons she needed to understand her actual versus projected spending, she generated a series of graphs using a budgeting tool. A budget is a financial plan that helps people manage their money towards the achievement of its creator's financial goals and fulfillment of needs and obligations (Government of Canada, 2022). The act of budgeting entails defining financial goals, prioritizing financial needs, and understanding one's spending patterns (Government of Canada, 2022). To assist with interpreting her personal financial data, she used graphs to visualize the amounts she spent within each category (Figure 17). Through the graphs, she was able to see how her actual spending on living expenses exceeded her estimates, necessitating her to have to scale down her future travel ambitions for the summer before the start of graduate school to make up the difference. Lucy's example illustrates how the production of personal financial information from personal financial data was interpretive in nature rather than something contained within any of her personal financial records. Although Lucy generated a novel personal financial document using the budgeting tool, the value she was able to generate to make financial plans and decisions arose from the interaction she had with her financial document rather than residing within the document itself. Her interpretation of the meaning of the graphs and the kinds of financial decisions she would face, such as reducing her summer travel budget, illustrated how knowledge-production and sense-making were implicated in the interactions people have with personal financial data and the role that authoring a personal financial document can play in supporting the generation of new value that is not always recorded and contained within the document itself. Such acts of knowledge-production that generate information from data are not captured well by existing conceptual models of PIM that focus on knowledge-transfer via information systems, resulting in an incomplete account of personal information management and contribute to the invisibility of labor practices involving personal information, such as those described by Piras and Zanutto (2010), which are also seen in interactions with personal financial data.

To summarize the main findings in this section, as these examples demonstrate, personal financial information was generated through interactions with personal financial data. The creation of original self-authored documents, such as an end of the month summary or visualizations in the form of graphs, was an important technique for generating personal financial information. Through the creation of a self-authored document, young adults were able to interpret their personal financial data to generate financial narratives capable of answering financial questions (e.g., how much did I spend last month?) and shape future financial action. The personal financial information could be made explicit when recorded in the self-authored financial document, as seen in Kate's end of the month summary. These were distinct from the reminding, preservation, transferring of custodial responsibility for records, and financial communication functions seen through the organization of financial records at the collection-level. Participants avoided investing effort in describing the structure of their collections of personal financial information in explicit ways, due to limited intention to ever retrieve documents, which was in stark contrast the efforts invested within self-authored personal financial documents such as spreadsheets, spending logs, or time management tools to make sense of personal financial data. Next, I turn to examples of personal financial knowledge. This will be discussed in greater detail and contrasted with the interactions young adults have with financial data in financial service provider information systems in the following chapter.

Figure 17

Lucy's Financial Visualizations



Note. Lucy uses graphs to make sense from personal financial data and make financial decisions.

Personal Financial Knowledge

Knowledge was defined as the combination of data and information with opinion, expertise, skill, and experience applied towards decision making and action (Rowley, 2007). In the context of personal finance, financial knowledge was associated with practical financial management skills developed through practice and direct experience. Personal financial knowledge answered questions such as how and when to use personal financial data and information to achieve financial goals and act in ways that demonstrated financial responsibility and financial independence. The guided tours did not capture examples of personal financial knowledge in the form of documents within personal collections, such as how-to guides or other authoritative documents containing expert opinions that young adults could use to answer questions about how to best manage their personal finances and associated financial documentation. Rather, young adults often referred to humans as sources of financial knowledge and there was a strong preference for consulting with human sources for financial know-how. During guided tours, many participants identified humans they saw as possessing personal financial knowledge that they themselves did not have. Financial knowledge keepers included parents, friends, and representatives from financial and governmental institutions who could be consulted for financial guidance and best-practices. These people were seen as experts who can share know-how that comes from personal experience or formal training, who could then teach young adults. These were coded as examples of personal financial knowledge.

As Expert Advice

Personal financial knowledge was something tacit and orally transmitted. The overwhelming preference and reliance on human sources for financial knowledge was unexpected prior to the guided tours. When designing the guided tour protocol, I assumed that participants would show examples of financial textbooks, websites, and other authoritative information items containing instructions or advice on how to manage personal finances and associated records. When young adults did describe interacting with documents containing financial know-how, examples included social media and online reviews containing personal anecdotes, advice, and testimonies based on the personal financial experiences and recommended actions of the content's author that they rarely duplicated and preserved as part of their personal collections. Young adults described using online content containing personal financial knowledge to answer financial questions and shape financial behaviors as complementary to the familiar human sources in their personal networks. Observations from the guided tours suggested young adults make considerable use of the personal financial knowledge of others as part of learning how to manage personal finances but financial knowledge was rarely managed as objects within personal collections. For this reason, there were no photographic examples of documents containing financial knowledge in the guided tour dataset. This section discusses examples of personal financial knowledge captured by the guided tours.

Instances where young adults described seeking advice and procedural guidance were coded as examples of financial knowledge. Human sources were preferred because of their ability to synthesize complex financial information and repackage personal experience in personalized and accessible ways, like the informal archivists in white-collar workplaces described by Whittaker and Hirschberg (2001). Young adults saw parents, friends, and financial professionals as experts capable of helping them fill gaps in their own knowledge and direct personal experience. Sara, a second-year undergraduate student who worked in a university residence, described why she preferred human sources over document sources when asked about the kinds of resources she would consult when investigating a new financial product or service,

> I would usually go to the bank or call the bank directly because those are where I feel free to ask questions directly and let them know if I do not understand their answers. I have them say things very plain and simple. Maybe I will talk to a current user of that service, but I usually try to limit things to word of mouth. That is easiest for me. I hate reading webpages and automatic voice machines. I really try to talk to people one-on-one in person if possible.

Sara experienced a steep financial learning curve after moving to Montréal for school. She described receiving limited financial mentorship from her parents when living at home in Toronto. As a result, she had limited experience managing personal finances prior to starting university. Sara described relying heavily on financial service providers when seeking financial advice and know-how, with a strong preference for face-to-face interactions. Sara valued financial advice and instructions received verbally from people she considered to be financial experts because of their association with financial institutions, who she saw as possessing the required knowledge and ability to provide personalized advice tailored to her specific needs in accessible ways that reflected her current level of low financial literacy. Sara associated her interactions with human sources with making financial knowledge easier to understand and opportunities to ask questions and seek clarifications not possible when working with documents that codify knowledge explicitly. Thus, for Sara human interaction and communication were important aspects for obtaining financial knowledge or know-how possessed by others that she herself lacks at this stage in her life.

Young adults gravitated towards familiar sources when searching for financial know-how. Kate, the first-year nursing student described earlier who generated personal financial information from personal financial data at the end of every month on a sheet of paper also expressed a strong preference for human sources because of the expertise associated with knowledge. When asked what kind of resources she would consult when answering a financial question, she responded,

> A really close friend, we grew up together, because she is in business. She is doing a bachelors [degree] in business and she works at the bank now, so I just ask her all the questions because she knows. So, she would be my first [choice]. Maybe after that, I would ask my dad because he is really good in finances? But he would just be my second [choice]. And then maybe after that I would just search online but usually [I ask] my friend in business.

Kate’s hierarchy of human sources for seeking financial advice or answers to financial questions was based on their perceived expertise, which qualified them as trusted sources. Experts are recognized as sources of knowledge in organizational contexts and corporations often create directories that map internal expertise originating through personal experience, formal education, and collaboration (Freeze & Kulkarni, 2007, p. 97). Kate’s response illustrated a similar mapping practice, where she identified experts within her personal network and the source of their knowledge. Her friend’s formal education in business and professional experience working in a bank made her Kate’s first choice over her father who she perceived as less qualified despite his personal experience in personal finance. Kate described print-sources via an internet search as her last preferred choice, which reflected the general pattern across participants to make limited use of traditional print resources for expanding their financial know-how. Kate’s criteria for selecting human sources were also influenced by the level of familiarity and intimacy she had with each source. Kate expressed a greater level of trust in human sources that she had long standing intimate relationships with when seeking financial advice and guidance than she did in non-human resources.

Although there was a clear preference for human sources of financial knowledge, young adults still consulted some print resources when seeking financial know-how. When consulting financial know-how in written forms, some young adults described preferring online sources with a particular emphasis on social media, online reviews, and personal testimonies. In such cases, young adults still sought financial know-how that comes from human sources who young adults saw as possessing expertise and experience relevant to the young adult’s financial needs and questions. Cathy, a recent master’s program graduate originally from Winnipeg who decided to stay in Montréal after finding a desirable job in Montréal's gaming industry discussed why social media and reviews were often her preferred source of financial knowledge,

> Whenever I have a question, I will just go to Google pretty much. I have done a bit of research into switching banks so I either look at reviews of what people think or mostly just questions on the bank's website itself also. It really depends on the question, I think. I am fairly trusting of personal reviews, more than reviews from an actual bank, but I would also probably consult my parents and friends also especially when it comes to experiences with certain services. So [my] trusted sources? I guess [are] internet, people.

Although Cathy engages in more typical information seeking using search of public resources online to answer some of her personal financial questions, the resources that she prefers to consult are largely experiential in nature, indicating a connection to the concept of knowledge. Cathy describes how despite consulting institutional sources for some questions, which some might consider an authoritative source in the financial sector, she places a higher value in online reviews compared to banks. Like other young adults, Cathy also includes intimate human sources such as family and friends, who she sees as having experiential knowledge that she seeks to answer financial questions.

The personal financial knowledge of others was an important resource in financial sense making and bridging gaps in one's own knowledge. In the absence of trusted human sources within one's personal network, some young adults turned to the internet as an alternative way of meeting their information needs. Kim, introduced earlier because of the reminding pile incoming financial documents she keeps on her windowsill, discussed the value of experiential knowledge in answering financial questions but with a similar caveat about the importance of selecting the best source for the question at hand, especially when resolving concerns about the security of financial services and digital tools,

> Probably [I would consult] online reviews in concern to safety because computer technology isn't my area of expertise. So, I would want to know whether it is effective but also try to seek out professional reviews [to verify] that you can input your investment information, that it isn’t going to be hacked or go client side and get leaked. If I knew a friend was using it [a financial service or technology], I would ask them, but I doubt you would know that a friend was using a financial thing so online reviews are targeted so that you know what is up.

Kim seeks expert advice in online reviews to fill gaps in her own technical or procedural know-how and overcome limitations within her personal network of experts. Kim also stresses the importance of comparing advice from multiple sources to make an informed decision about financial products and services, including sources with subject expertise such as cyber security, which she views young adult peers as unlikely to possess. Unlike other participants, Kim expresses an explicit distrust in intimate human sources, such as family and friends. For this reason, she sees reviews and other online resources as providing access to expertise missing from her personal network. Despite using online sources to obtain experience-based know-how, participants rarely described taking steps to keep copies of personal financial knowledge obtained through public sources on the internet. In doing so, Kim relies on what Jones (2008) refers to as the “already experienced by me” sense of personal information contained within financial advice provided by others, using a style of interaction that Bergman and Whittaker (2012) refer to as a consumption rather than curation.

A big part of the attractiveness of human sources, including those on the internet, was centered on the belief that they possess informative content not contained within other kinds of publicly accessible information resources, such as those found on the websites of financial institutions. Young adults saw financial knowledge from human sources, which they themselves experience as information, as higher quality and more relevant to the types of everyday financial questions and needs they have. Anastasia, a recent graduate working in the real estate sector in Montréal, described how human sources can be used to fill gaps left unanswered by other kinds of textual resources,

> I would talk to friends because I think my friends are very informed. I think after I talk to them, I would get their advice. This happened once, I went to the website of the [financial] institution and it didn't give me much information so I would go talk to the person at the institution to ask questions or I would call the representative, the person who provides this service.

Like others, Anastasia had a strong preference for human sources with a particular emphasis on the power of dialogue in human-to-human interactions to address issues with the quality and comprehensiveness of print sources. In the context of financial institutions, human sources were seen as possessing a form of know-how supplemental and distinct from an organization's digital and print resources. Human representatives of banks were seen as capable of answering questions that print sources alone could not. Jane, the fourth-year physiology student with plans to move to Europe to start a master's program in physiotherapy introduced earlier when discussing filing as a storage strategy, also discussed how human sources of knowledge can be used to address limitations of publicly accessible financial information resources,

> Some things you can't find on the internet, but people can tell you. Like, if you are an American [like me] coming to McGill, you don't know that there are only Royal Bank of Canada ATMs all over campus. So, there are some things you can't get from the internet and can only get from people or can only get from the internet so I would probably do both.

Jane described using both online and in-person sources of knowledge when answering financial questions. Using the brand of bank ATMs on campus as an example, she identifies an information need that can only be answered by humans who possess financial knowledge based on personal experience. She described the need to consult human sources to know which banking institution might be the most appropriate for her once she arrived in Montréal. In identifying the need to make comparisons and consult multiple sources to answer financial questions, she expressed the belief that human experts hold different but complementary forms of knowledge in comparison to print sources, which should be consulted strategically in combination to address information needs. Jane's cross referencing of human and print sources of personal financial knowledge is a second example of how consumption practices occur in parallel with the curation practices observed with personal financial data described earlier in this chapter. Next, I discuss examples of young adults' own personal financial knowledge from the guided tours.

As Personal Experience

Sometimes young adults described being a source of personal financial knowledge for others such as roommates and peers. As sources of personal financial knowledge, young adults were able to share the financial know-how they accumulate from experts and developed through their own personal experiences. In such instances, young adults described how knowledge can be diffused socially within their personal social networks and how they themselves could become sources of financial knowledge for others. Chris, the recent graduate who kept a minimal paper collection of personal financial records in a divided portfolio on a shelf in his living room, discussed his own experience of being a source of personal financial knowledge during his guided tour,

> I would say I am a huge advocate [of financial record keeping], even towards my friends. My girlfriend, for example, started a budget. I am a big influencer in terms of that. I really believe saving today is really going to help you in the future.

Describing himself as an advocate and influencer, Chris saw himself as possessing expertise gained through a combination of managing his own personal finances, his educational experience in business administration, and his professional experience from working in a financial institution. When describing himself as a source of personal financial knowledge, Chris captured the subjective qualities of knowledge: the values, beliefs, training, and perceptions that are channeled in instrumental or action-oriented ways. His desire to share his knowledge with peers reflects the value he experiences from his own personal financial skills and training, which he hopes will benefit others as well. As such, Chris illustrated how some personal financial management skills, including how to create financial records such as a budget, can be socially diffused within a personal network and transmitted on a peer-to-peer level when passed on in the form of personal financial knowledge. The lack of document forms associated with the oral transmission of personal financial knowledge makes such examples outside of the scope of personal information management, such as Jones (2008) "sent by me" and "already experienced by me" senses of personal information, which require knowledge generated through personal experience to be converted to a document form. The tendency to treat personal information and documents as synonyms renders oral practices outside of the scope of present models of PIM and concepts of PI despite their frequent use in the context of personal finance among young adults.

To summarize the main findings of this section, overall, human sources were preferred in many cases over print or digital documents when seeking procedural know-how, answering questions, and making decisions related to managing personal finances. Humans were seen as sources of knowledge and capable of communicating financial know-how in personalized ways that respond to contextual nuances and the specific information needs of young adults. Access to financial knowledge through human sources was experienced as less laborious than searching through public information resources. Whether obtained from family and friends, banking, or government institutional representatives, or in the form of reviews and personal testimonies online, personal financial knowledge was among the most sought-after resources for answering questions and making financial decisions by young adults. Participants rarely described codifying and curating their own personal financial knowledge in the form of self-authored personal financial documents, but young adults did share the financial knowledge they developed with peers through communication practices. Now I turn to a discussion of examples of personal financial wisdom.

Personal Financial Wisdom

Wisdom is the most elusive concept in the Wisdom Hierarchy. The concept of wisdom is associated with ideas of the application of data, information, and knowledge to anticipate future consequences of actions through a developed sense of human understanding, reasoning, abstraction, intuition, and anticipation (Rowley, 2007). Financial skills evolve over time and reflect the accumulation of financial know-what and know-how, some of it socially diffused and obtained from experts, and some generated intrinsically through practical experience. The accumulation of data, information, and knowledge results in the development of personal financial wisdom. When people can apply data, information, and knowledge to reason, abstract, predict, and anticipate the future, they are said to have wisdom. In the context of personal finance, knowledge entails the ability to apply data and information to answer questions and achieve desired instrumental outcomes, such as financial goals. Often, this was described in the form of a financial value system that participants used to guide their financial conduct. Personal financial wisdom also entails the ability to apply financial data, information, and knowledge to anticipate the financial future in the form of financial forecasts or predictions to achieve desired outcomes. Instances in the guided tours when young adults discussed how past financial experiences enabled them to anticipate future outcomes were coded as examples of personal financial wisdom.

As a Value System

Work and home life were important contexts for learning personal financial skills including the management of personal financial records. The management of finances and financial records in work and home life were therefore contexts that supported the development of personal financial wisdom. Within these contexts, parents were often important role models of personal financial records management and the processes used by many young adults were described as adaptations of those used by their parents. These experiences were examples of transfers of personal financial knowledge that could accumulate and form the basis of personal financial wisdom in the future. Jake, an athletic undergraduate student and aspiring professional actor who lived in Montréal with two roommates, described how experiences from his childhood provided him with the foundation of his value system towards financial recordkeeping practices, which he described during his guided tour,

> My parents run a business so, when I was younger, I would be doing all the accounts receivable-payable for them and their invoice matching, so it was kind of instilled in me from a pretty young age how to keep good documents. My mom was bookkeeping for the business at all times so it would always be around, it was hard to ignore.

Jake attributed participation in his parent’s business as the source of his approach to personal financial records management in young adulthood. Jake credited his mother as an important role model for “keeping good documents”, which became instilled in him as a form of higher understanding. Jake's narrative illustrated how over time and with experience, knowledge becomes internalized in ways that shape one's entire worldview, sensibilities, and value system around financial management. Experiences at home and in work settings furnished young adults with many of the foundational experiences and skills they require to manage their personal financial records independently. The internalization of personal financial know-what and know-how sometimes resulted in the development of an intuitive style of managing personal finances that reflected the development of personal financial wisdom, which will be discussed in the following section.

As an Intuitive Style

The accumulation of personal and practical experience was also connected with the development of personal financial wisdom, which participants expressed as an increased ability to predict their own personal financial behaviors and associated outcomes, such as their spending habits. Instances in the guided tours when participants discussed having enhanced intuition about their financial situation and potential impacts of their financial actions were coded as examples of personal financial wisdom. Dan, the fourth-year engineering student whose long-term storage solution was a pile in a plastic storage bin in the back of his closet, described his journey in developing a new sense of personal financial wisdom over the course of an internship,

> When my internship started, that is when I actually had to start paying for my own gas, paying for car repairs, paying for rent, and paying for food. So ever since then, I started keeping track of stuff because I was making money, but I also wanted to budget it somewhat. So, I started budgeting it but then I was like, "I am making money, I don't care". I had a high level of accuracy at the beginning. I was literally writing every purchase down and then progressively I just started to keep track of only groceries and gas and rent because those were the bigger expenses? I didn't care so much about, "oh I bought a shirt here", it was like $15 compared to rent, which was $400 back then and gas which was like $80

> every week or two weeks or something like that? They're menial costs so I eventually phased them out and then eventually, I was like, this is staying stable the whole way so I might as well just project this, get a rough estimate, and then I do not have to worry about this [spread]sheet anymore. I guess I was getting tired of keeping track of it.

The start of Dan's internship marked an important transition in his personal financial wellbeing. Dan's internship was accompanied by a new-found level of financial income which initiated a period of close financial tracking and budgeting to ensure his new-found income was being used in accordance with his value-system and the expectations he set for himself. Dan described how over the course of his internship, he refined his personal financial knowledge, in the form of the procedural processes he needs to stay on top of his personal finances. He became much more selective about the categories of expenses he needed to track to stay within his means and expressed a greater sense of clarity about what personal financial data he needed to understand his financial situation. Dan's internship experience culminated in an intuitive style of personal financial management characterized by reliance on financial projections and estimates to guide is day-to-day financial behaviors in place of careful and granular tracking. Dan's development of personal financial wisdom impacted the value he associated with capturing personal financial data and generating personal financial information in his spreadsheet. As he developed a greater sense of financial stability and ability to project his future financial situation, he reported abandoning his spreadsheet until the end of his internship and adopting a financial management style that resembles the "balance checking" described by Kaye et al. (2014).

Across guided tours, several other young adults described developing intuitive ways of managing their personal finances requiring minimal interaction and reliance on personal financial records. It was common for these participants to discuss how they simplified their personal financial management processes as they accumulated financial wisdom. Simplification took the form of abandoning labor-intensive strategies for capturing and processing financial data and records. For example, Jane described how budgeting was an important activity at the beginning of her journey towards financial adulthood, which lost its value as she developed greater personal financial wisdom,

> When I started out, I wrote out a physical one, in pencil and pen, I wrote out an actual budget. Now the budget is mostly kept inside my head and the Excel sheets help me figure out whether or not I am sticking to it.

Jane describes her personal financial wisdom as a mental version of her budget that she carries in her mind and uses to interpret the personal financial data she collects and maintains in a spreadsheet tracking log. Jane's description of using her mental budget to make decisions about her financial situation captures the judgment and reasoning that defines personal financial wisdom. Jane can apply this reason and judgement to manage her personal finances more intuitively with less reliance on the authorship of personal financial records to understand her personal financial situation. Cathy, the recent graduate who decided to stay in Montréal after finding a job in the gaming industry, also described relying on an embodied understanding of her personal financial situation, "I try to keep everything in my head and have a routine of checking online banking at least every two weeks kind of thing but nothing else, I don't really write too much down." Personal financial wisdom was a form of financial understanding that young adults described holding in their mind. The abandonment of complex curation strategies was associated with successful construction of financial narratives through the interpretation of personal financial data in their minds rather than within documents through the generation of personal financial information. Several young adult participants described how these sense-making processes changed the value they associated with the creation of personal financial records and curation of personal financial data within self-authored personal financial documents. As young adults felt more aware and on top of their financial situation, the costs associated with careful management of financial records and financial data within documents exceeded the time and effort required with collection upkeep, resulting in a form of benign-neglect (Marshall, Bly, & Brun-Cottan, 2006; Marshall, 2007, 2008a, 2008b; Marshall, McCown, & Nelson, 2007; Lindley et al., 2013). Consequently, they described relying more on personal financial wisdom than personal financial records management to navigate financial situations and shape financial behaviors.

Adoption of an intuitive style of personal financial management did not mean a complete absence of interactions with personal financial data and personal financial records. Instead, it entailed much more limited styles of interaction with financial data and documents. Guided tours captured a few examples of this limited style of interaction, which Kaye et al. (2014) described as use of the financial touch, where people use quick glimpses of personal financial data, most commonly bank account balances and recent financial transactions, to make quick heuristic assessments of current financial situations and the appropriateness of financial behaviors. Examples of use of the financial touch captured by the guided tours were unique to interactions with personal financial data and made significant use of personal financial wisdom for interpretation. Young adults saw personal financial data, such as bank account balances and transaction details, as important sources of feedback on their financial behavior, which young adults obtained glimpses of through use of the financial touch. Success in financial sense-making decreased the value associated with curation of personal financial records but interaction with personal financial data through financial apps and websites continued to satisfy underlying information needs. Use of personal financial wisdom was essential in use of the financial touch as a strategy for managing personal finances, with interactions with personal financial data helping refine their understanding of their financial situation and modify future financial behaviors.

To summarize the main findings of this section, personal financial wisdom was seen to take the form of a financial value system and a progressively intuitive style of managing personal finances that reduced reliance of personal financial records. Financial value systems shaped how participants conducted themselves as financial actors as well as their use of financial records to manage personal finances. These value systems were often developed through interactions with human sources of financial knowledge. Personal financial wisdom was expressed as the enhanced ability to make accurate financial predictions and manage personal finances with limited support from financial records. Although personal financial data remained important for staying within budget, these interactions took the form of use of the financial touch.

Conclusion

Interpretation of the guided tour interview data using the Wisdom Hierarchy resulted in four interrelated but distinct senses of personal financial knowing (1) as content within documents in the form of financial data that records facts about financial events and actions, (2) as new value generated through the organization, processing, and interpretation of personal financial data that answers basic financial questions that young adults have about their own financial situation, (3) as experiential and procedural knowledge that young adults solicit from human sources they see as experts with relevant personal, educational, or professional experience as well as that which they develop themselves through the accumulation of personal experience and practice with managing personal finances, and (4) as an intuitive or embodied way of knowing that evolves and accumulates over time that allows young adults to predict the outcome of their own financial behaviors and manage their personal finances intuitively with limited reliance on personal financial records. Personal financial data was described as the contents of spreadsheets, spending logs, and banking apps and websites. Personal financial information was described as the color coding, categorization, mathematical calculations, and other procedural manipulations that young adults conducted to interpret data, generate new value, and create meaning in the form of personal financial narratives. Personal financial knowledge was described as advice and procedural know-how that young adults sought from human sources to answer questions about managing personal finances or personal financial records. These were normally people they had intimate relationships with such as parents and peers but also included people associated with financial institutions and accessed online in the form of reviews and testimonies. Personal financial wisdom was described as the value systems and intuitions that young adults used to guide their personal financial behaviors and interpret personal financial data. These different senses of financial knowing captured through the guided tours and interpreted using the Wisdom Hierarchy are summarized in Table 12. These different senses of financial knowing exist simultaneously and satisfy distinct needs and functions when managing personal finances.

Table 12

Summary of Deductive Findings

Wisdom Hierarchy Category	Themes	Examples

Data	In Self-Authored Financial Documents In Time and Tasks Management Tools In Tools and Documents	Spreadsheets, Spending Logs Calendars, Planners Apps, Websites, Documents
Information	Organization of the Collection Organization within Documents Inferences from Data	Descriptive Labeling, Arrangement Headings, Color Codes, Grouping Calculations, Visualizations Financial Narratives
Knowledge	As Expert Advice As Personal Experience	Parents, Peers, Professionals, Social Media Home, Work, School
Wisdom	As a Value System As an Intuitive Style	Financial Attitudes, Values, Beliefs Mental Pictures, Intuitions, Predictions.

A central argument made in this chapter is that financial "records" are containers of personal financial "data" but are not necessarily containers of personal financial "information". Instead, personal financial information is new value generated through interpretive processes during which the meaning of the data contained within documents is inferred by the owner. In some cases, young adults commit personal financial information to an explicit form, such as through color coding, categorization, and recording mathematical calculations used to make sense of personal financial data within a self-authored document. The document itself is a container of financial data but it is not information itself in an explicit form. Information is generated through sense-making in the mind of the user.

These overlapping forms of financial knowing become visible through deductive analysis using the Wisdom Hierarchy and offer an opportunity to briefly reflect on the consumption and curation models of personal information management. Young adults were both curators and consumers of “personal financial information” with different levels of the Wisdom Hierarchy satisfying different information needs and goals. Personal financial data and information were curated due to the kinds of interactions young adults had with the contents of self-authored personal financial records. Young adults used financial documents to record, interact, and exploit personal financial data to generate personal financial information that could then be used instrumentally to shape financial action. Young adults curated personal financial data within self-authored financial documents to construct financial narratives that make sense of the financial past and financial future. Young adults could gain novel insights through their manipulation and organization of the personal financial data they curated. At the collection level, personal financial documents supported narrative construction through the evidence value of financial records. Personal financial documents contained evidence of financial events, communications, and financial roles that supported personal financial narratives through consumption of the contents of personal financial records. Documents were both sources of data (e.g., receipts, statements) and containers for the curation of data (e.g., spending logs, spreadsheets) in personal finance.

As we move up the Wisdom Hierarchy, the senses of personal financial information became less tangible, or material in form, and therefore less amenable to records management processes entailed by curation or records management. Personal financial knowledge and wisdom were experiential, embodied, social, and most often were tacitly held forms of personal financial knowing rather than explicit. Personal financial knowledge and wisdom were more frequently described as something consumed rather than curated. Personal financial knowledge was complementary and supplementary to the personal financial data curated within their personal collections. Personal financial knowledge entailed horizontal transmissions of financial know-how and insight born from personal experience, which could in term be shared and exploited by others. Personal financial wisdom was an outcome of successful experiences with managing personal finances, resulting in the ability to generate financial forecasts and anticipate the outcomes of financial actions. Personal financial knowledge and wisdom were distinct from forms of “information” described at the base of the Wisdom Hierarchy because of their tendency not to be encoded in a document form. Although personal financial knowledge and wisdom can be encoded in the form of a document, such as is in the case of the online sharing of personal testimonies, product reviews, or advice, most forms of personal financial knowledge captured by the guided tour interviews were communicated orally and maintained within the memories of young adults without the assistance of writing or documents.

The Wisdom Hierarchy opens the door to expanding both our understanding of personal information in a way that integrates the senses of personal information as proposed by Jones and Teevan (2007) and Jones (2008), which argues personal information is both the information we keep and curate as well as consume. By considering how information can be generated through the documentation process, as well as through the accumulation of practical experiences and social interactions, the primary motivation for managing personal information that emerges is sense-making rather than retrieval. This was seen in the way that young adults dedicated very little time and effort into organizing and describing their personal collections in comparison to the organization and processing of personal financial data within self-authored documents. In the next chapter, I explore this emerging picture sense-making through the curation of personal financial data more closely and provide a detailed analysis of interactions young adults have with personal financial data within self-authored financial documents and through banking apps and websites.

Chapter 6: Curation, Consumption, and the Construction of Financial Narratives Using Personal Financial Data

This chapter explores how the curation and consumption of personal financial data supports the construction of financial narratives. By financial narratives, I mean accounts that interpret events from the financial past to explain the financial present. When young adults construct financial narratives, they draw links between disparate pieces of financial data to generate new value in the form of personal financial information, which allows them to understand their financial situation and see themselves as financial actors. This generation of new value is typically referred to as “knowledge-production” (Talja, Tuominen, Savolainen, 2005). The construction of financial narratives was the central organizing concept of an inductive analysis that explores young adults' interactions with personal financial data.

A specific aim of this chapter is to compare the human-information interactions young adults have with their personal financial data with existing models of PIM. As discussed in Chapter 2, there are currently two conceptual models of PIM referred to colloquially as the consumption and curation models. The consumption model is associated with the work of Jones and Teevan (2007), and Jones (2008) while the curation model is associated with the work of Bergman and Whittaker (2016). This study offers an opportunity to reflect on the ability of each model to comprehensively predict, describe, and explain young adults’ financial data management activities. Next, I provide readers with a summary of the main features of each model.

The consumption model of PIM is composed of three main activities: (1) finding and re-finding, (2) keeping, and (3) meta-level activities (Jones and Teevan, 2007, p. 13). Finding refers to information seeking activities where individuals search for information resources from public sources for inclusion in their personal collections. Re-finding refers to retrieval of information items from within personal collections. Finding and re-finding satisfy needs with information resources (Jones & Teevan, 2007, p. 13). Keeping refers to a decision-making process and action where individuals anticipate the future value of an information item and make a choice to retain it or duplicate it (Jones, 2008, p. 39). Meta-level activities refer to a wide variety of activities associated with the "management" of personal records including maintaining, organizing, managing privacy, securing, sharing, measuring, evaluating, making sense of, and using information items from a personal collection (Jones & Teevan, 2007, p. 15-16). Jones and Teevan's model assumes that personal collections are extensively comprised of duplicates of publicly accessible information items that people keep for their own use.

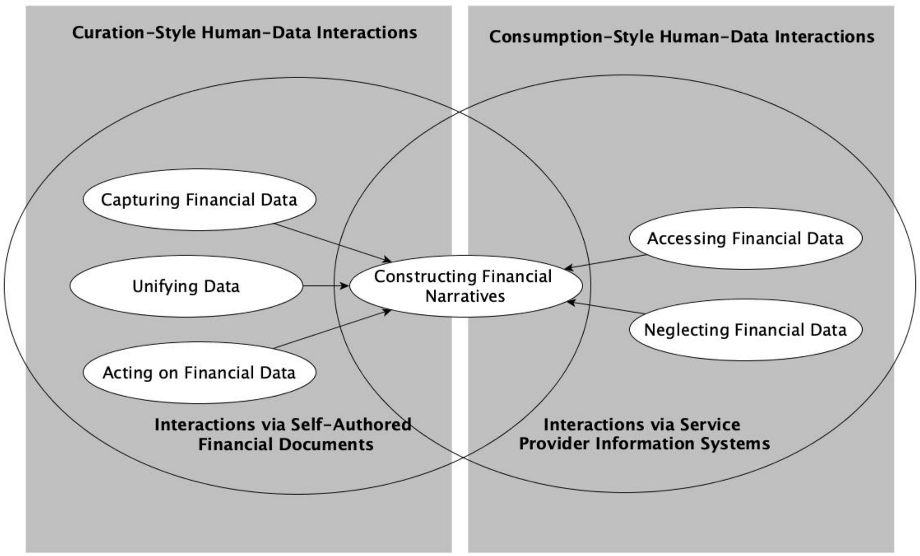
Conversely, Bergman and Whittaker (2016) proposed an alternative conceptual model of PIM also comprised of three activities: (1) keeping, (2) management, and (3) exploitation. Keeping refers to the appraisal process where people make the decision to keep an information item as part of their personal collection based on perceived future value or use of the item (Bergman & Whittaker, 2016, p. 16). Management refers to a self-directed conversation that individuals have with themselves about the future value of an information item, how it is related to other categories of documents within a personal collection, and how the item will be retrieved in the future when needed (Bergman & Whittaker, 2016, p. 17-19). Exploitation refers to the process used to retrieve and use information items from personal collections (Bergman &

Whittaker, 2016, p. 21). Bergman and Whittaker's curation model of PIM assumes that personal collections are comprised of unique information items that cannot be regenerated from public sources.

To reflect on the effectiveness of each model, the guided tour data was analyzed inductively to identify the range of activities young adults reported as part of their interactions with personal financial records. These examples were grouped into the themes. Two categories of personal financial data that young adults interact with to construct personal financial narratives were identified through thematic analysis: (1) self-curated personal financial data that is captured and managed by young adults within self-authored personal financial documents, and (2) system-curated personal financial data that is captured and managed by financial service provider information systems. Across both subthemes, five separate subthemes were identified that capture functions of personal financial documents and information systems that supported financial sense-making: (1) recording or capturing data, (2) unifying data, (3) acting on data, (4) accessing data, and (5) preserving data. The relationships between the central unifying concept, the subthemes, and the functions are presented as a thematic map (Figure 18). Through these five functions, young adults were able to interact with the personal financial data required to construct financial narratives. First, I discuss interactions with self-curated personal financial data, which fit under the umbrella of curation-style human-data interactions.

Figure 18

Thematic Map of Functions of Data for Financial Narrative Construction



Curation-Style Human-Data Interactions

Guided tour interviews confirmed that young adults are in fact curators of personal financial data. Young adults provided several examples of personal financial data that they capture and curate as part of managing their day-to-day personal finances. The contents of digital spreadsheets and paper spending logs were key examples of the kinds of documents young adult participants used to curate and make sense of personal financial data. Through thematic analysis, three curation subthemes were identified: (1) capturing personal financial data, (2) unifying personal financial data, and (3) acting on personal financial data. This section explores how capturing, unifying, and acting upon personal financial data are implicated in the construction of personal financial narratives.

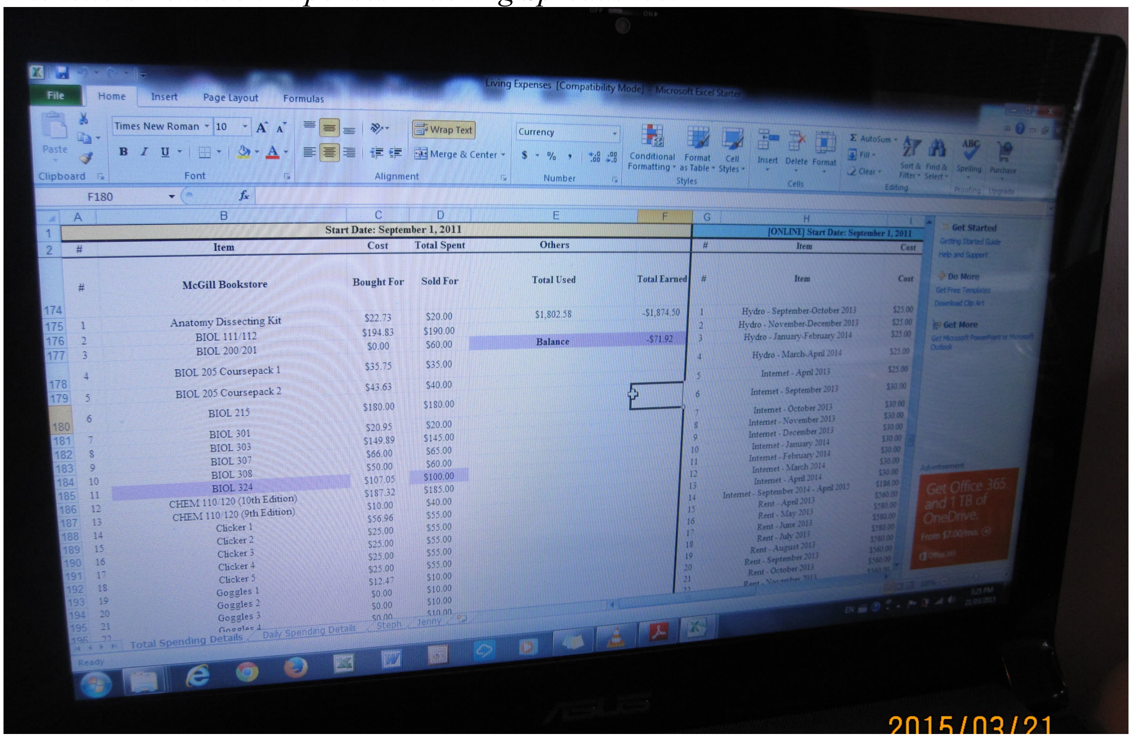
Capturing Financial Data

An important and primary function of self-authored personal financial documents is to create unique records of financial events, experiences, and actions. Personal records are unique when they cannot be recovered from public sources (Bergman & Whittaker, 2016, pp. 26-27). Unique personal financial records were created by young adults by capturing unique financial data about financial events and experiences that do not have any other associated records (e.g., amounts, dates, and purposes of cash transactions) and by duplicating data from everyday financial records “directed-to” young adults (e.g., transaction details contained within receipts, account statements). Capturing was an intentional act of recording personal financial data within a self-authored personal financial document (e.g., spreadsheets and spending logs) to preserve it in the present with the intention of making sense of it in the future. The combination of unique financial data and duplicated financial data made self-authored personal financial documents highly unique and comprehensive personal financial records.

Self-authored financial documents were important spaces for capturing unique personal financial data. Michelle was a fourth-year undergraduate student preparing to graduate and move soon at the time of research. As part of her guided tour, she included a highly unique spreadsheet that she used to capture unique personal financial data about how much she spent on textbooks during her undergraduate studies (Figure 19). During her guided tour, she boasted how she earned more money than she spent on textbooks over the four years of her degree, which she calculated using her spreadsheet.

Figure 19

Michelle's Textbook Expenses Tracking Spreadsheet



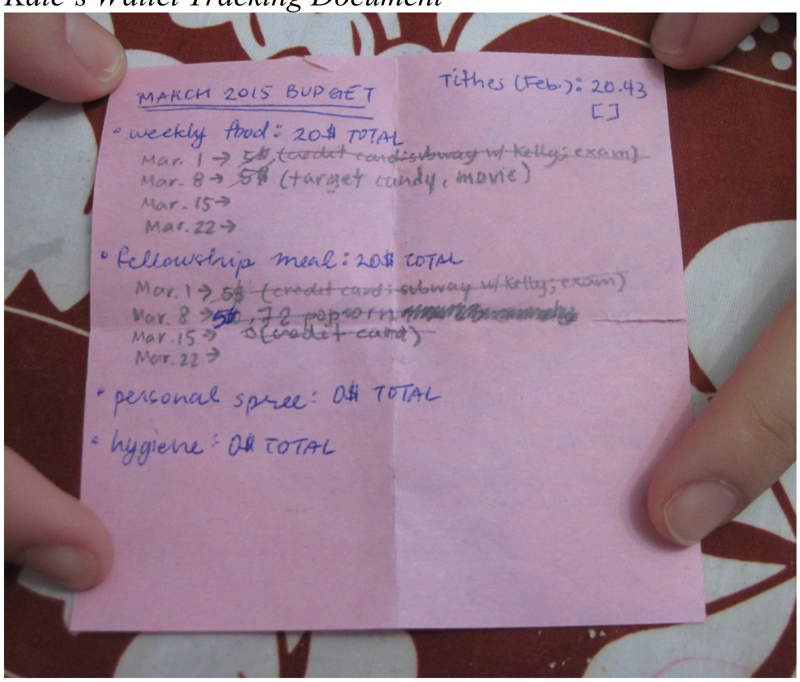
Note. Michelle uses a spreadsheet to track the textbooks she needs for each course, as well as the list price at the university bookstore, the price she pays when she buys used copies, and the price she sells each book for after completion of courses.

Within her spreadsheet, she captured the list price from the university bookstore, the price she paid per book when buying new or second-hand, as well as the amounts she received when she later sold her textbooks to other students after completion of courses. Her spreadsheet was particularly useful for creating unique financial records of cash transactions since she frequently bought and sold used textbooks from other undergraduate students. In doing so, Michelle used a self-authored personal financial document to transform financial experiences (e.g., cash sales) into a document form (e.g., transaction data) that could be used for financial sense-making in the form of constructing a financial narrative about how much she spent or saved over the course of her degree. The resulting narrative was precise and authoritative due to the comprehensiveness and uniqueness of the personal financial data contained within her spreadsheet.

Kate also provided an example of a self-authored financial document that she used to record personal financial data and construct financial narratives. During her guided tour, she showed a small piece of paper that she carried in her wallet to record and track her spending within budgeting categories (Figure 20), which she later used to create a monthly summary report about her overall financial situation (Figure 16).

Figure 20

Kate's Wallet Tracking Document



Note. Kate's paper spending log with budgeting categories that she carries in her wallet.

Kate's small tracking paper also illustrated how one of the primary functions of self-authored personal financial documents is to record financial events and experiences in the form of data to support financial narrative construction. Kate carried a small piece of paper in her wallet to record the items she purchased within each expense category along with the amount spent. On a weekly basis, she crossed out transaction entries after she copied them to her monthly summary report document. Through her small tracking paper, she was able to construct a financial narrative about the things she purchased week-by-week and whether she stayed within her spending limits. Kate's tracking document was also an example of self-directed communication that occurs with personal records. Bergman and Whittaker (2016) argue that all curation is a form of "self-directed communication" between the present self and the future self about the value and future use of personal records (pp. 8-9). Kate's small tracking paper contained a conversation she has with herself about her financial plan, serving as a reminder of the limits she can spend within each category to stay within her monthly budget. Kate's example of self-directed communication differs from Bergman and Whittaker's original formulation in that the subject of her self-communication is not about value and future use of documents within a personal collection. Rather, her self-directed communication is a form of reminding about her financial plan, which she uses to control her spending, as well as a form of reminding about her financial behaviors, which she uses to construct a retrospective financial narrative about how much she spent over the past month.

Interactions with spreadsheets and spending logs illustrated one of their primary functions: to capture and encode financial events experienced by young adults and turn them into data. As data, they could then be used for sense-making in the form of constructing personal financial narratives that reflect accounts of the self to their creators as well as others (McKemmish, 1996; Kaplan, 2000; Hobbs 2001; Beagrie, 2005; Kaye et al. 2006; Cushing 2013). Spreadsheets and spending logs used to record personal financial data were highly unique personal financial records. The source of their uniqueness was the data they contain; a combination of both unique and duplicated data from sources outside of the young adult's personal collection, brought together in a single unique document. Examples from the guided tours also illustrated how self-directed communication occurs through the curation of personal financial data within self-authored personal financial documents. Self-directed communications were centered around reminding rather than appraisal.

Unifying Personal Data

The second subtheme identified through thematic analysis was how self-authored personal financial documents were important tools for overcoming fragmentation of personal financial data. Spreadsheets and spending logs were used as a strategy to bring together financial data that is normally distributed across separate financial documents (e.g., statements, receipts, bills, etc.) and information systems (e.g., financial service providers, household service providers, email inboxes, etc.). As such, self-authored personal financial records also had the function of "data unification".

In the previous example, Kate described how she used her end of the month summary report to consolidate unique personal financial data she collected about her spending on a weekly basis. During her guided tour, she discussed using her summary document (Figure 16) to bring together personal financial data collected from several document sources,

> I just write [it] down because I categorize what I spend on my MasterCard, because I only have [a] MasterCard, so I write down what I spend and also cash, how much I spend. Actually, I didn't count this, but I keep a paper in here [my wallet] to document what is my cash spending, so I use that also with my "snip" of my bill online and place it all in one sheet. So, everything I spend for that month is here and income is on the other side. So

> spending, income and then how much I give [to my church], and then I do income minus what I spend and stuff to see what is left.

For Kate, a sheet of paper is capable of both data unification as well as visual separation, using opposite sides of the sheet to distinguish between incoming and outgoing funds. She regularly captures and brings together data about her monthly financial activities into a single container. This technique used by Kate and other participants to bring together fragmented documents using self-authored personal financial documents is an example of "unified presentation" and unification through a "standard datatype" (Karger & Jones 2006). By bringing data into a single document such as a spreadsheet or a monthly report, young adults achieve a unified presentation by enabling a bird's eye view of all their data in a single location. By converting all data to a single harmonized format when input into a spreadsheet or spending log, young adults achieved unification by standard data type. Guided tours revealed how young adults used self-authored financial documents as an organic solution to fragmentation at the level of data. Unification was achieved by reducing disparate financial records to their respective data to curate it within a single document container.

The unification of data within self-authored financial documents also provided opportunities for appraising the value of personal financial records and making keeping decisions based on their perceived future uses. In her guided tour, Jenny, a third-year economics and computer science student who moved to Montréal from the West Coast, described how she used a spreadsheet to unify and appraise her personal financial data. Extraction of data from an original record impacted the perceived value of the original record,

> I put a little bracket on my Excel sheet because I see it as the storage place where every single piece of information goes. So, whenever I get a credit card statement, I would do my

> whole [verification step to] make sure that everything is okay, [I] reconcile it with my Excel sheet and you know the only thing that will remain is my Excel sheet, that statement just gets trashed. [It's the] same with receipts, anything that is on my phone that I need to update, say I don't have data somewhere, then I put it on a note and ultimately it still gets transferred to my Excel sheet. So that is kind of where everything goes. I would say that is my process.

Jenny describes how she uses a spreadsheet as the ultimate storage solution for her personal financial data. Through process of extracting valuable data from original records, Jenny also created a duplicate record at the data level within her spreadsheet. Jenny used an evaluation process in multiple ways. First, she makes a decision when deciding which content to extract and preserve in her spreadsheet. Second, Jenny makes a second decision about whether to keep or discard an original source document. Jenny's decision-making process for selecting data and discarding original documents is an example of how appraisals of the value of personal records and their contents is part of personal records management processes (Marshall, 2007; Cushing, 2010). Appraisals of value allowed young adults to indirectly control collection volume, offering an indirect means for preventing information overload associated with uncontrolled accumulation of documents (Jacoby, 1984; Whittaker & Sidner, 1996; Fisher, Brush, Gleave, & Smith, 2006; Soucek, & Moser, 2010). Young adults used their self-authored documents, such as their spreadsheets and spending logs, to collect and maintain personal financial data evaluated as having future value, allowing them to discard original sources, such as receipts or monthly statements, which had reduced perceived value after data extractions. The centralizing function of spreadsheets meant that self-authored personal financial records were vested with a high-level of value and authority as the enduring and most comprehensive official record of a young adult's financial transactions.

For some young adults, unification through self-authored personal financial documents was a preservation strategy for personal financial data with perceived future or intrinsic value. Jane, the fourth-year kinesiology student planning to move to Europe for graduate school in the fall, also discussed how her discarding practices were informed by appraisal and data unification processes,

> I have a filing cabinet over here. It has a bunch of sections. I don't tend to keep small receipts, the day-to-day ones. All my financial stuff usually goes into an Excel document and so once day-to-day receipts have been added to the Excel document, they usually just get thrown away. Bigger financial things, like flights or school or things like that all go into the filing cabinet for a certain amount of time and when I deem that they are not a problem anymore, they also get thrown out.

For Jane, appraisals of the value of personal financial records occur together with the curation of personal financial data. Jane's spreadsheet serves as her main preservation strategy for personal financial data, and she reports discarding originals shortly after. Upon extraction, low value personal financial records like receipts reach the end of their document lifecycle and are no longer curated by Jane. This treatment was distinct from how records with perceived secondary or intrinsic value. Original documents for high dollar amount transactions, travel, or educational expenses were perceived as having long term or intrinsic value and therefore justify the time and effort required to curate in their original form. Cushing (2010) argues that archival appraisal is a professional practice that if translated for nonprofessionals, can help people in the domestic sphere make informed choices about the contents of their personal collections. Jane's appraisal and unification process illustrates how concepts of primary, secondary, and intrinsic value from archival theory can be applied successfully by nonprofessionals to support the keeping and discarding decisions they make in the context of personal finance. Furthermore, Jane's discussion of her keeping decision process provided insight into how curation itself can impact the perceived value of personal records. Rather than preserve and curate entire original documents, participants like Jane and Jenny disclosed situations in which they choose to preserve only the extracted data, especially for low value records such as receipts. Consequently, spreadsheets and spending logs become some of the most authoritative, high-value, and enduring records in collections of personal financial records.

Discussions of the functions of self-authored personal financial records illustrated how evaluation, or appraisal, is central to the management of personal financial records, requiring people to consider strategic tradeoffs and implications of keeping and discarding personal information items. For example, Jane describes keeping financial records in their original form for as long as they remain “problematic”. Difficulties with appraising value can lead to overkeeping and uncontrolled accumulation, increasing the curatorial burden experienced by creators of personal collections (Marshall, 2007; Bergman, Whittaker & Falk 2014; Whittaker & Hirschberg 2001). People tend to adopt a “keep everything” approach to cope with the unknown future value of personal records (Jones, 2007; Marshall, 2007; Whittaker, 2011; Bergman & Whittaker, 2016). To avoid negative consequences from inappropriate discarding, people keep personal records “just-in-case” (Moen & Brennan, 2005). Jane described her appraisal process as guided by risk management associated with keeping and discarding. Appraisal based on management of financial risks contrasts concepts of appraisal in the field of personal archiving that are based on functional analysis of future value of records (Cushing 2010). Future uses of personal financial records are often ambiguous and hypothetical, rendering their future value difficult to anticipate in the present (Marshall, 2007). Risk, on the other hand, shifts appraisal away from future use, which is often unknown, towards anticipation of consequences from discarding. Hypothetical negative outcomes of discarding appeared more concrete and easier to anticipate in comparison to potential future uses, such as was the case for receipts for high value purchases that could negatively impact a young adult's ability to make warranty claims or receive reimbursements if decarded prematurely. Appraisal and keeping decisions based on management and mitigation of risk, rather than anticipated future use, might explain why some people "over keep" and adopt a "keep everything" approach.

Time management tools such as calendars, planners, and to-do lists were also seen as data unification solutions by some participants. Data unification is an important function of time management tools for personal finance, allowing young adults to see relationships between personal finances and other activities in their day-to-day lives. Claudia, a fourth-year undergraduate student who relocated from Rome to Montréal, reflected on how her calendar was an important location for unifying personal financial data with time management data,

> I find it [using a calendar for personal finances] helpful because it means I guess, it kind of puts everything in the same place as in events that are coming up and often events are tied to some kind of monetary thing. So, if I am going to go out with my friends on a Friday night, I also need to be aware that I am probably going to spend money that night. So, if I know my pay cheque is coming in the day before, I know I can spend this much when I go out with my friends. So, it definitely helps to have those together I find. Also, especially recently, I have been trying to centralize where all of my information is coming from to remind me about things and scheduling just because it is easier.

For Claudia, calendar events are closely connected with financial events, making the time and event data an important resource for financial sense-making and constructing financial narratives in the form of financial plans. Claudia uses her calendar to construct narratives that articulate the relationship between activities and their future impact on her personal finances. Like self-authored tracking documents, time management tools are valued as a solution for addressing fragmentation by bringing event and financial data into a unified space, which is essential for constructing coherent and accurate financial narratives. Cindy echoes similar sentiments about her agenda as a unifying space for forms of personal information that intersect with personal finance,

> If I didn't have an agenda, my life would be all over the place. I have used one as long as I can remember, and I like it because there are so many different compartments of my life, and they are all centralized in there.

Cindy describes how the value derived from data unification in time management tools goes beyond personal finances. Instead, she sees data unification in her calendar as important for creating order in her life in general. Her calendar gives her life a greater sense of coherence by addressing the challenge of fragmentation and the need to track important details across document containers. The use of time management tools for personal finance reinforces findings in previous work about reminding and task management as important functions of personal information (Whittaker & Snider, 1996; Bellotti et al., 2002; Bellotti et al., 2003; Bellotti et al., 2004). When asked about reminders, Kim disclosed how the calendar app on her phone was an important tool for overseeing and managing the completion of various forms of time-sensitive paperwork,

> So, I have this really cool app called Wunderlist. It syncs across all my devices. There is a Chrome [browser] extension as well so that way it is always accessible to me so whenever I need to add anything, it goes straight there, I just need to open a new tab and it is right here and there is like different categories but there is also like an actual app, like this kind of version for it and it is also on the phone so I use that for financial information. So, for example, apply for student aid. And you can set deadlines on it and everything, so I like to use this, it works very well for me.

Kim's use of a reminder app is an example of how tools used for PIM are usually optimized for other purposes, such as is frequently seen with email inboxes that become a de facto preservation strategy for personal documents (Ducheneaut & Belotti, 2001). The centralizing function of time management tools and their flexibility as containers make them attractive "habitats" for many different genres of personal data. Ducheneaut and Belotti (2001) observed that personal information habitats like email inboxes can become easily overloaded and ineffectual when appropriated for unintended purposes such as the storage and preservation of personal records rather than communication. Unlike observations made in previous work about detrimental effects of information overload in email inboxes, no participants expressed challenges with the effectiveness of time management tools when used for financial tracking and planning.

The use of self-authored personal financial records to unify data illustrated enduring challenges with fragmentation in personal collections, referred to as the "project fragmentation problem" (Bergman, Beyth-Marom, & Nachmias, 2003, 2006, 2008; Bergman et al, 2008). Previous work proposed unification solutions at the collection level, such as through improved search capabilities across a personal collection (Fertig, Freeman, & Gelernter, 1996; Dourish et al. 2000; Dumais et al., 2003), additional use of structure within a collection for more detailed organization to support retrieval (Bellotti & Smith, 2000), as well as project-based organization within a single hierarchy level to bring together related documents (Bergman, Beyth-Marom, & Nachmias 2008). Guided tours with young adults captured how self-authored financial documents can also serve as data unification and preservation strategies, which simultaneously prevent over accumulation by reducing the appraised value of some personal financial records after extractions of data. As data unification solutions, spending logs and spreadsheets were used by young adults to aggregate financial data into a unified space and common format. Previous works also note the need for unification (Krager & Jones 2006; Krager 2007) or integration

(Bergman, Beyth-Marom, & Nachmias, 2003, 2006; Bergman et al, 2008) of personal information but did not consider documents as containers that unify data.

Acting on Financial Data

The personal financial data young adults recorded in their time management tools was strongly associated with the function of initiating and executing financial actions. Young adults saw time and task management tools as convenient locations for capturing personal financial data they intended to act upon in the future. Reencountering personal financial data in calendars and to-do lists was as initiator of intended financial action. This section explores the action generating function of personal financial data. Cindy, who showed her highly sophisticated color-coding system in her agenda (Figure 4), described how financial reminders fit into her coordination of financial tasks,

> I would kind of write a notification almost, like anything related to finance, if I have rent due or for example, if I know that my bus pass will run out at a certain time and I need to go buy a new one, or if I am expecting a bill from work at this time or whatever, the first step is writing it in my agenda.

Cindy's agenda was an important tool for reminding, planning, and then executing financial actions. Reminders, in the form of personal financial data, supported a narrative construction process through which future financial tasks become explicitly known, contextualized in relation to other competing demands, and then actionable at the most appropriate time. Maria, a first-year graphic design student living in Toronto, also described the role of reminder for coordinating financial action,

> I will set a reminder that I get a specific bill on a certain day of the month and that I have to pay it, like within a certain time frame. Or I will set a reminder for myself to transfer funds over from one account to another for whatever reason. Or like for when it is payday.

Like Cindy, Maria uses her calendar to remind, plan, and execute financial actions, reflecting the action generating potential of personal records identified by Cole (1982). Maria's reflection on her use of reminders illustrated how financial reminders were an important part of coordinating financial action and sequencing those actions within an overarching narrative of time. Maria described reminding herself of when she needed to execute financial actions herself, such as transferring funds between accounts or paying bills, but she also created reminders about when financial actions executed by others will occur, such as the date a new bill is expected or when she will receive new funds on pay day. As a result, time management tools were important for making sense of financial events and coordinating appropriate responses in the form of financial action, reflecting the task management function associated with personal records and the repurposing of digital tools for managing personal documents (Whittaker & Snider, 1996; Bellotti et al., 2002; Bellotti et al., 2003; Bellotti et al., 2004).

Participants described how evaluations of the value and future uses of personal financial data and records simultaneously facilitated forms of self-reflection while generating needed financial action. Rachel, the real estate agent from Toronto also talked about using reminders in time management tools as important strategies for initiating financial actions, "I leave notes to myself in my agenda at times, like to remind myself to do things, [to] make payments [and] stuff like that." Rachel's use of reminders as prompts for initiating financial actions reflects a similar process as Cindy's. Both Rachel and Cindy's use of reminders to initiate financial actions were interpreted as examples of Bergman and Whittaker's (2016) conceptualization of PIM as a self-directed conversation across time. According to Bergman and Whittaker, to successfully exploit personal records, users must recall how personal information was originally encoded and described at the time of appraisal to retrieve it. The conversations Rachel, Maria, and Cindy have with their financial reminders are not retrieval-centric but rather focus on execution of action upon reencountering the record within their self-authored personal financial record. They use the organizational structure built into their time management device to ensure they reencounter their reminder at the time when the financial action must be completed. To successfully execute the financial action, they still must be able to decipher the original meaning of the personal record from the time it was encoded. The ability of young adults to successfully execute financial action seemed dependent on the success of the self-directed financial communication that takes place within time management tools.

Guided tours revealed that reminders were capable of reminding, planning, and executing financial records management actions in addition to financial actions. Young adults described using time management tools to support their curation of personal financial records as part of their financial management workflow. Claire, the first-year student who kept a spending log in a paper notebook, described in her guided tour how reminders also supported her management of a collection of personal financial records,

> I have a note section on my phone that if I spend something in cash, I will put it on my phone so that I will remember to put it in that [spending log] notebook. [Other] reminders, I keep out on my desk.

Although Claire preferred to manage her personal finances using paper records, she disclosed using her phone to capture financial transaction data when away from her paper spending logbook. In this example, personal financial records are both reminders of past financial events (e.g., a financial transaction) but also reminders that motivate and initiate records management actions in the future, such as updating her spending log. Claire's description also captures the reminding function of records when located strategically within an information environment. Claire describes leaving other paper-based reminders out in the open on her desk close to her spending logbook to remind and motivate completion of tasks. This was an example of the reminding function of piles, which are often located strategically within a personal information environment to support reencountering and initiation of action (Malone, 1983).

Information scraps such as reminders also supported the execution of financial actions. Kim, the soon-to-graduate undergraduate student who took pride in self-financing her university education, also discussed how she supported the management of her personal financial records when asked about her use of reminders.

> That is my phone's job. There is month to month rent. When I need to remember to file paperwork or do paperwork, then I put a reminder on my phone. Right now, I have a lot of reminders because of tax season, [and] like [for] some visa application stuff. I have some name change documentation going through so there are a lot of reminders on my phone right now.

In addition to keeping track of her rent payments in her phone calendar app, she also used her time management tool to plan and coordinate her personal financial records management for activities such as processing and filing financial and governmental paperwork. Reminders were important for coordinating and executing tasks across domains of human activity, including records management behaviors. Time management tools were valued for their ability to capture unique personal financial data from financial experiences, for bringing different kinds of information together in a centralized space, and for sense-making through the construction of temporal narratives that could support future action. Kim's example also highlights the intersection of personal finance with many domains of human life and activities that are managed simultaneously through personal records. In time and task management tools, unified personal data created representations of identity, activity, and relationships that reveal and reflect inner character and intimate aspects of people's lives, associated with the evidencing and identity construction functions of personal records (McKimmish, 1996; Kaplan, 2000; Hobbs, 2001; Kaye et al., 2006).

Although time and task management tools are not personal financial records in themselves, several participants disclosed how they integrated time and task management tools into the management of their personal finances. Time management tools were a common location for recording details about upcoming and completed financial events, tasks, and actions. PIM researchers have long recognized the reminding functions of personal records (Malone, 1983; Barreau & Nardi, 1995) as well as their action generating potential (Cole, 1982; Bergman & Whittaker, 2016). Personal financial data in time management tools was a form of "action information" used to coordinate and complete financial tasks. Now I turn to a discussion of interactions with personal financial data captured and curated by information systems rather than by young adults in self-authored documents.

Consumption-Style Human-Data Interactions

Not all personal financial data and documents that young adults interact with regularly are self-curated. Many financial and household service providers provide their clients with online portals for interacting with unique personal financial data and records. In addition to the personal financial data managed in self-authored documents and time management tools, young adults interacted with financial data curated online by financial and household service providers on their behalf. Interactions with system-curated personal financial data clustered around two distinct subthemes: (1) accessing personal financial data, and (2) neglecting personal financial data. This section explores interactions with personal financial data and records curated by service provider information systems and the ways it is used in financial sense-making.

Accessing Financial Data

Service provider information systems are access points for personal financial data curated by service providers via their proprietary information systems. Accessing personal financial data through financial service provider's websites and apps was a common occurrence. Young adults found banking apps and websites to be important tools for monitoring financial events and getting glimpses of their financial situation using the financial touch. Use of the financial touch in brief interactions with personal financial data gave young adults snapshots of their personal financial situation. Through banking apps and websites, young adults accessed both personal financial data (e.g., data about recent transactions, account balances, etc.) and personal financial documents (e.g., monthly statements, contractual information, or terms of service, etc.). This made household service provider information systems common and frequently interacted with sources of personal financial data and documents. Young adults provided several examples of these kinds of interactions during the guided tours.

One of the main functions young adults associated with service provider information systems was accessing personal financial data and records. Dan, the fourth-year engineering student who maintained an archive of financial documents in a storage bin in the back of his closet, discussed how he routinely accessed personal financial documents through his online banking, “I am with National Bank, and they send me a notification that I have received an e-statement, but I have to log onto the site itself to see it.” Anastasia, the recent graduate working in real estate, also reflected on how accessing personal financial records through banking platforms was a regular part of how she managed her personal finances,

> I know when the statement [is ready], the billing period is over, and I go check my statement online whether it is through the phone or the bank website. I would see the date that I have to pay my bills. So, I decide whether I am going to do it now or whether I am going to wait.

Financial service provider websites and apps were often treated as repositories of personal financial data that can be accessed on a routine basis and used as needed. Since service provider information systems do not push data or records directly to young adults, as is the case with paper records directed to young adults as mail, interactions with the information system itself via a web page or app is required to access and interact with the personal financial data located within the portal. As a result, service provider information systems were important tools for accessing personal financial data and records. Online personal financial data was treated as “information about us” and “information we experience, typically interacted with through consumption rather than curation (Jones & Teevan, 2007; Jones, 2008).

Service provider information systems created fragmentation within collections of personal financial records. Fragmentation occurs at the collection level when young adults chose not to duplicate and keep records made available to them via service provider websites and apps. Aware of this fragmentation, some participants who were avid users of online banking and e-billing options maintained self-authored financial records for curating personal financial data as a unification solution. Unification was achieved by copying valued personal financial data from service provider information systems into self-authored personal financial documents. Arvy, a recent graduate who worked as a sales analyst in Montréal, provided an example of how he accessed personal financial data through his banking app at the same time as maintaining self-authored financial documents in parallel, causing fragmentation in his collection of personal financial records,

> In terms of my budgeting, I think that I would be checking it on the app daily, just generally checking my deposits and withdrawals. And also, whenever dealing with a friend or expense when a thing has come in, I put it in the Excel sheet. When my salary stub comes in and every two weeks, I always check my tax-free savings account to make sure it has been updated.

Arvy uses his banking app to monitor the movement of funds in and out of his bank account, which is an example of use of the financial touch (Kaye et al., 2014). Through use of the financial touch, he accesses personal financial data curated by financial service provider information systems to maintain a general understanding of his overall financial state. In parallel, he maintained a self-authored spreadsheet to record data about financial events not automatically captured by his financial service provider's information system, such as the cash he exchanged with friends. As a data unification solution, Arvy's spreadsheet shifted the kinds of interactions he had with his financial service provider's information system, using it to access and verify personal financial data such as the transaction amounts he expected to be deposited or withdrawn from his accounts. Arvy chose not to create a completely unified collection of personal financial records, indicating that complete data unification is not always the desired outcome of personal information managers. Instead, he preferred to access some of his personal financial data as needed through his financial service provider's information system, which allowed him to avoid downloading and managing all his personal financial records himself. Fragmentation had strategic advantages when financial service provider information systems create time and labor savings, allowing some young adults to "outsource" the preservation of some portions of thei financial data and documents to financial service providers.

The financial data accessed through service provider websites and apps reflects Jones and Teevan's (2007) and Jones' (2008) "about us" and "information we experience" senses of personal information. Service provider apps and websites were treated as extensions of young adults' personal spaces of information where clients can access unique financial data about their recent financial behaviors without taking on curatorial responsibility for that data. Most participants readily adopted personal spaces of information hosted by service providers for accessing and interacting with personal financial data. The ability to access personal financial data through service provider information systems resulted in fragmentation of collections of personal financial system across self-curated and system-curated portions of their personal space of information. The next section discusses the impact of service provider information systems on the preservation of personal financial data and records.

Neglecting Financial Data

Young adults expressed a high-level of trust in financial service provider information systems for providing long-term access to personal financial data. As such, service provider information systems were often treated as preservation solutions for the data they automatically capture. Arvy's hybrid strategy of curating personal financial data within a self-authored document in addition to accessing system-curated data through websites and apps illustrated a trend observed across several guided tour interviews. Some young adults appeared to use financial service provider information systems to capture and curate significant portions of their collections of personal financial records. Evidence of this strategy was seen when young adults admitted to rarely downloading financial documents from service provider information systems, instead preferred to access data directly as needed. Reliance on service provider information systems to capture and curate represents a passive low-effort preservation strategy that reduces curatorial burdens associated with active curation by individuals. When the capture and curation of personal financial data and documents is “outsourced” to a service provider’s information system, the primary style of interaction shifts from self-capture and curation to accessing and consuming data and records maintained by the financial service provider instead. This section explores the final function identified through thematic analysis, the use of service provider information systems as a preservation strategy.

Not all participants put their trust in service provider information systems to provide continued access to their personal financial records. In such cases, participants preferred self-curation for their entire collection of personal financial records. Self-curation ensured future access to personal financial records while still making use of information technologies and personal computers to assist with the long-term preservation of personal financial documents. For example, Kim, the upcoming graduate who kept a pile of incoming financial documents on her bedroom windowsill as a reminder, spoke explicitly of her use of a cloud-based digital storage solution to ensure long term access to her digital personal financial records,

> I put everything into Dropbox because on Dropbox it is backed up into an external drive, but I am not going to back things up onto an external drive every day, so on Dropbox,

> everything uploads automatically by itself, so I don't have to worry about things crashing. If my computer were to crash, I would be totally fine.

In the above example, Kim uses cloud storage to automate the preservation of her digital personal financial records and expresses confidence in digital formats for ensuring long-term access to valued personal financial records. At the same time, Kim took an active role in curating her personal financial records rather than fully relying on financial service provider information systems to preserve and ensure long-term access. Instead, she used an external hard drive to prevent catastrophic loss from hardware failure and took advantage of the auto-synchronizing feature built into her cloud storage service provider as a redundancy, to automate portions of her preservation strategy and reduce labor costs associated with maintaining her personal collection. Kim's approach illustrates how participants valued information systems for reducing the time and effort required to manage collections of personal financial records and retain access to valued personal financial data. Kim's approach differed from other participants in the way she considered the risk of loss of personal financial data in digital formats, resulting the use of both locally stored and cloud storage to ensure long-term access to her digital personal financial records.

The trust young adults had in service provider information systems as a preservation strategy was reflected in how young adults described their decision-making processes for keeping and discarding records. In Rachel's guided tour, she described how her decision to keep and preserve records was influenced by availability of digital copies accessible through service provider information systems. "All of my banking statements, for example, are digital so those are not pieces of paper that I would hold on to physically because I can access them online, so I don't need to keep those." Rachel illustrates how some participants trusted and intentionally leveraged financial service provider information systems to manage personal financial records on their behalf. Rachel trusts her financial service provider to curate and preserve the records she normally accesses through their customer portal and no longer sees the need to self-curate copies of personal financial records that are available to her online. Consequently, Rachel maintained neither physical nor digital copies of any "born digital" financial document that originated from sources outside of her collection. Use of financial service provider information systems as a preservation strategy was attractive because of minimal time and labor costs in comparison to those associated with self-management. Use of information systems to curate personal financial records was attributed with a sense of ease and convenience, illustrating how the principle of least effort can influence long-term preservation strategies in personal financial information management (Zipf, 2016). Gina, a second-year cognitive science undergraduate student who preferred to manage most of her personal financial records digitally, talked about the ease of using service provider information systems as a preservation strategy,

> Sometimes it [a downloaded copy of an e-bill] goes into that bills folder that I had, or if for instance my roommate wanted a copy of it one time, so I sent it to her. Otherwise sometimes I don't download them because they are so easily accessible, you can just click and view it online.

Although Gina occasionally downloads and curates copies of her e-bills on her computer hard drive, she describes tending to let financial service provider information systems preserve and curate a large portion of personal financial records on her behalf. Her decision not to curate digital personal financial records is based on her experience that those records remain accessible and easy to access through service provider customer portals. The decision to access rather than curate offers insight into the impact of service provider information systems on appraisal and the valuation of personal financial data. Clicking and accessing financial records through customer portals is a lower effort approach than self-curation, which involves accessing downloading, naming, and organizing copies of files available online. Gina reveals that using service provider customer portals as a preservation strategy has certain limitations, such as the difficulty of sharing records with others since portals restrict access to one person by default. Sharing the record requires Gina to act as the designated records manager of her household and mediate her roommate's access to personal financial records and data as needed. Therefore, service provider information systems do not eliminate all curation related tasks and roles despite reducing some of the time and effort required of young adults for the preservation of personal financial records.

Trust in service provider information systems was associated with a strong belief in their ability to preserve personal financial documents over the long-term. This belief was expressed in the notion that online personal financial records are permanent and accessible forever. This perspective was expressed by several participants. For example, Jake, an undergraduate who embraced e-billing and digital personal financial records to reduce the amount of paper he needs to curate, described digital records as enduring indefinitely in his collection, "I don't have many [financial documents] to be keeping as a student so the ones I am receiving now are all online, so I keep them forever." For Jake, curation by service providers in digital formats was seen as a viable long term preservation strategy that ensures permanent access. Jake was not the only participant to refer to service provider curated records as existing "forever". Jenny, a third-year economics and computer science student, also expressed a strong belief in the long-term durability and accessibility of digital records curated by service providers during her guided tour while discussing her discarding habits,

> I think they are there forever because they are all online, right? But in terms of receipts, as soon as they clear the month, I toss them. If they are on the computer, like the budgeting stuff, it is stored forever. Paper records, [I keep] like a year or two, two years.

Jenny's description of her discard process revealed how the perceived durability of digital records impacted their appraisal. For Jenny, digital records, regardless of whether they were self-curated or curated by service provider information systems were seen as kept forever while paper records required periodic discarding to prevent overkeeping. Jenny saw digital records as outside of her normal appraisal process, no longer requiring consideration of their long-term value. The permanency associated with digital records exposed an underlying belief about digital formats as different from paper records, resulting in two distinct sets of curation styles and lifecycles for digital and paper records. Paper records, like receipts, had a clear end point in their lifecycle requiring appraisal and discarding to prevent excessive accumulation of records with no future or intrinsic value. Digital records, on the other hand, were perceived to have no end-point in their lifecycle, which endure in perpetuity on service provider information systems, thus freeing young adults from appraisal and discarding practices for the digital portion of their personal collections.

The tendency to trust service provider information systems to curate and preserve born digital personal financial records was a form of optimism, opportunism, and benign neglect, where owners fail to engage in curation and preservation, which increase the risk of experiencing catastrophic loss of portions of their personal collections (Marshall, 2007b; 2013). Guided tours revealed how young adults opportunistically leveraged service provider information systems to preserve personal financial records, which could be interpreted as a form of benign neglect when young adults have limited experience with the management of digital collection of personal financial records in general. Young adults rarely considered the possibility of losing access to records maintained by service provider information systems, which was contradictory to appraisal based on risk management and just-in-case keeping decisions observed for self-authored personal financial records. Next, I turn to the central organizing concept.

Constructing Financial Narratives

Interactions with personal financial data were directed towards the construction of personal financial narratives. Personal financial narratives were interpretations of events from the financial past that explain the financial present and allow young adults to shape future financial actions. Data contained within self-authored personal financial documents and service provider information systems were used in the construction of personal financial narratives, with the interactions described in the previous sections used to make sense of personal financial data. In addition to constructing timelines about financial events, data within self-authored personal financial documents allowed young adults to tell stories about themselves as financial actors as part of reflexive processes embedded in everyday financial management. The collection, organization, and interpretation of personal financial data in self-authored documents served as a context for having conversations with the self about one’s financial conduct, providing important feedback that could be used to generation action towards financial goals and modify future financial behaviors. Examples of construction of personal financial narratives in the dataset highlighted the identity construction function and capability of personal records (McKemmish, 1996; Kaplan, 2000; Beagrie 2005; Kaye et al., 2006; Douglas, 2015; Douglas, 2018).

The construction of financial narratives entails ascension up the wisdom hierarchy through sense-making processes. Sense-making is defined as how people construct "sense" of their worlds, including their information needs and uses (Dervin, 1983, p. 3). Sense-making encompasses both internal (e.g., cognitive, emotive) and external (e.g., processes and actions) processes or behaviors that enable a person to "construct and design his/her movement through space-time [and] [s]ense-making, thus, is [a form of] communicating behavior" (Dervin, 1983, p. 3). Sense-making was possible through interactions with the personal financial data that young adults curate themselves in self-authored personal financial documents like spreadsheets and spending logs. Sense-making was also possible through interactions with financial and household service provider information systems that offer client portals where their customers can access personal financial records originating from the service provider without acts of curation on the part of young adults. As a form of sense-making, the construction of personal financial narratives through interaction with personal financial data. Jones and Teevan (2007) recognize sense-making and use of personal information as a meta-level activity of PIM, characterized by organization, interpretation, determination of relevance, and decision-making in our everyday lives (pp. 16-17). Bergman and Whittaker (2016) see PIM as a form of self-directed communication across time about the value and meaning of personal information (pp. 8-9). As a form of self-directed communication, the criteria that a person uses to keep, store, organize, and later retrieve and use personal records is conceptualized as a form of subjective communication between the owner at time of keeping and storage and the owner at time of retrieval and use (Bergman and Whittaker, 2016, pp. 8-9). Both leading conceptual models are compatible with

Dervin's concept of sense-making, and in combination capture the internal, external, and communicative qualities that define sense-making.

Spreadsheets and spending logs were important containers of personal financial data in collections of personal financial records. Creating and updating spreadsheets and spending logs was an important human-information interaction that young adults had with personal financial data that resulted in the generation of new understandings of their financial situation and themselves as financial actors. The generation of new financial understanding was interpreted as a form of sense-making (Dervin, 1983, 1998).

The significance of logbooks for the purpose of tracking and understanding was also recognized in personal health information management. Piras and Zanutto (2010) found that logbooks were a central category of records in collections of personal health information, which patients used to track and monitor changes in health conditions, understand and navigate health challenges, and communicate with healthcare providers. Within spreadsheets and spending logs, young adults recorded, preserved, and constructed financial narratives with personal financial data as part of managing their day-to-day finances. Spreadsheets and spending logs were important tools for recording data, unifying data, generating novel information from data, and using that information to support financial action. The management of personal financial data in spreadsheets and spending logs was associated with the purpose of financial tracking and generating understanding of their financial situation across space-time. First, I discuss interactions with personal financial data in self-authored personal financial documents and their use for constructing financial narratives.

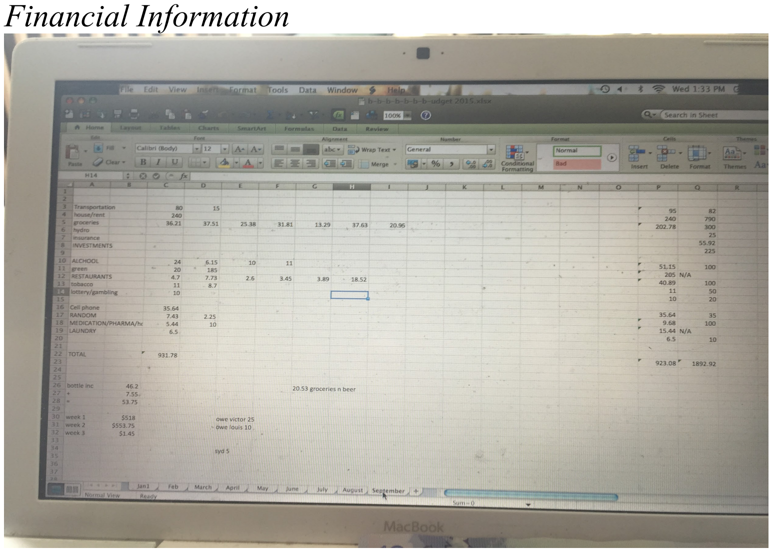
Constructing Financial Narratives with Self-Authored Personal Financial Documents

Structuring data within a self-authored document was an important technique for constructing financial narratives. Almost all examples of self-authored personal financial records such as spending logs and spreadsheets used structural elements to organize personal financial data within the document. Structural elements observed across guided tours included headings, grids, underlining and circling, and color codes, which were used to describe and order data. Examples of some of these techniques were presented in Chapter 5. The organization of data within a self-authored document helped young adults interpret and generate new meaning from personal financial data, suggesting how processes of knowledge production are embedded in the curation of personal financial data. The structuring of data enabled further processing that could result in usable forms of personal financial information that generate financial action and enhanced understandings of the self as a financial actor. These processes within documents occur alongside identity construction processes that occur at the collection level through curation, specifically selection and arrangement of documents within personal collections (McKemmish, 1996; Kaplan, 2000; Kaye et al., 2006 Douglas, 2015; Douglas, 2018).

Structuring data within self-authored documents was part of the interpretive process that young adults used to generate personal financial information. Examples included the sums that young adults calculated by adding up spending across the different categories of expenses that they tracked as part of managing their day-to-day or month-to-month finances. As a form of exploitation (Whittaker and Bergman, 2012), the interpretation of personal financial data to create personal financial information was essential for the construction of personal financial narratives. Across guided tours, young adults presented several examples of how they used personal financial data that they capture and structure to generate personal financial information that answered financial questions and source of feedback about their financial conduct. During Chris' guided tour interview, he presented a spreadsheet that he uses for tracking monthly expenses across different categories of spending (top left) as well as money owed to peers (bottom left) (Figure 21). Each cell adjacent to his category labels contains numeric data representing amounts for individual transactions within the corresponding category. Chris also uses his spreadsheet to calculate monthly totals for each category of spending he tracks (top right). At the bottom, Chris uses his cursor to highlight how he creates a new page within a single digital Microsoft Excel file for each month of the calendar year within a single digital file.

Figure 21

Chris' Spreadsheet for Recording Personal Financial Data and Generating Personal Financial Information

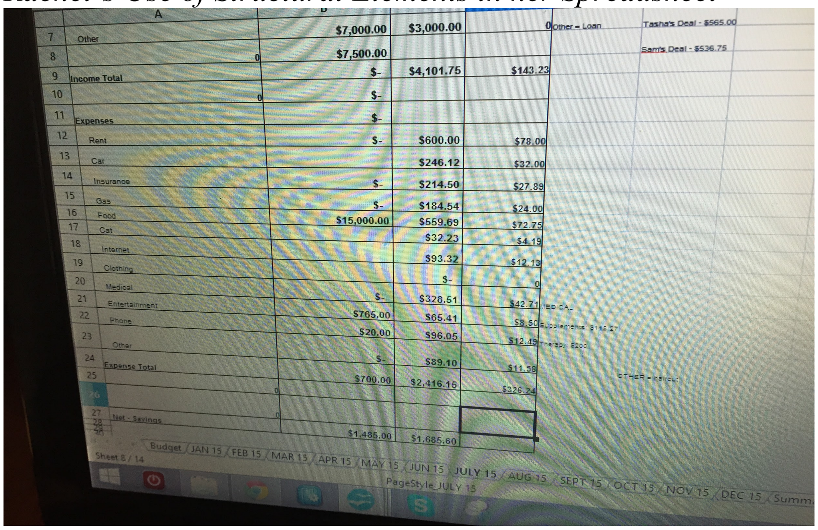


Note. Chris tracks expenses, amounts owed, and monthly totals for the categories he tracks in a spreadsheet with minimal use of structural elements.

Chris' spreadsheet was an important tool for generating a financial narrative about his month-to-month spending, which he used to understand and track changes in his financial situation. Within each sheet, Chris brings together all the data he needs to construct a narrative about how much he spent and earned during the month. Across the different sheets he produces for every month, he can construct an increasingly comprehensive narrative that tells a story about his personal financial situation and past behaviors across time. Rachel showed a similar spreadsheet that she used to construct retrospective monthly summaries of her financial situation during her guided tour (Figure 22). Like Chris, Rachel created a new sheet every month, which allowed her to incrementally build a narrative for the entire financial year. Unlike Chris, Rachel made much greater use of structural elements within her spreadsheet to organize and separate the personal financial information that she produced from personal financial data. These included grids and headings, which were used to organize and describe data in more explicit ways. Examples of information scraps can be seen on the right of her table, which she maintained in parallel as reminders that helped in her narrative construction. These scraps contained dollar amounts that she anticipated receiving in the future after the closing dates of upcoming real estate transactions.

Figure 22

Rachel's Use of Structural Elements in her Spreadsheet

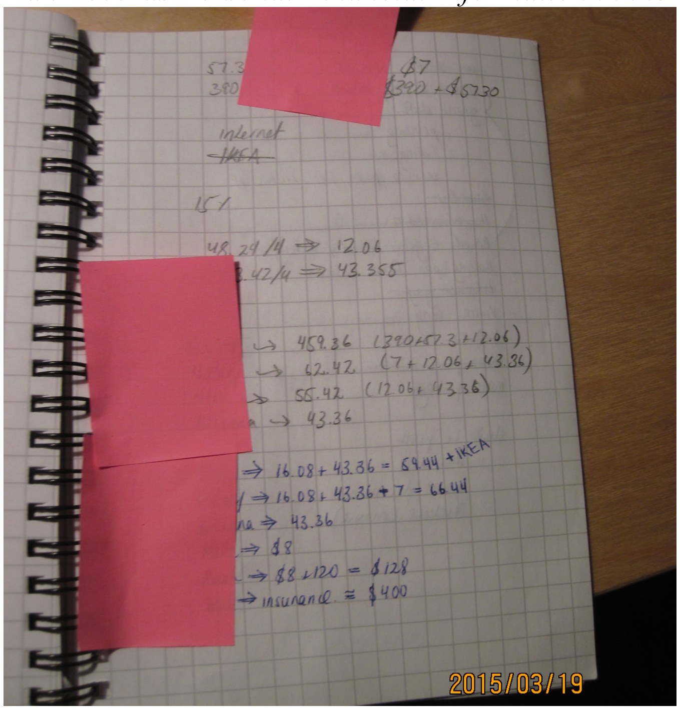


Note. Rachel makes use of grids in her spreadsheet to organize her personal financial data.

During his guided tour, Dan also provided an example of a self-authored personal financial document to construct a financial narrative about the expenses he and his friends incurred during a recent cottage vacation. As the designated records manager among his friends for that trip, Dan used a page of a notebook to record the different amounts paid by different members of the party to eventually work out how much each person owed for their share of the total costs (Figure 23). Dan's self-authored financial document was used as a tool for constructing a financial narrative about the division of travel expenses between friends and later communicating that narrative to others.

Figure 23

Dan Records Personal Financial Information in the Form of Calculations



Note. Dan shows a page within a notebook where he calculates totals as part of making sense of his financial expenses. He hides personally identifying information with sticky notes.

The calculation of sums was a common example of how young adults exploited personal financial data to generate personal financial information and construct financial narratives. The construction of financial narratives was interpreted as a form of sense-making (Dervin, 1983; 1998). To bridge the information gaps that young adults experienced, such as how much they spent within a month or how much each member of a traveling party owed to pay for their fair share of a vacation getaway, young adults constructed narratives that helped them understand their financial situation including sequences of financial events, which could in turn be used to execute appropriate financial responses. The adding up of data points within financial categories helped young adults develop a global picture of their finances that is not apparent from the data alone in an unprocessed form. The organization of data enabled young adults to make sense of financial data to construct narratives that support financial decision-making and execute financial actions.

The construction of personal financial narratives using personal financial information generated through the interpretation of personal financial data allowed young adults to tell stories about their past financial behaviors and understand their financial situation in the present. This was like the evidencing, witnessing, and self-presentations in personal collections described by McKemmish (1996), Cox (1996), and Hobbs (2001). These stories were often reflexive in nature, meaning the narratives that young adults construct generate novel insights about the self as a financial actor in addition to changes in their personal financial situation. The self-reflexive uses of personal financial data also illustrated how curation and exploitation was directed towards movement up the Wisdom Hierarchy through knowledge-production. Mike, a third-year undergraduate student in economics and international development originally from Baltimore, described how use of his spreadsheet helps him construct a retrospective narrative about his spending habits over the previous month that was self-referential about him as a financial actor,

> I write a note to do finances from this day until I do them, then I will go online to my debit card bank statement, and I will copy the bank statement onto the Excel sheet, and then I will categorize the purchases by bills, fun or groceries. And then at the end of each month, I will add up the totals for groceries, fun, and bills. I know what [each bill] is because it is a standard amount. Then I will be thinking to myself, 'Oh look at how much money I saved or how much money I spent this month', like self-reflection.

Mike's records management process starts with a reminder to himself initiating a new cycle of processing his personal financial records. His reminder is an example of how some forms of personal financial records are "action information" that motivate and coordinate the execution of personal financial records management (Cole, 1982). To construct a financial narrative, Mike accesses and gathers the financial data he needs from his financial service provider information system and inputs them into a self-authored financial document in the form of a spreadsheet. Use of a spreadsheet as a container for his personal financial data allows him to overcome fragmentation across service provider systems and formats. Then Mike generates new information from his financial data that allows him to interpret the meaning of the data and construct a financial narrative that he can compare with the knowledge he holds in his mind, such as the expected totals for recurring expenses. Lastly, he illustrates sense-making where he can generate answers to financial questions he faces, such as how much he spent or saved in that month. He describes the experience of sense-making as a form of self-reflection, in which the financial narratives he constructs revolve around his financial agency and actions within a given period. Curation and exploitation of personal financial data within self-authored personal financial documents offered young adults like Mike with opportunities for self-discovery as part of the knowledge-production process like those described in the personal archiving literature identity construction using personal collections (McKemmish, 1996; Kaplan, 2000; Hobbs 2001; Beagrie, 2005; Kaye et al. 2006; Cushing 2013).

Narrative construction and data curation within self-authored documents was iterative. Young adults described how their current interactions and styles of processing personal financial data were a product of past experiences with the potential to shape future strategies. For example, Jenny also leverages spreadsheets to construct financial narratives and understand her financial behaviors, which sometimes tell challenging stories about her financial situation, which she saw as directly impacting how she manages personal financial records,

> So, in the spreadsheet, I have things like food, like miscellaneous is a big "one", I guess essential and nonessential food, transportation, leisure, cultural, and then I have "miscellaneous" like I said but I need to put in a new one for travel-related expenses because it has been skewing my data. Last week I went to Toronto, and obviously it costs you a few hundred more than your normal budget, so it makes it look like I am just spending like crazy! So that is why I kind of lose confidence in the whole spreadsheet thing because I am like, "oh it makes me feel bad." I haven't updated it since the 16th, which is also why I have those receipts there because if I had updated it [my spreadsheet], I would have thrown out the receipts.

During her guided tour, Jenny started to develop awareness of a new category that she could add to the structure of her spreadsheet to improve the accuracy of the financial narrative she constructs using her data. She also described an emotional consequence experienced when interpreting her personal financial data, resulting in avoidance of curation and a backlog of financial records waiting to be processed, reminiscent of the negative affective experiences in interactions with personal financial records described by Kaye el al. (2014). Her avoidance of curation related activities, which resulted in a backlog of receipts to process and discard, was interpreted as an example of information overload noted by past PIM researchers (Whittaker & Snider, 1996; Whittaker, Bellotti, & Gwizdka, 2006; Whittaker, 2011). Overload in the context of sense-making with personal financial data was a product of negative reflexive feedback rather than being a product of cognitive challenges associated with making filing decisions, appraisal challenges associated with uncertain long-term value, or overkeeping caused by the fear of loss of records with future value. Many participants expressed negative self-evaluations about how they managed their personal financial records and personal finances in general. Kaye et al. (2014) found that anxiety and discomfort were common emotional experiences in financial management. Anxiety and discomfort also impacted how young adult participants describe interacting with their personal financial data and records. Information overload, in this context, was also a form of emotional overload, resulting in avoidance of personal financial documents and management tasks, resulting in uncontrolled accumulation more representative of traditional meanings of information overload by volume used in the area of personal information management.

Young adults modified their personal financial data curation process to respond to new financial goals and information needs. The ways in which young adults changed their data curation processes to answer financial questions and achieve financial goals also suggested an iterative process for development of curation strategies for personal financial data. During her guided tour, Jane described how her most recent strategy of using a spreadsheet to improve her understanding of her personal financial situation was a new approach responding to new financial and information needs,

> The Excel document that I have is probably the most important [document in my collection]. I only started keeping it a few months ago because now that I am going off to school, I need a better idea of what I am spending. I am planning a big trip to Asia this summer, so I have it set up, so I know how much I am saving and how much I am spending on that. So, I have been trying to keep everything up to date. So that is definitely the most important. All of my expenses go into that [spot] and incoming money also goes into there. For the most part, I keep it month to month so that I know what the total is for each month that has been spent, and I have it separated into columns so that it is readable and understandable for me.

Jane describes how her most recent strategy for tracking personal finances was motivated by two upcoming transitional events: going to graduate school and international travel. As a result, she became aware of a new information need that could be satisfied through a new approach for the curation of her personal financial data. Like other participants, she described how the curation of personal financial data within a spreadsheet enabled her to generate the information she needed to answer effectively plan and execute financial actions, invoking Cole's (1982) action information concept of personal records. Like other young adults who participated in this research, the organization of her data was an essential component of her sense-making process. Through interpretation, she can construct a narrative that makes sense of her financial situation and herself as a financial actor, which in turn enables her to act in goal-oriented ways. Next, I discuss use of time management tools for financial narrative construction.

Financial Sense-Making with Time Management Tools

Sense-making and the construction of financial narratives was also observed with time management tools. The narratives that young adults constructed with planners and calendars differed from those created using spreadsheets and spending logs. Leveraging bult-in structural elements that represent time, young adults used planners and calendars to construct narratives about past and future personal finance. Time management tools were seen as particularly useful for financial planning, financial projection, and coordinating future financial actions, highlighting how action-oriented and task management functions of personal records identified by earlier researchers remain relevant to understanding PIM today (Cole, 1982; Ducheneaut & Bellotti, 2001; Bellotti et al., 2002, 2003. Jake, an undergraduate student, describes how his personal financial data within time management tools were used for sense-making and narrative construction,

> I use a calendar in certain cases but only for reference, not really making events or alerts just to see where I am at in days until I am going to get paid, to budget my next month, or something like that; or how many weeks of groceries I need to fit with the rest of the money I have left over for this month and I will use that when I go into the grocery store to make sure that I don't buy too much that week, which kind of falls over into the next week, etcetera.

Financial projections and planning were a particular form of exploitation of personal financial data enabled by time management tools. Structural elements within planners and calendars allowed young adults to generate new information in the form of inferences as financial projections or forecasts. The ability to visualize and represent personal finances along a future-oriented timeline was a specific benefit attributed to the built-in structural elements of time management tools.

Use of time management tools to unify data supported financial sense-making and narrative construction by bringing task and finance-related data into a single space, highlighting the data unification function of time management tools (Karger & Jones, 2006). Cindy described how she valued her agenda as a centralized location for managing her life and used various structuring techniques to visually organize and make sense of time and financial data,

> I do a lot of these study type things, like research studies and those are all highlighted in yellow and then I circle the amount of money [I earn]. So, any money things that I have, like I can show you where you feature in here, there you are, and another one for example, I'll show you, when I do, hold on. For example, I worked at the international travel and tourism show. Anything like that which will make me money is in yellow and that way when I go back and look through my documents, I can see, oh look, I made a hundred dollars this month.

Cindy used her agenda to plan and manage academic, economic, and social activities simultaneously in a unified space (Figure 4). She records and circles the money she earns from economic activities in the margins as a method for keeping track of cash transactions without other associated document sources. An important technique for giving personal data within her agenda structure is the use of color coding and annotation. As seen with spreadsheets and paper tracking documents in the previous section, the organization of content within a document is an important technique for interpreting and making sense of personal financial data, which allows young adults to generate new kinds of financial insight. Piras and Zanutto (2010) also note how annotation, underlining, highlighting, and data integration techniques are used to enhance, add value, and generate action from personal records but that these techniques are often “opaque” or unrecognized forms of work. The use of time management tools for personal finance also represents a form of invisible work that is often not recognized by financial professionals as an aspect of financial management and planning. For this reason, personal financial records management is rarely included as a topic in educational resources for personal finance. Color coding creates visual separation between types of personal data stored within a single information container. Annotation, in the form of circled totals, allows Cindy to distinguish between future and past events as well as giving visual prominence to numeric financial data within her agenda.

In PIM, information and documents or records are often treated as synonyms and used interchangeably. The meaning of “information” to emerge from a closer look at the curation of personal financial data within self-authored documents such as spreadsheets and spending logs suggests something different, that the content of self-authored personal financial documents is data, that data is often curated through the creation of personal records, and that information is a product of exploitation of curated personal data in self-authored documents. Effective exploitation often required extraction or duplication, appraisal, unification, organization, and interpretation of personal financial data. The reflexive dimension of how young adults exploit personal financial data illustrates how information is relative to its interpreter reflecting their information needs and their data curation processes. Actions directed towards structuring, describing, organizing, and exploiting personal financial data normally associated with curation of personal information across documents at the collection level also occurred within documents designed to capture, integrate, and make sense of personal financial data. Sense-making was the main objective of the curation of personal data and through sense-making, in the form of constructing narratives about the financial past and future, young adults could generate information that satisfies everyday financial information needs. In addition to constructing narratives about the financial past, young adults sought to generate projections about their financial futures from personal financial data. Young adults expressed financial planning and coordination of financial actions in the future as information needs that motivated curation of personal financial data. Next, I turn to a discussion of examples of consumption of financial data through use of the financial touch as a form of sense-making.

Use of the Financial Touch for Financial Sense-Making

Apps and websites facilitate human-information interactions directly with personal financial data. Many of the young adult participants describe instances in which they can “bypass” or avoid interactions with “traditional” financial documents in either paper or digital formats such as monthly statements because of the design of service provider information systems that present personal financial data as content.

Many of the interactions young adults have with data made available through service provider information systems resemble use of the financial touch (Kaye et al. 2014). The financial touch was harnessed for financial sense-making and narrative construction from personal financial data accessed through financial apps and websites. Discussions with participants revealed that sense-making is possible through consumption of personal financial data in addition to the curation techniques used to manage data that is recorded, unified, and then acted upon within self-authored documents. While using the financial touch, participants described having to organize and make sense of personal financial data available through service provider information systems but without reliance on documents as a container that supports manipulation and tangible interaction with data. Rather, organization happens in a cognitive form within the young adult, in which personal financial data is used to modify their tacit understanding of their financial situation. Gina, the second-year cognitive science student, describes how a cognitive form of sense-making occurs through use of the financial touch to interact with personal financial data accessed through service provider information systems,

> I never really put them into categories if I do online banking, I am just seeing what my current balance is. I guess I would sift through it and see what I have spent on things and do mental organization, but I don't really write things out.

Use of the financial touch is central to Gina's interactions with service provider information system-curated personal financial data. The financial touch allows Gina to "see" her own financial behaviors and situation in a reflexive way, through which she constructs a tacit personal financial narrative about how she spends her money. Similar to the mirror-like quality of personal collections (McKemmish, 1996; Kaplan; 2000, Hobbs, 2001; Kaye et al., 2006; Cushing, 2013), system-curated data supported similar self-presentation functions associated with personal records but without curation. She describes organizing data in her mind to interpret it without reliance on self-authoring financial documents such as a spreadsheet or spending log. She develops a sense of her present financial situation with her account balance and recent financial transactions through her use of the financial touch (Kaye et al., 2014). Use of the financial touch was a distinct non-curation style of interaction with personal financial data that is directed towards the construction of financial narratives. Sense-making with system-curated data occurs through a form of consumption, rather than through curation of personal financial data. Consumption entails repeated use of search and retrieval techniques from locations outside of personal collections. In this context, service provider information systems were interpreted by young adults as extensions of their personal space of information rather than as external locations beyond the boundaries of their personal collections. Young adults' use of service provider information systems to access the personal financial data they needed to update their internal understanding of their financial situation illustrated how financial sense-making and narrative construction was possible through accessing and consuming interactions with personal financial data. Gina generates personal financial information in a tacit form within her mind, rather than in explicit form within self-authored personal financial documents like spreadsheets. As a result, use of the financial touch served similar sense-making functions as curation practices, albeit in tacit rather than explicit forms.

The construction of financial narratives through consumption requires frequent interaction with information systems, like the frequent balance checking reported by Kaye et al. (2014). Some participants expressed the need for frequent interaction as a particular limitation of sense-making via consumption-style interactions. Kim described how her use of the financial touch with service provider curated data was essential for maintaining an accurate understanding of her personal financial situation, "you can try to keep track of how much you are spending in your mind, but you don't have a sense of how much you are spending until you check your [account] balance." Although young adults can construct tacit understandings of their financial situation through the financial touch, young adults need to "recalibrate" the narratives they hold in their minds frequently to maintain an accurate understanding of their current financial situation. Gaps in time between financial events and their most recent use of the financial touch could result in the financial narratives that young adults hold in their minds to become skewed. Frequent consumption of personal financial data on service provider information systems was used to address the short relevance of tacit personal financial information generated using the financial touch. Jake also expressed the importance of frequent use of the financial touch for financial sense-making while describing his normal PIM process,

> You are constantly monitoring what you are spending before the bill comes out. For me it is on the 12 or 13 of every month so I look at the bill and cross reference everything that I previously spent in that bill and then I am going to look at what my budget is in my bank account to pay for the credit. And then look for how much I need to cut on groceries or other expenses to make sure that I can pay for rent for the month. So, it's, uh, a bit retrospective and not as proactive as I should be. But for the most part, it has worked out for me pretty well so I guess I am intuitively spending what I should be spending.

Jake finds sense-making using the financial touch more effective for constructing retrospective narratives compared to financial planning. Referring to his bank account balance as his "budget", or the total amount of financial resources he has at his disposal within a given period, he must recalibrate his cognitive financial narrative and financial plan to consider changing financial resource levels over time.

Use of the financial touch for financial sense-making had similar emotional costs and consequences attributed to narrative construction with self-authored financial documents. Jenny, who discussed losing confidence in her spreadsheet after seeing a dramatic increase in spending because of a recent trip, also found financial data accessed through service provider information systems to be anxiety provoking,

> I used to do that thing where I would check my balance obsessively and be like, "oh my god, I have to pay it off, I should pay it off [now]! So, I would pay it off multiple times a month and I just found that was just really bad for me because it wouldn't reflect in real time how much I paid and all that stuff. So, it was causing me a lot of anxiety.

Jenny described obsessive use of the financial touch, in the form of repeatedly checking her bank account balance to monitor changes in her financial situation, which in turn heightened the anxiety she felt about personal finances and resulted in poorly planned financial actions. Paying off her account balance prematurely and repeatedly within a month negatively impacted her ability to maintain an accurate mental model of her financial situation when relying on her bank account balance as a heuristic of her spending. Rather than reducing anxiety, initiation of the financial response at the wrong time causes further anxiety when Jenny is unable to hold an accurate understanding of how much money she spends in a month. In this example, she relies on the built-in structure of the monthly billing cycle and the amount due to maintain an accurate picture of her overall financial situation, which she is unable to do accurately if she pays her bill before the end of her billing cycle. Despite these limitations of using service provider information systems for financial sense-making, many participants still saw service provider information systems as valuable tools for staying aware of their financial situation and financial planning.

The central organizing concept identified through inductive analysis was how young adults used the data curated in self-authored financial documents to generate novel financial understanding in the form of financial narratives. Young adults also constructed financial narratives through the consumption of personal financial data contained within financial and household service provider information systems. Financial narratives allowed young adults to make sense of their financial past, present, and futures, as well as act on personal financial data.

Conclusion

In closing, this section presented the findings of an inductive thematic analysis that looked more closely at the variety of human-information interactions that young adults described having with personal financial data during the guided tours. In doing so, it also explored examples of how personal financial information is generated from personal financial data through interpretive sense-making processes, which I argue should be interpreted as a form of knowledge production. Personal financial information was insights generated from interactions with personal financial data rather than a synonym for a personal financial record or document within a collection of personal financial records. Self-authored personal financial documents such as spreadsheets, spending logs, and time management tools were important containers that supported the curation of personal financial data that young adults captured, unified, and acted upon.

Personal financial information was observed in many forms, such as novel financial figures generated through the processing and exploitation of personal financial data. It was also expressed in the form of actionable insights, such as retrospective understandings of the financial past as well as the ability to make financial forecasts and plans for the financial future. Personal financial information was a product of sense-making and the interpretation of personal financial data. This understanding of personal financial information differs from colloquial usage within the area of personal information management that treats documents or records as information in in an object form rather than seeing information as something intangible that is generated through interactions with the contents of documents and needs to be actively transmuted into a tangible form through acts of capturing and recording using language and numbers. By exploring how people interact with and exploit their personal financial data to construct personal financial narratives, the presence of knowledge-production in interactions with personal data becomes easier to see.

Two general forms of personal financial data were captured by the guided tours: (1) self-curated and (2) system-curated. Self-curated data was captured and recorded by young adults themselves, and then interpreted through organizational practices within spreadsheets and logbooks as well as time management tools such as calendars and planners. System-curated data was captured and managed automatically by financial and household service providers, and interactions with these forms of personal financial data were characterized by patterns of access, consumption, and neglect rather than curation by young adults, when participants relied on service provider information systems as a long-term preservation strategy. Use of the financial touch leverages information systems to curate and preserve financial records because of reductions in time and effort associated with active curation. Use of the financial touch should not be interpreted as representing the lack of personal financial records management processes or strategies among young adults, as was the case in Kaye et al.'s (2014) related work. Rather, use of the financial touch was a specific strategy for financial sense-making and managing the time and labor costs associated with curation of collections of personal financial data. Use of the financial touch also revealed the high-level of trust young adults had in service-provider information systems to provide long-term access to personal financial data and records. This trust was seen as an example of opportunism, optimism, and benign neglect in the context of personal financial records management (Marshall, McCown, and Nelson, 2007).

Another type of self-authored document that young adults frequently discussed in relation to their personal financial information was time and task management tools. Time and task management tools that young adults integrated into their financial management were calendars, planners, agendas, to do lists, and memos. Time and task management documents, both paper and digital, were convenient containers for recording and exploiting personal financial information at the right time for the purpose of financial planning and initiating financial actions. They were also examples of where personal financial data converged with data from other areas of their lives.

The observation that personal collections of financial records contain two general categories of records, directed-to and self-authored, resembles the overall structure of collections of personal health information described by Piras and Zanutto (2010). In their exploration of collections of personal health information in the home. Piras and Zanutto describe collections of personal health information as a split between “logbooks’’ and “duplicates” with logbooks maintained by patients “used to monitor or keep track of the clinical histories of specific health conditions” as prime examples of unique personal health information contrasted with “documentation produced by health services” issued to patients such as laboratory results, specialist consultancy reports, and communications received from health care providers as examples of duplicates. Spreadsheets and financial logbooks used by young adults to track their personal finances were analogous to the logbooks maintained by patients to track changes in health conditions. They shared the feature of being unique due to self-authorship. Non-unique personal financial information was analogous to the duplicates described by Piras and Zanutto (2010), sharing the qualities of being documents produced by other entities with copies being issued to individuals as part of routine communications between service providers and their clients.

In general, young adults' personal collections contained many kinds of personal financial records that were received from outside sources. These everyday and ubiquitous forms of personal financial records were examples of what Jones and Teevan refer to as "directed-to personal information" (Jones & Teevan 2007, p. 90). These included items such as statements from financial service providers, receipts from retailers, pay stubs from employers, and bills from household service providers. "Many young adults curate sizable volumes of "directed-to" personal financial records in piles, storage bins, shopping bags, binders and filing cabinets in their homes. Digital versions of these records were also regularly accessed online, through banking websites and apps, and sometimes copies were made and stored on personal computer hard drives, external hard drives, or on the cloud. Examples of "directed-to personal information" within collections of personal financial records illustrated how the knowledge-transfer perspective in Information Studies remains relevant for conceptualizing personal information and the role of information systems in personal information management. Service provider information systems were used by young adults to access personal financial data captured by financial service providers in addition to being used opportunistically as a long-term preservation strategy.

Although most documents within collections of personal financial records were forms of directed-to information, young adults had rich and meaningful interactions with self-authored financial documents. Young adults presented examples of spreadsheets and spending logs that they created for themselves as part of managing their personal finances and making sense of their financial situations. Self-authored personal financial documents were used to capture, centralize, store, and make sense of personal financial data for the purpose of constructing financial narratives. Self-authored financial documents from the guided tours provided many examples of the knowledge-production perspective in Information Studies, in which data is used to generate novel information through interpretive sense-making processes. Young adults showed examples of both paper and digital self-authored financial tracking documents, which reflected their personal styles and preferences for managing their personal finances and generating the insights they need to be effective financial actors. Parallel use of service provider information systems and self-authored personal financial documents for financial sense-making and narrative construction suggests a complete theoretical model of personal information management must acknowledge both knowledge-transfer and knowledge-production in human-information interactions with personal records and information systems. Consequently, both the consumption and curation models of personal information management are required to fully capture the range of human-information interactions young adults have with personal financial records and information systems.

Challenges in managing personal financial data such as fragmentation as well as time and effort required to curate personal collections emerged in the guided tour interviews. The use of self-authored documents to unify data illustrated an organic solution to fragmentation at the collection level achieved at the data-level not discussed by previous researchers. The guided tours also revealed how a high level of trust is placed in service provider information systems to curate personal financial data. The risks and consequences might not yet be known by young adult participants who are in the earliest stages of personal financial records management.

The knowledge-production perspective inspired approach to exploring personal financial records management helps bring the conceptual language used by researchers working in PIM into greater alignment with theories of information such as the Wisdom Hierarchy. Use of the knowledge-production approach also highlights opportunities for design and support by information technology designers and processionals by better understanding the information needs faced by people and the ways in which they exploit the data they consume and curate. The need to address fragmentation of personal data, the use of personal data to generate financial narratives, many of which are self-reflexive in nature, and the instrumental use of personal data to generate action all point to ways in which designers in HCI and Information Studies can support and improve the interactions people have with personal data, including for financial purposes. Exploration of personal financial data shows how financial understanding, financial planning, and financial action are intimately embedded in processes of data curation and exploitation as well as consumption. Data curation is often a form of invisible work in personal finance. Interactions with personal financial records and data are essential for effective management of personal finances and represent an opportunity to support the development of personal financial skills and behaviors, which will be discussed in more detail in the following chapter.

Chapter 7: Coming of Age Through Personal Finance

This chapter explores how the acquisition and development of skills and practices in personal financial information management is embedded in a coming-of-age process. In doing so, I examine the ways in which young adults interpret becoming effective managers of personal financial records as part of their transitions from adolescence to adulthood. Young adulthood, as a liminal period between adolescence and full adulthood, was a time of learning, practicing, and mastering financial management skills. Through reflexive thematic analysis, two main themes were identified that capture the qualities young adults associate with financial adulthood: (1) the development of financial knowledge in the form of practical skills for processing and using financial records effectively, and (2) financial wisdom in the form of an intuitive style of financial management. Two subthemes were identified for each which explicate the role of financial records management in the coming-of-age process.

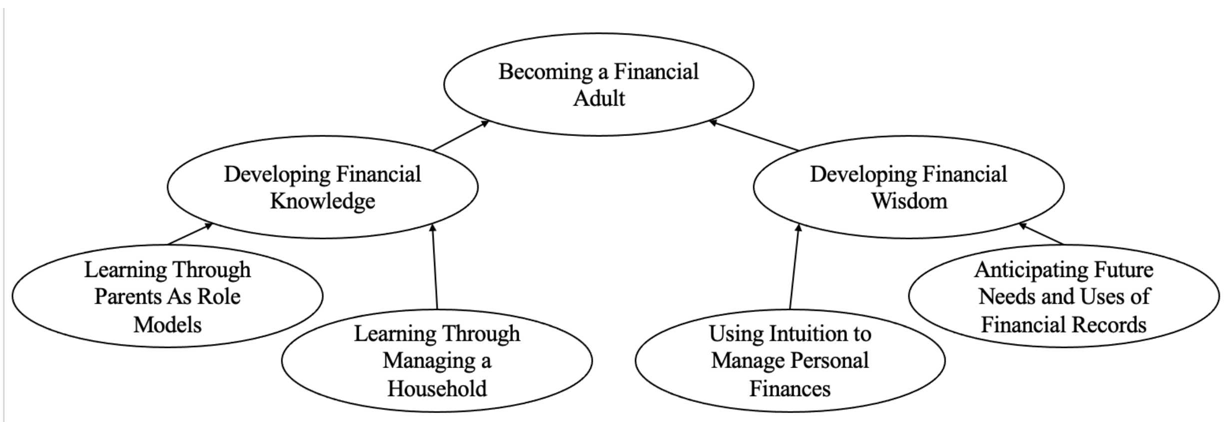
In developing financial knowledge, young adults sought to develop practical skills and competencies in managing personal finances and financial records. During the guided tours, conversations with participants revealed how young adulthood was a period of experiential learning to acquire and refine these skills. Young adults discussed two key contexts that helped them to develop the knowledge and experience they needed to become financial adults: (1) learning through parents as role models, and (2) learning at home through managing a household.

In developing financial wisdom, young adults sought to acquire qualities they associate with financial maturity. Young adults discussed two skills they associated with financial adulthood: (1) learning to manage personal finances intuitively, and (2) learning to appraise.

These thematic relationships are represented as a thematic map in Figure 24. Through successful acquisition of knowledge and wisdom in the context of personal finances, young adults can see themselves as mature adult financial actors who successfully completed the transition from adolescence to adulthood.

Figure 244

Thematic Map for Coming of Age Through Personal Finance



Next, I turn to a presentation of the themes generated through Reflexive Thematic Analysis and explore examples of personal financial knowledge and wisdom captured by the guided tour interviews. The guided tours confirmed many of the findings on personal finance in emerging adulthood and illustrate how the development and transfer of financial records management skills and practices are embedded in the financial coming-of-age process.

Developing Financial Knowledge

The transmission of knowledge about financial skills and practices was an important part of the financial coming-of-age process. Guided tours captured instances in which young adults reflected on parents as sources of financial know-how. Parents were role models of financial records management practices that young adults could emulate and adopt in their own lives. Young adults described instances in which parents modeled techniques for exploiting personal financial data and managing personal financial records effectively. As such, parents were active initiators of the financial coming-of-age process for many young adults, who prepared participants for increasing levels of financial responsibilities and independence while providing on-going supports in the form of financial resources and financial knowledge throughout the years of emerging adulthood.

A second important source of financial knowledge was direct personal experiences with managing personal finances and associated records, which allowed young adults to develop their own personal financial knowledge. Moving out of their parental family home and into their own independent household in the form of an apartment or university residence was an important transitional event that provided young adults with opportunities to develop personal financial knowledge. Many participants described making dramatic geographic moves to Montréal, which played an important role in initiating them into financial records management. Upon arriving in Montréal, they established their own independent households at a distance from their parents or guardians. The establishment of their own households was an important initiating factor for starting to manage personal financial records and a context for experimenting and refining their records management style and techniques. The establishment of an independent household positioned some participants in the role of designated records manager, in which they assumed financial roles and responsibilities associated with adulthood.

Guided tour interviews captured how the development of financial knowledge reflects both the knowledge-transfer and knowledge-production perspectives in Information Studies. The relationships and interactions that young adults have with their parents or guardians illustrates the knowledge-transfer perspective, in which knowledge can be transformed into an explicit and communicable form that can be shared to support financial coming of age. On the other hand, the practical knowledge that young adults develop through direct experiences with managing a household point to the ways in which knowledge-production is also part of the financial coming-of-age process.

Learning Through Parents as Role Models

Financial coming of age entails changes in the relationships between young adults and their parents or guardians. During the guided tours, participants often reflected on these changes and the roles parents play in their development into financial adults. Parents were one of the most valued and trusted sources of financial know-how. As such, participants described how their parents were important role models and teachers of foundational skills in personal financial records management. For example, when asked about influences and sources of financial record management know-how, Anastasia responded, “So I think to go to the beginning, the way I am keeping my records is related to how my parents do this because I think they taught me.” During her guided tour, Cindy also credited her parents as role models who directly shaped her own financial records management practices, “Well I know my parents are super organized people. Like physically organized and also with taxes and receipts and stuff like that. I kind of try to take after them.” Across guided tours, several participants traced the origins of their records management process to their parents, as both the primary models and teachers for how to manage financial documentation and as people who created opportunities for experiential learning and refining these skills in preparation for adulthood. The emphasis young adults placed on parents as role models and sources of financial records management know-how is an example of parental socialization of personal finance (Mary, 2014; Lanz, Sorgente & Danes, 2019; Damian, et al., 2019; Allsop et al., 2020).

Across guided tours, participants expressed awareness of the wide variation in levels of financial knowledge possessed by young adults as they navigated the emerging adulthood years. Young adults expressed awareness of variability in the pace at which their peers and themselves become financial adults, which was reflected in how young adults interact with personal financial records and sources of financial knowledge. For example, when asked whether she has ever received financial information resources directed to her that she maintained within her collection of personal financial records, Sara reflects on variations in the level of support young adults receive from their parents,

> I don’t think that a lot of my friends [care], it isn’t really a concern for a lot of people right now because we’re also fairly young and our parents still take care of those things for us and give us those reminders. Like, I don’t think any of my friends really know how to do anything. Like in terms of finances, I don’t think they really have that kind of information or keep track of that kind of information themselves.

In general, Sara believes that many people her age possess low levels of financial literacy and limited records management know-how due to the direct on-going support they receive from parents. At the time of research, Sara was still early in her transition to financial adulthood, leaving her parents’ home in Ontario less than two years earlier. As someone near the beginning of her transition to financial adulthood and limited experience with financial records management, Sara continued to rely heavily on her parents for financial support, which limited the develop of personal responsibility she had for managing her finances and associated records.

This was interpreted as an example of how the years of emerging adulthood are an age of in-between during which young adults are aware of the incompleteness of their transitions (Arnett, 2000; 2006). Her sentiment was shared by other participants, who felt that there were practical reasons to continue to receive support from parents during the transition to financial adulthood. For example, when asked about filing taxes and the impact income reporting has on her personal financial records management, Jenny reflected on the support she received from her father during tax season because of the financial knowledge and experience that he possessed but she lacked,

> Um yeah, he is an investor, so he does that stuff every year. So, I am like, "Dad can you just handle this stuff for me?" because he also buys the software every year that you use for handling your info and reporting your taxes, so it is just easier for him to do it for me rather than both of us having to spend the time. And we're both super transparent about what our finances are so that is kind of how it works.

During the transition to financial adulthood, the support parents provide to their offspring sometimes goes beyond the transmissions of financial knowledge. Discussions about income taxes revealed a particular area in which young adults were still considered members of their parents' financial households despite living separately. Jenny's reliance on her father to file her income taxes every year while still a young adult illustrated young adulthood as an in-between age (Arnett, 2000, 2006). When it came to tax season, Jenny's father remained the designated records manager of the household. Jenny saw practical reasons for letting her father file her income taxes on her behalf to save time and effort within her larger family unit and the transparency between her father and herself about her financial situation created opportunity for the transfer of financial knowledge and mentorship.

The homes of parents and guardians was a foundational environment for the transmission of financial knowledge. Within the home, young adults described being exposed to the financial records management of their parents, which acted as a form of modeling of adult financial records management behaviors. This concept of parents as models was expressed by Jake, who described how seeing financial records management in the home and as part of a family business were formative experiences for him, “It was nice at times to be given every opportunity to learn about finances and how to keep them in check.” Involvement in household and family business finances was an important context for acquiring basic records management knowledge and skills for Jake. By assisting with the processing of business invoices for his parents, Jake developed first-hand experience with practical techniques for managing and exploiting financial documentation. He credits his mother with instilling within him the value of good financial records management practices by exposing him to her own financial record management practices in the context of their family business. Family homes and business were environments where young adults could learn about finances, observe the financial practices of their parents, and experiment with managing financial records under supervision and mentorship. Damian et al., (2019) found that young adults readily internalize the financial guidance received from parents during financial socialization as mental models (p. 5). Guided tours revealed that young adults also internalized financial records management practices socialized by parents, which had enduring impacts on how they managed their collections of personal financial records during the period of emerging adulthood. These experiences were formative and young adults used them to inform their practices as they get older and experience greater levels of financial responsibility and independence.

Young adult participants described their parents as intentional transmitters of financial know-how. As such, guardians actively prepared young adults for greater levels of financial autonomy in the future by teaching their children how to think about personal finance. Active modeling of financial rationales and thought processes that inform practical skills and practices used for managing personal finances highlight the ways in which financial knowledge and wisdom can be socially diffused and transferred through family structures. Mike described how is parents modeled financial thinking while at the same time teaching how to construct a budget document,

> Yes [I have a budget]. I constructed it before I left [home] for my first year [of university]. I sat down with my parents and were like, "Okay, how much do you think is a reasonable amount to be spending on partying?" And then we looked at my bank account and were like, "Okay, this is what you have contingent upon you wanting to have savings in the bank account and you will be working in the summers, what do you think? What is a reasonable number divided by the number of weeks in a semester?"

Mike describes how his parents helped him prepare for the greater degree of financial independence and responsibility he would need after moving away from home for post-secondary education through scaffolding (Wood, Bruner, & Ross, 1978). Mike was an undergraduate student who relocated from Baltimore, Maryland to Montréal for university, reflecting the geographic mobility that characterizes emerging adulthood (Arnett, 2000; 2006). In preparation for leaving his family home and the increased financial self-sufficiency Mike would need upon arrival in Montréal, Mike's parents played an active role in transferring financial knowledge in the form of modeling financial thinking and reasoning, walking him through the process of estimating his future costs and income, and developing a detailed financial plan with increasing levels of granularity. This was interpreted as an example of parent-child financial communication that results in adoption of parental advice for financial management and reasoning, which previous work found especially useful when young adults live in geographic locations far away from parents (Lanz, Sorgente, & Danes, 2019). As such, parents played an important role in the transition from adolescence to young adulthood through the financial socialization of foundational skills and practices for financial planning and reasoning.

Participants credited their parents as helping shape their attitudes and values towards personal finances. Values, beliefs, and rules that inform and shape action are also a form of knowledge according to the Wisdom Hierarchy (Rowley, 2007). Parents transferred financial knowledge in the form of financial value systems that young adults incorporated into their own approaches to managing financial records. In his guided tour, Mike described how financial knowledge received from his parents included a value system that encourages financial restraint and discipline,

> My parents [are my most trusted source of financial know-how] because they taught me to be a disciplined spender. They taught me how to be frugal but also how to spend money and have fun. So, they instilled good habits and also about recordkeeping too. They are actually very good at keeping records so that is also instilled in me too.

The lessons learned by Mike from his parents go beyond procedural know-how on how to construct financial documents and manage financial records. He saw his parents as a source of knowledge about fiscal responsibility, teaching him not only how to save money but also how to spend it in appropriate and fun ways that would allow him to enjoy the benefits of effective financial management. This was interpreted as an example of how the financial wellbeing among parents tends to translate into financial stability and wellbeing among young adults (Allsop et al., 2020). Through parents, financial knowledge, normally developed over time and through direct experience, could trickle down to their young adult offspring. For this reason, participants valued the practical skills and processes they inherited through their parents and sought to emulate their parents as working models of financial adulthood.

Sometimes the social transfer of financial skills and practices in family contexts was unintentional. Despite variations in the degree of involvement parents had in actively teaching their children how to manage money and financial records, the home and family remained important contexts of experiential learning and observation of both effective and ineffective financial strategies and practices. For example, Chris, who moved out of his mother's home at the age of 17, described teaching himself how to manage financial records but felt that his parent's own financial difficulties during his youth were responsible in part for informing his financial value system,

> You kind of just learn it because you don't have it. My dad went through a lot of debt and then my mom was the exact opposite so I kind of see both but then again, this has to do with the individual differences, right? And me, kind of seeing him not be able to deal with life financially and her doing the exact opposite. So, for me, that is kind of why it was learned and why it was so important and why it is so automatic.

During his guided tour, Chris described how growing up in a low-income household and witnessing the distinct financial struggles of each of his parents were strong necessitating factors for developing effective financial literacy and records management skills early in adulthood. Chris described how his mother's financial discipline and prudence served as a model that shaped his approach to tracking spending and living within his financial means during emerging adulthood. Chris saw his father as unintentionally modelling how not to manage finances, which reinforced the confidence he had in the financial know-how modelled by his mother. His direct personal experience with low-income during childhood and witnessing parental financial instability played a strong role in shaping his financial values and sensibilities. This was interpreted as a second example of the impact that parental financial wellbeing can have on young adult financial stability and wellbeing, emphasizing how financial stability among parents can positively impact the financial wellbeing of young adults (Allsop, 2020). Despite not receiving formal instruction in personal financial records management from his parents like other participants, they remain important role models of what and what not to do in financial adulthood.

Young adults relied on parents for various forms of support during their development of financial skills and records management practices. One form of support received from parents was assessments and feedback on the financial performance of young adults. This conforms with Butterbaugh, Ross, and Campbell's (2021) concept of objective financial knowledge, in which feedback received from parents was used by young adults to modify their financial behaviors and refine financial management practices. Gina described an instance when she received critical feedback from her parents that served as a kind of "reality check", forcing her to reevaluate her past financial behaviors and modify her financial plan,

> So, which is what happened to me in first year. I came home and my parents were like, "What are you doing?!" And I was like, "Oh!" And then we looked, and we saw that I was spending too much on shopping and going out and eating and all of that kind of stuff. So you could save yourself the reality check if you had something [a supportive technology] that could give you the tips already, I guess.

During Gina's guided tour, she reflected on the value an imaginary digital tool could offer young adults. Gina imagined a digital tool that could transfer financial knowledge in the form of financial tips that help young adults be more aware of their spending to avoid confrontations between parents and young adults. Such a system would have the impact of reducing her reliance on her parents as a source of financial knowledge and shield her from the stress and potential embarrassment that comes with receiving a "financial reality check" from your parents during emerging adulthood. Gina described how her parents used the reality check as a teachable moment and used her financial records to help her evaluate the appropriateness of her spending patterns. In this example, records were a tool that supports modeling of financial thinking and self-assessment that Gina could on her own use in the future. Feedback received from parents was accompanied by challenging affective experiences like those associated with interactions with personal financial records. Seeking support and financial knowledge from parents during times of financial distress was a source of discomfort during the development of skills and practices related to managing personal finances but parents could also be a source of comfort and protection against the negative emotions normally associated with managing personal finances like those described by Kaye et al. (2014). When asked more about the emotional experience of receiving a financial reality check, Gina connected the experience directly to the coming-of-age process,

> It was really, it was my parents. So, it was really comfortable with them. It was embarrassing to have to ask them for more money and then have them. They didn't really school me, but they said, "You have to realize that you can't do this. We're not Bill Gates." So, I think it is important not to become so reliant on your parents, and whatever, as you get older and university is a time of exploration and financial exploration is important, which we forget about.

Kaye et al., (2014) saw negative affective experiences associated with personal finances as a design challenge for novel financial information systems. Feedback from parents, despite being a source of discomfort, also reinforced narratives of the importance of financial responsibility and financial independence that young adults work towards as they become full adults. Financial socialization by parents can reduce negative emotions such as stress normally associated with personal finance (Damian, et al., 2019). Gina felt that emerging adulthood was a period where young adults could experiment and make mistakes as they learn how to be financially responsible and independent. This captured Arnett's concept of emerging adulthood as a period of self-focus during which young adults experience greater freedom and reduced responsibility compared to full adults (Arnett 2000, 2006). This included a degree of protection from the full consequences of financial mistakes and financial distress. Guided tours emphasized how the development of financial knowledge can be accompanied by negative emotional and financial experiences, which parents can temper when seized for modeling financial know-how.

Other participants discussed how the transition from adolescence to financial adulthood was reflected in changes in communication practices and styles with their parents. Some young adults experienced the transition to adulthood as ushering in new levels of transparency and openness about personal finances between parents and their children. This was particularly the case when young adults saw parents take active roles in the transmission of personal financial skills and practices as role models and teachers in the home context. Gina, a third-year student who came to Montréal from Rome after her family immigrated from Malawi, provides an alternative example where she and her sister needed to assert their right to greater awareness and understanding of her family's financial situation as part of the transition to financial adulthood,

> Things became an issue monetary-wise for the family [during the 2008 financial crisis] so it meant that there had to be a discussion. My sister and I had to go badger my parents and be like, "You have to talk to us about family finances, we're adults now, you need to [tell us]!" you know?

For Gina, financial coming of age is associated with increased levels of transparency between parents and their adult children and she saw a period of financial crisis as an opportunity for her sister and herself to assert greater levels of financial responsibility and independence as part of a coordinated family response to a global financial crisis. Gina also saw the crisis as an opportunity for the transfer of unique financial knowledge that her parents possessed.

Participants expressed the competing desires for greater degrees of financial privacy as a form of financial independence and financial transparency and equality associated with financial maturity.

Overall, guided tours captured how financial socialization plays an important role in the development of practical skills and practices for personal finance including records management. Financial socialization by parents was an opportunity to transfer personal financial knowledge across generations to positively impact the financial wellbeing and stability of their offspring. Young adults emphasized emerging adulthood as an age of in-between, during which their skills were still in development resulting in varying degrees of reliance on parents for ongoing financial and records management support. Next, I turn to a discussion of how some participants experienced managing an independent household as a source of personal financial knowledge.

Learning Through Managing a Household

Changes in residence, in which young adults left the homes of their parents to establish their own independent households in Montréal, either living alone or with similarly aged roommates, was an important milestone in the transition from adolescence to young adulthood. Changes in residence were also an important contextual factor that necessitated the development of skills and practices in personal financial records management. These changes in residence also reflect how emerging adulthood is an age of instability distinguished by frequent changes in residence often across great geographic distances (Arnett, 2000; 2006). As seen in the previous section, some participants described how their parents took active roles in preparing them for this transition by modeling the thinking processes, values, and behaviors that young adults need to successfully make the transition to financial adulthood. The establishment of an independent household away from parents was a second important context of experiential learning that furnished young adults with opportunities to become effective financial records managers.

For many of the young adults who participated in this study, pursuit of post-secondary education was an important initiator of personal financial records management practices. Higher education was a significant necessitating context for learning how to manage personal finances and the documentation associated with it. Michelle, a recent graduate, stated how the transition to university was accompanied by greater awareness of personal finances, "I think ever since university started is when I started having to manage my own finances. Then I started worrying a bit more about it, like about financial things and stuff like that." For Michelle, the transition to university involved moving to a new city and establishing her household, a bachelor apartment set up like a dormitory, which she shared with a roommate to save money. Michelle's move and post-secondary study coincided with the development of greater financial awareness and changes in the number of financial responsibilities she experienced. Moving was an important transitional event that marked the end of adolescence and beginning of young adulthood that contributed towards greater feelings of financial competence and independence (Butterbaugh, Ross, & Campbell, 2019).

Throughout the trajectory of their post-secondary education, participants experienced opportunities to assume enhanced levels of financial responsibilities associated with financial adulthood. Mike reflected on his growing number of financial obligations that coincided with moving out of his family home,

> Well in first year, I didn't have [to pay for] groceries because I was on a meal plan. Same with bills, it was all lumped into one bill because hydro, internet, and rent were all one [fee] in first year. So that was like [having] just one bill instead of having three separate ones. And obviously, before leaving for university, I didn't have any of these things, as I become an adult, you know?

Mike's reflection captures how geographic moves and the establishment of an independent household away from parents are important transitional events on the journey to financial adulthood. He associated the increase in the level of financial responsibilities and financial documentation with the process of becoming an adult. The increase in financial responsibilities was incremental over his years of adulthood, reflecting changes in his living arrangements. Over the years of emerging adulthood, he was able to assume new and more complicated financial records management responsibilities as he gained experience with managing his personal finances. Cindy also reflected on her own progress in achieving financial independence in her guided tour that coincided with moving out of her family home, capturing emerging adulthood as a liminal state in between adolescence and adulthood,

> Well ever since, now that I live on my own, well not on my own, but not at my parents place anymore, I obviously have a lot more responsibility. And I think it will get increasingly [larger], especially if I start to work full time. Like now, my parents kind of help me out with tuition. Once I start paying for everything myself, I will have to step up the organization game. But for now, I guess my parents handle a portion of it more or less?

Young adulthood is a period of in-between identities, in which young adults are neither adolescents nor full adults (Arnett, 2000; 2006). This in-between stage of development was captured in the way that Cindy talked about her living arrangement, as neither living fully on her own nor with her parents and being neither fully responsible for her financial expenses nor completely dependent on her parents. Cindy anticipated that she would need fully realized adult records management skills upon completion of her studies and the start of her career. Until that time, she locates herself still within the transitory liminal cultural space of emerging adulthood, in which she is no longer fully dependent on her parents but has yet to achieve the level of self-sufficiency she associates with full adulthood. The move out of her parents' home was identified as an important trigger of greater financial responsibility and awareness, simultaneously capturing the concept of young adulthood as a liminal period.

As participants became secure in their growing financial knowledge, some were able to apply those insights by intentionally taking on greater financial records management responsibilities within their independent household. Sometimes young adults assumed the role of designated records manager and assumed responsibility for managing financial records on behalf of their roommates. In the context of personal health, Piras and Zanutto (2010) found households had a designated records manager primarily responsible for information seeking, organization, and communication. Households formed by young adults were repeatedly observed to have a designated records manager who was responsible for managing all the shared financial documentation for the entire household in addition to their own personal financial records. Cindy identified herself explicitly as the de facto "head of her household", which was composed of herself plus two roommates. As the head of her household, she had the lease and many of the household's accounts in her name. When asked why she chose to be the designated records manager in her home, she replied,

> I think I would rather be responsible for it all [rather] than have someone else do it? Like, oh, is that bill going to be paid late? Should I be concerned about it? Now that I am responsible, I know I won't be getting my internet cut off anytime soon.

As designated records manager, Cindy chose to be responsible for paying shared expenses in her household and then communicating the amounts owed by each of her roommates. She also took on the responsibility for the long-term storage and preservation of financial records for shared expenses under her name. As Cindy neared financial maturity, she grew more confident in her personal financial knowledge and ability to manage the financial affairs of her household. This was interpreted as an example of the increased feelings of self-efficacy and financial wellbeing associated with the ability to fulfill financial obligations and financial decision-making that occurs during emerging adulthood (Butterbaugh, Ross, & Campbell, 2019). Across guided tours, there was diversity in the ways in which young adults divided financial roles and responsibilities despite the designation of someone as the household's official records manager. For example, Michelle described how different members in her previous household were each responsible for paying different bills. As the designated record manager of the household, she was responsible for financial sense-making and constructing a monthly financial narrative that communicated the amounts paid and owed by each member of the household,

> Before, I used to live with two other roommates, and we would split the hydro, internet and rent. I would keep a record because each person was responsible for different things and then I would keep a file just to see who had to pay who back, how much, stuff like that. So, this is like one of the breakdowns I was responsible for. My friend was responsible for the internet, and these were like the dates of the month, the date to be paid, the date it was actually paid and the total, and then we split that between three people.

Designated records managers created the official financial narrative of the household that made sense of the previous month's financial activities and the financial obligations of each person. They were also responsible for communicating the financial narrative they constructed to each member of the household. As a result, the establishment of a household was an important context that supported the development and refinement of personal financial records management skills and processes associated with financial adulthood.

Overall, geographic moves and establishing independent households away from parents was an important context for developing practical personal financial knowledge through direct experience managing personal finances and records. Establishing independent households also furnished young adults with opportunities to manage larger volumes of personal financial records than ever before, which would increase the sense of self-confidence and financial independence that young adults experience during the period of emerging adulthood. Next, I turn to the second theme of developing personal financial wisdom as part of the financial coming-of-age process.

Developing Financial Wisdom

Developing financial wisdom was also an important part of the coming-of-age process. Wisdom refers to the accumulation of knowledge that results in understanding and reason (Rowley, 2007). The concept of wisdom is also associated with forward thinking or intuition in the form of being able to apply information and knowledge to think abstractly, make predictions, and anticipate future outcomes (Rowley, 2007). Through wisdom, we can anticipate outcomes of our actions and use our actions in strategic and intentional ways. Conversations with participants during the guided tours provided glimpses of some of the kinds of financial wisdom that young adults develop through the coming-of-age process. Analysis resulted in the identification of two subthemes related to personal financial wisdom: (1) using intuition to manage personal finances, and (2) anticipating future needs and uses of financial records. This chapter then closes with a discussion of transitional events participants associated with adulthood and the ways in which they anticipated changes to their personal financial records management practices after emerging adulthood. These conversations raised unanswered questions about the durability of financial records management practices from emerging adulthood later in life. The following sections will explore these two examples of financial wisdom in greater detail.

Using Intuition to Manage Personal Finances

Some young adults described a change in their financial management style towards minimal use of personal financial records and greater use of intuition. Reduced use of personal financial data and records to manage personal finances was interpreted as an example of the development of personal financial wisdom. Intuitive styles of financial management had common elements including the motivation to know and control spending, abandonment of previous financial records management practices, and the use of personal financial data as a feedback mechanism to verify intuition. Many intuitive strategies for managing personal finances had similarities with Kaye et al.'s (2014) description of the financial touch. Guided tours revealed that use of the financial touch was associated with the development of personal financial wisdom and was not the absence of a financial or records management strategy. Rather, development of an intuitive style of financial management was the outcome of the accumulation of experience and knowledge in managing personal finances, signaling increased financial maturity.

Portions of guided tours that captured the use of intuition as a financial management strategy had three common elements. First, young adults shared the motivation of needing to control spending. Second, young adults recognized the value of personal financial data for financial sense-making and shaping financial actions. Third, young adults described abandoning their previous financial documentation practices in favor of use of the financial touch and an intuitive style of financial management. Abandonment suggested young adults were able to satisfy the need to construct financial narratives in new ways, therefore reducing the perceived benefits associated with previous financial documents and management strategies. This pattern was seen across several participants.

Dan, an engineering student close to graduation at the time of research, described developing a more intuitive financial management style during the years of emerging adulthood. Dan's use of intuition coincided with a paid internship position, which increased his overall sense of financial security. At the start of his internship, Dan described wanting to make the most of the money he earned and to use it well. He also experienced greater pressure from his family to be more financially independent because of his new income, such as being responsible for paying for his own rent, car insurance, and grocery expenses. When asked about abandonment of his spreadsheet during his internship, Dan described a shift in value associated with his previous processed for financial tracking,

> The less I cared, yes. [At first] it [my spreadsheet] was more just to see, to evaluate the trend in how I was spending and to just make sure [that] it was acceptable. And then after that, once I trusted myself to make these purchases, then I thought it was fine, so I just stopped keeping track of it. I was able to stick to it [my budget].

Financial adulthood is defined using a combination of personal qualities reflective of financial maturity, as well as the ability to fulfill the social roles and expectations of adults (Mary, 2014). The financial coming-of-age process required Dan to be able to see and appraise his own financial actions, and then act with the financial restraint he associated with financial adulthood. With evidence that he was in control of his spending, Dan was able to develop confidence in himself as a mature financial actor. Dan's original motivation for creating a self-authored personal financial document was financial sense-making, which he achieved through his spreadsheet. When probed, Dan admitted to experiencing a decrease in value of his spreadsheet after satisfaction of his original information need. As Dan became better at controlling his spending, he started using a more intuitive approach to financial management that required limited support from self-authored financial documents.

Anastasia also described transitioning to a more intuitive style of financial management during her emerging adulthood years, which reflected her increasing financial stability and maturity,

> I used to do that [record my spending] just to see during the first years in Canada. They were my first years after I was 18 and I was kind of taking control of my life [at that time]. It was interesting to see my spending patterns but now I know my spending pattern and I don't have any much spending, impulsive spending, so I don't do this that much. One of the reasons I made a budget was to show my parents and to discuss it with them, which I think is a very good thing but now all my spending is under control, and I previewed them, I don't feel I need to make the budget in this sense, in the 'real budget sense' for a month or for the year.

As seen in the previous examples and throughout this thesis, understanding spending patterns and making sense of financial situations is a common information need during the period of emerging adulthood. The transition from adolescence to young adulthood is characterized by new financial responsibilities, as well as opportunities for exploring financial agency. Anastasia originally found value in budgeting as a means for taking control of her own life as a young adult and settling in Canada after leaving Russia with her family. Like others, Anastasia felt pressure to control her spending as a symbol of financial maturity and financial adulthood. Through financial tracking, she described being able to see her spending patterns and identify impulsive or immature behaviors that she would need to eliminate to successfully come of age. Unlike other participants, Anastasia disclosed how the shift in value associated with self-authored financial documents occurred with financial socialization by her parents. The original value she experienced in these kinds of records was to support financial communication and prove her financial restraint to her parents. As seen in the other examples in this section, satisfaction of information needs resulted in shifts in the value of both financial records and financial management practices, resulting in movement towards an intuitive style. Vosylis, Sorgente, and Lanz, (2021) found that financial maturity was associated with greater levels of confidence and commitment to financial management practices. Participants' adoptions of intuitive styles of financial management and reduced reliance on self-authored financial records was an example of the enhanced confidence young adults experience during emerging adulthood. As young adults became more confident in their ability to control spending, they experienced a reduction of commitment to maintaining self-authored financial documents and greater reliance on intuitive styles of financial management.

Young adulthood was a period of flexibility during which young adults could experiment with different styles of financial management, including how they managed associated records. Jenny, the third-year economics student who moved from Vancouver to Montréal for university, explicitly described her current financial management style as "intuitive" in her guided tour. Unlike other participants, Jenny's transition to an intuitive style of financial management did not occur from satisfaction of an information need. Rather, her transition came from a failure of her financial sense-making process. When reflecting on how she manages her personal finances, she disclosed,

> What I have right now is not the best thing, but I am trying. I feel like keeping sheets and stuff just doesn’t work for me and it [my style] is more like an intuitive, “how much have I been spending this month?” kind of deal.

Young adults engage in active reflection, in-depth exploration, and comparison of alternative financial management strategies when they experience dissatisfaction or limitations with their current practices (Vosylis, Sorgente, & Lanz, 2021). Jenny’s use of an intuitive style was prompted by the desire to understand and control her spending like seen in the previous examples. Unlike other participants who expressed a shift in value occurring from satisfaction of the motivating information need, Jenny disclosed abandoning the use of spreadsheets due to their inability to generate their desired value. She disclosed feeling discouraged by inaccurate financial narratives about her level of financial responsibility caused by the way she categorized her personal financial data. Dissatisfaction with her spreadsheet motivated Jenny to explore alternative styles of financial management, resulting in the development of an intuitive style.

Across guided tours, several participants discussed how they developed more intuitive styles for managing personal finances over their years of emerging adulthood. These intuitive styles were interpreted as examples of personal financial wisdom because of young adults’ reliance on abstract understandings of their financial behaviors obtained through personal financial data, and anticipation about the consequences of financial behaviors based on their interpretations of what their personal financial data means, to shape financial their conduct in the present and future. During the years of emerging adulthood, participants described the desire to control spending and eliminate impulsive or unacceptable financial behaviors that demonstrated a of financial maturity and responsibility. As expressions of wisdom, intuitive styles of financial management required implicit understandings of financial situations and the ability to make predictions about outcomes of financial conduct. The financial touch was particularly useful for obtaining feedback on financial behaviors and checking the accuracy of financial intuition. Using the financial touch to monitor spending intuitively was associated with the development of financial wisdom when the financial touch was used to predict the consequences of financial behaviors and anticipate the financial future. Feedback from financial data such as bank account balances and credit card limits provided feedback on the accuracy and effectiveness of participants' financial know-how and their intuitive financial management strategies. Across guided tours, young adults described relying more on intuition as they accrued experience with managing personal finances, resulting in a reduced sense of value attributed to some self-authored financial documents like spending logs and budgets. In most cases, the abandonment of previous financial and records management processes coincided with experiences of successful financial sense-making and financial restraint. Next, I discuss increased confidence in the appraisal financial records as a second example of financial wisdom.

Anticipating Future Needs and Uses of Financial Records

The second subtheme related to financial wisdom identified through thematic analysis was increased confidence in anticipating future information needs and uses of financial records. Across guided tours, young adult participants described engaging in evaluation processes in the a form of making both judgments of themselves as financial actors, as well as about the value of personal financial records, which were interpreted as examples of financial wisdom. Appraisals made about the perceived and anticipated usefulness of personal financial documents informed the decisions young adults made to keep or discard those items. Scholars in personal archiving and personal information management noted how Appraisal of the value of personal records is an important skill in the management of personal collections but previous research has not explored appraisal as an expression of wisdom. Cushing argued that appraisal, as the determination of present and future value of records, is a key form of archival knowledge that the archival profession offers to those concerned with the long-term preservation of personal records (Cushing, 2010). The concept of appraisal is also central to Bergman and Whittaker's (2016) curation model of personal information management, with determination of the future value of records being a persistent challenge faced by personal records managers. Guided tours with young adults illustrated how evaluations of the future value and usefulness of personal records was an important part of managing personal financial records and financial coming-of-age as well.

Two forms of appraisal related to financial wisdom were captured by the guided tour interviews. First, guided tours captured the ways in which young adults used personal financial data to evaluate their own level of financial responsibility and maturity. Rather than determining the present and future value of financial records, self-reflexive uses of financial data were deployed towards making judgments about the appropriateness a young adult's financial conduct. These uses of personal financial data were like the interpretive processes involving personal activity tracker data observed by Feng and Agosto (2019). In the previous section, we saw examples where young adults asked whether their spending was reasonable or lavish as part of using the financial touch to manage personal finances intuitively. In this section, I will explore additional examples of how young adults used personal financial data to reflexively evaluate their financial conduct and assess their level of maturity. Second, young adults described developing a greater sense of clarity about appraising the future value of financial records, which helped them refine and reduce uncertainty in their curation processes. This form of appraisal resulted in a greater sense of ease when making decisions to keep or discard financial records, which suggested the management of personal financial records gets easier and more intuitive as young adults develop increasing amounts of personal financial wisdom. These two distinct uses of evaluation were interpreted as a form of enhanced ability to judge, reason, and think abstractly, and analyzed as examples that correspond with the theoretical definition of wisdom from the Wisdom Hierarchy (Rowley, 2006). First, I discuss self-reflexive uses of personal financial data as a form of evaluation.

Evaluating Fiscal Responsibility

The desire to be a fiscally, or financially, responsible person was a major motivating factor for managing personal financial records among young adults. Being fiscally responsible meant becoming aware of one’s spending habits and controlling spending by restraining impulsive, lavish, or otherwise “irresponsible” and uncontrolled use of financial resources. Personal financial records were important tools for cultivating awareness of one’s financial situation, assessing spending patterns, and making judgments about one's level of fiscal responsibility. The personal financial data contained in self-authored personal financial records and online banking apps and websites was a valued source of feedback on young adults' financial behaviors, which they could use to make evaluations, in the form of value judgments, about their recent financial conduct. As such, many young adults described interactions with personal financial data that were self-reflexive in nature, in which young adults were able to create and revise the perceptions of themselves as financial actors that they hold in their minds. These self-reflexive uses of personal financial data occurred in parallel with financial narrative construction and sense-making processes described in the previous chapter.

As self-reflexive practices, young adults engaged in conversations with themselves about their current level of financial responsibility and the appropriateness of their recent financial conduct. Within these conversations with the self, young adults constructed narratives focused on who they were as financial actors and where they were in their journeys to financial adulthood. The reflexive quality attributed to financial records was an example of personal collections as materials that support the evidencing and documentation of human lives, activities, experiences, relationships, and concepts of self (McKemmish, 1996). Reflexive uses of personal financial data centered around narratives of financial personhood and constructing a perception of oneself as a financial actor.

Personal financial records were important sources of feedback about personal financial behaviors that young adults could use to reflect on the appropriateness of their past financial actions. This retrospective form of self-evaluation was an example of the reflexive nature of interactions with personal financial data used to construct narratives about themselves as financial persons. Financial responsibility was a desirable quality that young adults associated with being a functional adult. As such, the desire to see oneself as a fiscally responsible person was an important underlying motivation for interacting with personal financial data and points to one of the main information needs addressed by young adults during emerging adulthood (Butterbaugh, Ross, & Campbell, 2019; Mary, 2014; Arnett, 1998). The reflexive quality of personal financial data could also be channeled instrumentally to modify future behavior when the feedback received is not in alignment with the expectations and goals that young adults have for themselves as financial actors.

Guided tours captured several examples of how young adults engaged in reflexive thinking about their level of financial responsibility using personal financial data. Reflexive uses of personal data were interpreted as examples of self-presenting and representing of the self functions of personal records (Hobbs, 2001; Kaye et al., 2006) At the time of research, Alex was living alone for the first time as a second-year student, which introduced her to a wide range of new financial responsibilities such as paying for her own rent, food, and tuition. The self-reflexive use of financial records to assess financial responsibility can be attributed in part to limited financial resources among young adults. When asked about her regular financial processes, Alex described how reflection about financial responsibility was a routine part of how she managed her personal finances,

> I guess maybe reviewing, as general categories? Like, "how much have you spent and earned in a month?" I guess then comparing those expenses and then breaking down each category specifically of what you have spent in terms of big purchases and whether they are irresponsible or not.

To successfully transition to financial adulthood, a young adult must reflexively see themselves as possessing the qualities associated with financial maturity (Mary, 2014). Many young adults who participated in this study experienced financial hardship requiring careful tracking of expenses to avoid financial crises. Emerging adulthood was a period of limited financial resources requiring discipline and financial restraint. Like other young adults described in this thesis, Alex described having a monthly process where she categorizes and organizes financial data within a self-authored financial document to generate new information that she can use to interpret her financial situation. In addition to producing novel information about her financial situation, she also evaluates whether her actions demonstrate financial responsibility. Alex's focus was particularly directed towards scrutinizing transactions for high dollar amounts and deciding whether those purchases were appropriate considering her limited resources. Rachel, the recent graduate, and real estate agent who started her own business, also reflected on financial hardship during emerging adulthood and the need to control spending when discussing the value of creating budgeting documents for herself,

> [I try] to be careful not to overspend because my resources are so limited. It just really helped [me] ensure that my money was going where it should be going and that I wasn't overspending in places where I didn't need to such as food for example because living in a city like Toronto, which is where I live, there is [so much] access to restaurants. It is very common in our culture to eat out all the time so that is a perfect example, "My gosh, how much am I spending right now eating at restaurants per month in comparison to how much I am spending on groceries?" and very seriously those things add up, so I am keeping tabs on that for example.

Being fiscally responsible meant living within certain financial parameters and developing spending habits in alignment with financial constraints. It also meant meeting the expectations young adults had for themselves for financial restraint and frugality. Assessments of fiscal responsibility often appear in the form of value-judgments where financial transactions are classified as either "good" or "bad", which in turn, provides either positive or negative feedback about their level of fiscal responsibility. As discussed by Rachel, the journey towards being fiscally responsible requires a degree of financial restraint and resistance to cultural norms and pressures to spend in ways that are not appropriate during the emerging adulthood years. This was interpreted as an example of how young adults also need to see themselves as fulfilling social roles and cultural expectations that define financial adulthood (Mary, 2014). While engaging in appraisal of financial transactions, Rachel describes the generation of new value, such as discovering how much she spends at restaurants versus eating at home, which helped her make value judgements about whether she was spending her money appropriately or not. Alex's reflexive use of her personal financial data is an example of how the mirror-like quality of personal records can be used for crafting, revising, and projecting the sense of self (Kaye et al. 2006; Cushing 2013). The sense of self being crafted, revised, and projected is self-reflexive, in which she is the intended audience rather than using her personal records to project a sense of outwards to others, in contrast to the pattern seen when self-authored financial documents were used to communicate and demonstrate financial responsibility to parents.

Young adults described how appraisals of financial responsibility helped to shape and modify their conduct as financial actors. Participants expressed the desire to act in ways that demonstrated high levels of financial responsibility associated with financial maturity. Arvy, a recent graduate who was also technically homeless at the time of research and sleeping on the sofa of a friend while he worked towards obtaining permanent residency in Canada, disclosed during his guided tour how a built-in visualization tool in his banking app helped him self-reflect on the appropriateness of his financial behavior and realize that his excessive spending on socializing and eating out was an inappropriate lifestyle during his emerging adulthood years. When asked about the impact of his banking app on his financial management, he replied,

> I think it helped me realize how much I go out and it helped me cut down a lot of eating out. Like, I am not joking! I realized I was spending something like $1000 a month or something on eating out, which is ridiculous! And I am like, "Okay, this is ridiculous! I am a 'normal' person!" So, I started [changing my lifestyle] with a lot of groceries and eating at home. Once and I while I do sushi, which is probably my only indulgence, otherwise I was like, "Fuck, I need to reign this shit in, seriously!"

The development of financial independence and maturity often involves periods of uncertainty, dissatisfaction, and difficulties with existing practices, which motivates reflection and evaluation of alternative financial practices (Vosylis, Sorgente, & Lanz, 2021). Financial self-reflexivity through interaction with personal financial records was frequently aimed at identifying problematic behaviors and getting financial conduct back on track. Through his evaluation process, Arvy developed a new understanding of the consequences and long-term unsustainability of his uncontrolled spending, which he applied to change his eating habits to regain control over his financial situation. His evaluation process allowed Arvy to make value judgements about his fiscal responsibility, which resulted in concrete changes in his financial conduct.

Previous related work also notes how negative emotional experiences, such as stress, tend to dominate interactions with personal financial records (Kaye et al. 2014). This was also the case among young adults. During review and analysis of the guided tours, the prevalence of negative emotional experiences during assessments of financial conduct was apparent. Jane described how interactions with her personal financial records were an important tool for "prioritizing getting [her] shit together" before embarking on the next phase of her educational journey. Within her guided tour, she provided an indirect reference to the emotional toll of assessments of financial responsibility,

> I would go at the end of the month when I got my statement, I would look at it and be like, "How much did I spend under whatever categories they put it under on your credit card statement?" So, then I kind of look at that and ask myself "Was that reasonable?" and then I kind of let it go.

Jane hints at the emotional labor involved in self-reflexive uses of personal financial data to make judgments about her level of fiscal responsibility, expressed as a need to emotionally let go and not dwell on negative feedback she receives from her personal financial records. For Jane, the arrival of her monthly statement offers her the opportunity to self-assess her financial responsibility as well as the amounts she spends. Using her statement, she can see patterns in her spending behaviors and make quick judgments about their appropriateness. In doing so, she revises the embodied perception of herself as a financial actor. Self-reflexive uses of personal financial data were stressful negative emotional experiences due to the critical nature of the value judgments being made. Kaye et al., (2014) also found that interactions with personal financial records evoked a range of negative emotions highlighting an affective cost to these kinds of self-reflexive uses of personal financial data and records.

Moments of financial hardship could amplify the negative emotional experiences associated with self-reflection about financial responsibility, sometimes resulting in information avoidance. Sara, the second-year undergraduate student who worked in a university residence disclosed how she got herself into a difficult financial situation, which resulted in the desire to avoid certain forms of personal financial data,

> I feel like, as much as I keep track of bills and stuff, I don't like knowing how much I am spending because it is a tough reality to face. Because it is just [like], "Why do I spend this much money on useless stuff?" So sometimes it is like, "I don't really need to look at all those things." Like, it is nice to know when bills [my] are due but it is not like I am going to look at what I accumulated to form that bill. I guess I just don't like looking at my damage.

Moments of financial crisis were accompanied by emotional experiences of stress and discomfort. Although some young adults like Arvy described being able to use negative emotional experiences to create positive changes to financial conduct, information avoidance was a particular challenge faced by young adults when feedback on financial responsibility received through personal financial data was negative. Other participants described similar tensions between needing to know and the desire to shield themselves from difficult emotional experiences that accompany self-reflexive interactions with personal financial data, such as Gina who also recalled an experience of information avoidance during a moment financial hardship,

> Like, two months ago, I knew I was running pretty low [on money]. But when you get into this cycle where you know that you are running low, you don't want to check your bank account because you know that it is low. So that just makes it lower when you keep spending [on] things.

Gina and other young adults experienced a tension between knowing and avoiding personal financial data during the years of emerging adulthood. To be fiscally responsible, young adults need to interact with challenging personal financial data to know the reality of their financial situation and shape their future financial behaviors. Confronting difficult emotions and overcoming information avoidance was a rewarding experience for some participants like Rachel, who experienced an enhanced sense of self-efficacy and financial independence after confronting challenging financial data,

> [Tracking my personal finances] is depressing. It is depressing because I know I am in debt right now. So, when you look at the red figures, it can be a little bit depressing to kind of have to go through the motions and track your expenses. It reminds you of how much debt you are in but at the same time, it does make me feel more comfortable to be aware and to know what is going on. To be able to track my spending really helps too.

Rachel's passage highlights how times of financial crisis can also motivate closer and more frequent interactions with personal financial information despite tendencies towards avoidance. Self-reflexive evaluations can also be used to create a sense of comfort as well as enhanced feelings of self-control and self-efficacy associated with increasing levels of financial maturity as young adults develop more experience managing personal finances. Reflexive uses of personal financial data illustrate the mirror-like quality of personal records that allow individuals to craft, revise and project the sense of self to themselves and others (Kaye et al. 2006, Cushing 2013). Rather than projecting outwards towards others, insights about the self, created with personal financial data enhanced the ability to predict the outcomes of financial behaviors if left unmodified. In this way, financial wisdom, in the form of greater insight into why financial behaviors must change in addition to how, was used to shape financial conduct and bring it into greater alignment with the actual financial resources available to young adults. Next, I discuss how young adults developed greater confidence in their appraisal processes for financial records throughout emerging adulthood.

Learning to Appraise

In addition to self-reflexive evaluations, the guided tours captured how young adults develop greater confidence and commitment to their processes for appraising the value of personal financial records during the financial coming-of-age process. As young adults gained experience managing personal finances and records, they expressed greater confidence in how they managed their personal collections with particular emphasis on keeping and discarding decisions. This greater sense of clarity about the value and effective use of records, and growing commitment to their records management processes, was interpreted as a form of personal financial wisdom that develops as young adults develop financial maturity.

Previous research in PIM also recognizes that appraisal of the future value of personal records is a particular challenge faced in curation (Bergman & Whittaker, 2016). Judging the future value of financial documents is a particular skill that young adults associate with the accumulation of experience in financial records management. A common example of the empowerment and sense of self-efficacy that young adults developed over time was an enhanced ability to make decisions about which financial records are worth keeping. For example, Kim, a fourth-year political science student close to graduation at the time of research, described how keeping decisions became easier to make as she gained experience managing personal financial records,

> Well, you don't want to end up with a massive number of papers that you will never want to look at again because then you can't find your own papers [within your own collection] and plus it is useless. So I guess my strategy has changed in the sense that I am getting better at learning what is trash versus not trash because I used to save every paper that ever came my way and then I would realize that I can't find it as easy and some of these papers are never going to be useful again so sorting through things and throwing things out and parting ways with this paper knowing it is going to be okay.

Kim experienced a greater sense of self-confidence and trust in herself as an effective records manager as she neared the end of her emerging adult years. She described how she became more confident in making records management decisions over time, including what to keep and which format. Kim expresses this as having a greater ability to distinguish between what to keep and what records can be disposed of due to their limited secondary or intrinsic value. Her ability to distinguish between records that have future uses or are inherently valuable and therefore worth keeping in order to avoid uncontrolled accumulation is an example of how archival appraisal is relevant to the management of personal records, as suggested by Cushing (2010). She also expressed having a greater understanding of the consequences of overkeeping caused by ineffective appraisal, such as being unable to find documents she needs. As Kim gets older, she seeks to avoid the information overload long recognized by PIM researchers because of delaying or avoiding keeping decisions and appraisals of future value (Whittaker & Snider, 1996; Whittaker, Bellotti, & Gwizdka, 2006). Rachel echoed a similar sentiment about experiencing increased efficacy in making keeping decisions as she ages,

> I will overkeep more than I underkeep, that is for sure. I just know. It is mostly just information materials and stuff I don't need because I either have it digitally in another place or it is not relevant anymore. It is pretty easy to distinguish what to keep and what not to keep. Literally, I keep receipts, government documents, and like banking statements. In between that, there is very little margin for confusion or error.

The ability to make appropriate decisions was related to an enhanced sense of appreciation of the evidence value of financial records, a function long recognized by personal archivists (Cox, 1996; Cushing 2010). Rachel expressed this through her statement that she keeps receipts, governmental records, and statements with little margin for confusion. Like Kim, Rachel also experienced greater clarity about the future or intrinsic value of personal financial records as she neared the end of her emerging adulthood years despite still struggling with overkeeping.

Arvy describes a similar sense of clarity about the evidence value of certain financial records and their future value,

> So, I would keep payment stubs, I think those are crucial, that is proof of work and proof of earning. And once that is out of the way, I think what goes hand in hand with that is tax return summaries on all those payments that show proof of tax paid, which is crucial.

Like the other participants discussed in this section, Arvy expresses his enhanced ability to appraise personal financial records by clearly articulating the evidence value of documents and anticipating the ways he will use them in the future. He also expresses greater awareness of the uses of financial documents in the fulfillment of civic responsibilities and obligations, such as reporting income and paying taxes, which are activities strongly associated with full financial adulthood (Mary, 2014; Vosylis, Sorgente, & Lanz, 2021). Although guided tours captured fewer examples of appraisal of personal financial records as examples of financial wisdom, the examples presented above illustrate how financial coming of age and the development of financial wisdom does impact personal financial records management processes.

Coming of Age Through Personal Finance

Across the guided tours, there was a strong overarching narrative of coming of age that contextualized the experiences that young adult participants have with personal financial records management. Young adults described the coming-of-age process as the development of personal financial knowledge and wisdom in the form of practical skills and values needed to manage both money and financial documentation. The development of practical financial skills and values was interpreted by participants as embedded in a process of growing up and becoming true financial adults, who are capable and ready to manage their personal finances and records independently and effectively. The associations that young adults made between financial records management and adulthood were interpreted as an example of “the constructive nature of language use” through which people can give glimpses into how they produce, organize, and experience social reality through the ways in which they talk or write (Tuominen & Savolainen, 1997, p. 82). Conversations with young adults about the creation, use, and management of personal financial records contained insights into the ways in which financial records management, as human-information interactions, is also a social practice that is informed by understandings, rules, intentions affective moods, and social conventions inherited from the societal contexts in which the information practice takes place (Cox, 2012, p. 63). Conversations with young adults revealed how social discourse and social practices associated with coming of age and attaining the social status of adulthood motivated and provide meaning for the development of practical financial records management skills and practices during the period of young adulthood. Conversations with participants also emphasized how personal financial records management is a practical context through which young adults work towards achieving financial independence and maturity. Enhanced visibility of interactions with personal financial records during young adulthood offers researchers and financial service providers new opportunities to support the development of both financial and records management literacy during this critical period of human development. The following sections provide an expanded overview of these five features of emerging adulthood before turning to an in-depth discussion of the themes and subthemes that capture how interactions with personal financial data and documentation are embedded in a coming-of-age process during the period of emerging adulthood.

Identity Exploration Through Personal Finance

During the guided tours, identity exploration was seen in the reflexive practices young adults described when interacting with personal financial records. Interactions with the contents of personal financial records were experienced as opportunities for financial self-discovery and self-understanding through sense-making processes as described in Chapter 6. Participants reflected on their emerging adulthood years as a time to experiment with different styles and tools for personal financial records management. The period between the ages of 18 to 25 was experienced as affording opportunities to make financial mistakes and learn through trial and error while parental mentorship and financial support was still available. Several participants spoke of instances where their own personal financial data and feedback received from parents resulted in “reality checks”. Young adults became more aware of the need for changes to their financial behaviors and records management processes to fulfill social expectations for fiscal responsibility and independence as they neared full adulthood. As an age of identity exploration, emerging adulthood is marked as a period of experimentation, flexibility, and reflexivity that extended to the experiences young adults had with financial management and interactions with collections of personal financial records.

Financial Self-Focus

The guided tours captured how participants sought to achieve greater degrees of financial independence and self-sufficiency through financial tracking. Financial independence was a powerful symbol of adulthood among participants and effective records management was seen as directly connected with the achievement of financial self-sufficiency. Conversations with young adults revealed how although people in this age period do experience greater degrees of personal autonomy than ever before, their experiences are not completely free of all social obligations and duties associated with adulthood. Rather, young adults described feeling social pressure to control their spending and develop effective records management processes in preparation for handling the responsibilities associated with full adulthood and their lives after graduation from university. Young adults described taking on incremental and increasing levels of financial responsibility between the ages of 18 to 25 and felt a sense of duty to refine their skills managing financial documentation. At the same time, young adults felt sheltered from many of the social and financial consequences of financial mistakes and breakdowns in financial records management processes, reflecting a reduced sense of obligation and responsibility indicative of emerging adulthood as an age of self-focus. This was especially seen when young adults speculated on how major life events after graduation, such as working full time, having a family, or acquiring property, would introduce adult financial challenges and responsibilities that require adult records management knowledge and capacities. Therefore, although young adults do experience fewer social obligations and responsibilities in comparison to older cohorts of adults, they are not completely free from financial obligations and responsibilities during the period of emerging adulthood, and their experimentation with different styles of financial and records management practices reflected social discourses about fiscal responsibility and organization as qualities of adulthood.

Residential Instability as an Initiator of Financial Records Management

For many participants, the geographic move that accompanies post-secondary education, in which they move out of their parental home and establish their own independent household created new awareness of their personal finances and the importance of financial records management. Several participants described dramatic geographic moves to Montréal from a variety of locations during their young adult years (i.e., British Columbia, Saskatchewan, Manitoba, New Zealand, India, Russia, China, Italy, and the United States). Some participants planned to make additional dramatic geographic relocations away from Montréal soon upon completion of their studies. The frequency of changes in residence captured how emerging adulthood is a period of residential instability.

Geographic moves were a transitional event that necessitated personal financial records management. Establishing an independent household was a common necessitating factor for starting to develop financial records management skills and processes. Upon moving, several young adults described finding themselves thrust into the role of designated records manager of their new independent household when living with roommates. Several participants discussed how their parents played active roles in preparing them for the changes initiated by the processes of moving out of their family home and into their first independent living situation. Parents were described as preparing young adults for this transition by modeling basic skills in personal financial tracking and planning strategies in the home prior to big moves that young adults could later use while living on their own. Guided tours captured how moves were an important opportunity for the transfer of financial knowledge between parents and their young adult children as well as environmental contexts for experiential learning about personal finances.

In-Between Financial Dependency and Independence

Guided tour interviews revealed several instances in which young adults expressed feeling in-between life stages. This was particularly the case when reflecting on the ongoing forms of financial and records management support that they received from their parents, such as during periods of financial crisis or during tax season. Young adults also expressed awareness that young adults receive different levels of support during the years of young adulthood, pointing to a high degree of diversity in starting and ending points for the transition to full adulthood. Some participants attributed this diversity to differences in socio-economic realities that require some young adults to achieve financial independence sooner than others, with direct experiences of financial hardship and debt as important early initiators in their quests for achieving adult fiscal responsibility in comparison to their peers. Coping with financial hardship and the differing levels of support offered by parents reflected the in-between state of many young adult participants.

Another way in which guided tours captured how emerging adulthood is an age of in-between was in the ways in which young adults speculated about adult milestones and transitional life events that would necessitate fully realized adult financial records management skills. Milestones symbolizing adulthood included graduation from university, earning a professional income in their chosen line of work, big purchases like a car or house, and starting a family through marriage and having kids. There was disagreement among young adult participants about the real impact of adult milestones and the degree to which they necessitate or initiate further development of adult personal financial records management skills and practices. Participants closer to the age of 25, who completed undergraduate degrees, expressed less of an impact on how they manage their personal financial documentation than anticipated when they were younger. These discussions emphasized how the early emerging adulthood years might be a critical developmental period for financial and records management knowledge and wisdom with long lasting impacts for the remainder of a person's life.

Optimism About the Financial Future

Young adults attributed the development of new skills and practices related to managing money and financial documentation as instrumental towards their self-actualization as the kinds of people they want to be as full adults. Young adults often described using personal financial records management to achieve broader non-financial goals and dreams they set for themselves, such as completing post-graduate studies abroad or obtaining a career within their chosen fields. The goals that young adults work towards through financial tracking and planning highlighted the degree to which participants saw their futures as flexible and full of possibilities. Young adults also discussed a variety of contexts for experiential learning through which young adults were able to develop financial skills and practices as part of their paths towards self-actualization. Through experiential learning, young adults were aware of their ability to change and acquire news skills and practices that will serve them later in life.

Financial Knowledge and Wisdom in the Coming-of-Age Process

Although the theory of emerging adulthood acknowledges financial independence as an important criterion that young adults use to define adulthood, the theory itself says little about the role of personal financial records management in making the passage from adolescence to adulthood. Consequently, the presence of personal financial records, including the records young adults create and consume as part of navigating the period of young adulthood, are largely invisible within related literature on emerging adulthood. PIM researchers Piras and Zanutto (2010) also note the invisibility and lack of appreciation of personal records and their supportive role in health care. Their research explored a similar lack of recognition of the value generated by patients while collecting and organizing personal health data and records. They recognize personal health record management in the home as a process that adds value in the coordination of complex health conditions and supports effective physician-client communications. They argue that personal health information management in the household is a form of “invisible work" because of its devaluation in comparison to records management performed by the medical profession.

Invisible work refers to unpaid labor "in the private world of the home, the volunteer work in the public sphere, and the emotion work in both public and private worlds." (Daniels, 1987, p. 412). Invisible work is socially devalued because of its associations with the domestic sphere, femininity, altruism, and lack of monetary remuneration, allowing it to be unrecognized as legitimate forms of labor (Daniels, 1987). Young adults are particularly susceptible to having their labor devalued and rendered invisible, "since work is associated with adulthood, an implication of the folk concept is that those who do not work are not fully adults." (Daniels, 1987, p. 404). Personal financial records management can also be characterized as a form of invisible work. People rarely receive expert guidance on how to appraise, organize, and exploit their financial records in the private sphere. Furthermore, the role of financial records in supporting the development of financial literacy and financial independence of young adults remains unrecognized due to the invisibility of personal financial records management in general. In contrast, records management is recognized as a specialized skillset and profession within the public sphere, with many industries and organizations developing explicit policies governing all aspects of the document lifecycle to fully capitalize on records as an organizational asset, especially in the context of accounting.

Butterbaugh, Ross, and Campbell's (2019) model of the financial independence process included a concept of financial knowledge. Financial knowledge is defined as "an awareness and understanding of basic financial concepts such as credit, savings, interest, investing, taxes, and insurance" (p. 37). Financial knowledge is conceptualized as a tangible asset, in the form of financial education programs, or as intangible assets within people, such as technical and social skills that can be applied for creating financial wellbeing and achieving financial independence (Butterbaugh, Ross, & Campbell, 2019, p. 37). Butterbaugh, Ross, and Campbell recognize two forms of financial knowledge. Subjective financial knowledge is one's perception of their understanding (Butterbaugh, Ross, & Campbell, 2019, p. 37). Objective financial knowledge is the ability to demonstrate financial knowledge through testing or assessment (Butterbaugh, Ross, & Campbell, 2019, p. 37). Butterbaugh, Ross, and Campbell's concept of financial knowledge conforms with the concept of financial knowledge used in this thesis, which signifies financial know-how or procedural knowing where young adults can apply and translate financial data and information into financial action. Subjective and objective forms of financial knowledge bear resemblance to tacit and explicit forms of knowledge, with subjective knowledge being tacitly held and embodied while objective knowledge is demonstrable and codified in a linguistic and documentary form allowing it to be verified and shared. Although Butterbaugh, Ross, and Campbell credit financial education in school and workplace environments as improving financial literacy and shaping financial knowledge, their model of financial independence only addresses the knowledge tier of the Wisdom hierarchy, illustrating how data, information, and the role of financial records constitutes a gap in the literature and a form of invisible labor that supports financial coming of age.

The concept of financial wisdom remains relatively unexplored. This gap within the literature on emerging adulthood parallels the elusiveness of wisdom as a concept even within Information Studies (Rowley, 2007). One exception is the finding that financial goal setting was important for successfully controlling spending and reducing impulsive buying (Vosylis, Zukauskiene and Crocetti, 2019, p. 6). Goal setting was a quality of financial maturity and greater self-awareness as a financial actor. Goal setting requires the application of financial wisdom, in the form of developing a vision for the future, making financial predictions and forecasts as part of developing strategies to achieve established financial goals, and anticipating the consequences of financial behaviors that can prevent achievement of desired ends. Goal setting was also an important opportunity for financial identity exploration and interpreted as protective against the tendency to use material goods and impulsive spending as a substitute for financial identity among young adults (Vosylis, Zukauskiene & Crocetti, 2019, p. 5). In the guided tours, young adults were seen to engage in self-reflexive conversations with the self in the form of appraisals about the appropriateness of their financial behaviors, which can be interpreted as a form of identity exploration as themselves as financial actors. Questions remain about how personal financial data and records can support the development of personal financial wisdom by enhancing self-awareness, the ability to make financial predictions based on lessons learned from past experiences, or apply financial knowledge received from others through financial socialization and education.

Transitional Events Signifying Financial Adulthood

Now I return to our discussion of the central organizing concept of coming of age through personal finance. Typically, transitional roles and events are not associated with perceptions of completion of the journey from adolescence to full adulthood (Arnett, 1998; Mary, 2014; Vosylis, Sorgente, & Lanz, 2021). In contrast to past work, young adults frequently anticipated how adult milestones and future life events might necessitate changes to their financial records management processes during the guided tours. Although emerging adulthood was an important period for the development of foundation skills in managing money and personal financial records, young adults believed this process did not end with achievement of financial adulthood despite making clear associations with transitional roles and events as marking the end of the period of emerging adulthood.

At the end of each guided tour, participants were asked to reflect on changes they thought they might make to how they managed their collections of personal financial records in the future. Discussions of future life events and milestones that might necessitate additional changes to how young adults manage their personal financial records and financial resources raises questions unanswered by this thesis about the durability of personal financial records management processes developed during the years of emerging adulthood. Vosylis, Sorgente, and Lanz (2021) argue that culmination of the financial coming-of-age process results in commitment to financial management practices. Discussions with young adults during the guided tours revealed mixed perceptions about their level of commitment to their current records management strategies.

Cushing (2010) argued for greater use of the lifecycle approach and knowledge-translation of the concept of archival appraisal for the personal sphere in the theoretical conceptualization of personal records. Within the research areas of Personal Information Management and Personal Archiving, the lifecycle approach is used to conceptualize the value of personal records from their moment of creation and primary use to their eventual destruction when a personal record no longer has secondary or intrinsic value to their owners or custodians. Conversations with young adults about milestones and life events that would necessitate revisions or reinventions of personal financial records management processes might suggest that records management styles and strategies might also have lifecycles, which might offer an alternative explanation for the examples of abandonment and reliance on use of the financial touch captured by the guided tours. Although this thesis does not attempt to answer this question, this section provides an analysis of examples from the guided tours as a final means for making the argument that financial coming-of-age was the central organizing concept in the development of personal financial knowledge and wisdom among young adult participants.

An important transitional event discussed by participants was the completion of post-secondary studies. With graduation, participants anticipated changes in employment and income that they associated with financial maturity and being a real adult. Kate, a first-year nursing student, anticipated that graduation from her university program might initiate changes in her financial records management strategy,

> I think maybe [I see myself] going more digital because the hour that I spend doing this, I find it to be a lot [of time]. Maybe when I start working a full-time job after I graduate, maybe I will change it [my records management practices] but since I don't earn that big of an income, maybe [I will need to make changes] after the next few years, after I graduate.

For Kate, graduation from her undergraduate nursing program is an important symbol of the end of young adulthood. She anticipated how the increase in income associated with full-time employment after graduation would necessitate changes to the way she manages her personal financial records. In particular, she expresses interest in transitioning from paper-based financial recordkeeping to digital recordkeeping to reduce the time and effort she spends manually tracking expenses by recording data about financial transactions on a sheet of paper she carries in her wallet. As seen in the previous sections, young adults nearing the end of the emerging adulthood years expressed consolidating some of their personal financial record management processes. Consolidation was towards a more intuitive style of financial management as they developed increased confidence in themselves as effective financial managers and sought to reduce the amount of time and efforts they invested in financial records with diminishing primary value.

Kim, who was near graduation at the time of research, echoed a similar sentiment that full-time work was an important milestone that would initiate her into full adulthood, requiring changes in how she managed her personal finances,

> It [this guided tour] has made me reflect on how much I am going to have to change next year when these things actually matter. And just having the income of having a working professional compared to a work-study student is going to definitely change things. I am going to have to save up for a mortgage ASAP, so that is obviously going to change how I do finances because I am going to have to keep track of what the interest rate is and when to get a mortgage and how much I can afford.

Kim anticipates that her personal finances after graduation will take on a new level of seriousness that she does not associate with her current practices as a student. She believes working as a professional in her field and achieving her goal of home ownership will necessitate new levels of financial awareness and new records management practices to reflect new financial roles and responsibilities in the next phase of her life.

Young adults also identified romantic domestic partnership and starting a family as a future life event that might necessitate changes to how they manage their collections of personal financial records. When asked about budgeting, Jenny, an undergraduate student who moved to

Montréal from China, disclosed not engaging in budgeting as a student unlike many other participants. Rather, she saw budgeting and financial planning as adult financial practices, “No [I don’t have a budget] because I live on my own, so I don’t have a plan. When I have a family, I will probably make a plan.” Jenny identified marriage and parenthood as future life events that will require new practices that she did not feel were appropriate at this stage of her life. Starting a family was a potent symbol of full adulthood, which some participants like Jenny linked with ideas of enhanced financial responsibilities and knowledge-production activities. Jenny’s example captures how emerging adulthood as an age of in-between, where young adults are free from some of the responsibilities and expectations placed on adults (Arnett, 2000; 2006).

Some participants expressed the belief that personal finances and records management becomes more complicated with age. Lana, a PhD student who moved from Saskatchewan to Montréal for graduate school, shared her perspective on how things get more complicated and require new practices,

> In the future, I can definitely see that I am going to have to make big changes and get a more organized system. I mean, if I get a real job or get property or you know, sort of big expenses like a car, it will require me to be much more organized and I will just have so much more material to deal with. And also, as I get older, there are financial things that you are supposed to start saving for, your retirement or kid’s education and stuff, so I will have to figure that out in the future. So basically, I will have to pay more attention and be more involved as it gets more complicated.

Lana’s dialogue captured many of the major life events that participants evoked as symbols of financial adulthood in a comprehensive way. She summarized a social discourse that defines adulthood and financial maturity as an archetypal trajectory of milestones that punctuate the adult portion of the human lifespan. These milestones in her archetype of adulthood include employment, the purchase of assets such as a home and car, parenthood, and eventually retirement. Lana sees financial records management processes and activities as adaptive responsive to the needs and conditions of adulthood, such as having more records to manage that require greater levels of attention to details to manage effectively. In a sense, many young adults had trouble identifying an exact point in which they would become “full-fledged” financial records managers despite being able to point to specific milestones, in the form of transitional events, that would make them full adults.

Across guided tours, it became clear that young adult participants did not see personal financial records management as a set of static skills that remain the same throughout adulthood. Rather, personal financial records management was seen as a continuous process responsive to the different challenges and experiences young adults will face throughout their lives. Responses from participants seemed to indicate that personal financial records management practices might be episodic in nature, responding to the specific information needs and environmental conditions present at that point in time in a person’s life. Furthermore, admissions by young adults of abandoning former self-authored financial records and records management strategies over the course of emerging adulthood seems to suggest that the strategies and activities people use to manage personal financial documentation might also have distinct lifecycles of their own. On the other hand, Chris, an unemployed but recent graduate at the tail end of the emerging adulthood years, reflected on how expectations of changes in records management processes during adulthood might not always reflect reality,

> It [my recordkeeping practices] haven’t changed as much as I would have thought in a sense, which is interesting. From being a student to being a full-time employee somewhere, I don’t feel that it changed that much. That being said, it has to go back to the lifecycle, I am still a very young individual. I consider myself [as having] “undergrad-age mentality” and that is a struggle, but maybe as I get closer to 30, then I think the budget will change.

> And I am not very materialistic either so I won't have that many things, but rent may become a mortgage payment, you know, and that is the one, and maybe car payments will pop up too but no, it hasn't changed as much as I thought it would to be honest to you.

Chris expresses difficulty distinguishing whether he has crossed the threshold into full adulthood after graduation, stating how he continues to think of himself as having an undergrad-aged mentality despite having recently graduated with full-time work experience in his field. At the time of research, Chris was unemployed and searching for a more interesting job in his profession to officially launch his career post-graduation. Consequently, Chris still felt like he was in emerging adulthood as in-between age and social identity (Arnett, 2000; 2006). Chris discovered that his personal financial records management processes were more durable after graduation than he originally anticipated. Like other participants, he anticipated changes to his financial obligations that come from archetypal milestones associated with adulthood, such as acquiring assets like a car or home. Despite anticipating different contextual factors in adulthood like owning property, he expressed doubts that these will result in fundamental changes in how he manages his personal finances and records. Instead, he reflects on his recent experience of graduating from university as a comparable experience that led him to the conclusion that the changes he experienced were much less dramatic than previously anticipated, in alignment with Vosylis, Sorgente, and Lanz's (2021) finding that the financial coming-of-age process results in commitment to existing financial practices, which may also translate to how people manage their financial records.

There is a need for increased attention to the management of personal records over the human lifespan to ensure people do not lose access due to benign neglect (Marshall, 2007, 2008a, 2008; Marshall, McCown, & Nelson, 2007; Lindley et al., 2013). Chris' assessment of the changes he experienced begs the question of how durable financial records management practices developed during emerging adulthood remain later in life. This question becomes increasingly pressing considering the guided tours captured the tendency among young adults to rely on financial service provider information systems as a long-term preservation strategy for personal financial records and data. This question cannot be answered by this thesis due to its design and focus on young adults between the ages of 18 to 25.

The answer to this question has implications on whether and how to support financial socialization by adults such as parents, financial professionals, and potentially information professionals as well. At present, young adults receive limited formal instruction in records management processes despite their value and use in financial knowledge-production. Guided tours captured how knowledge-transfer of financial thinking and financial recordkeeping practices as forms of financial knowledge between parents and their young adult offspring was a routine part of the financial coming-of-age process to prepare young adults for living independently during the emerging adulthood years. Guided tours also captured how young adults adapted and consolidated their financial recordkeeping practices as they accumulated financial wisdom in the form of hands-on experience. Personal financial data and records were seen to support reflexive conversations with the self, within which young adults assessed their own transition to financial adulthood through appraisal of data documenting their financial conduct. Despite the lack of answer to this question, the guided tours highlight how financial records management and interactions with personal financial records are embedded in the financial coming-of-age process and implicated in the ideological transition from adolescence to adulthood.

Conclusion

In this chapter, I presented the findings of a thematic analysis that explored the acquisition and development of skills and practices for financial management, including the management of personal financial records. Coming of age was the central organizing concept that emerged out of inductive Reflexive Thematic Analysis. The ages of 18 to 25 was a liminal period between adolescence and full adulthood, during which participants described learning, practicing, and mastering financial management. Participants described using the period of emerging adulthood to develop financial knowledge in the form of practical skills for processing and using financial records effectively, and financial wisdom in the form of an intuitive style of financial management. In developing financial knowledge, discussed two key contexts that helped them to develop the knowledge and experience they needed to become financial adults: (1) learning through parents as role models and experts, and (2) learning via direct personal experience during the period of emerging adulthood. In developing financial wisdom, young adults sought to learn how to manage personal finances intuitively and appraise records effectively to control collection volume and reduce time and effort costs. Through successful acquisition of financial knowledge and wisdom, several young adults came to see themselves as becoming mature adult financial actors, but participants saw their evolution of financial records management skills and practice continuing into the period adulthood in response to changing needs and financial conditions. In the next chapter, I discuss overarching conclusions of this research, summarize the contributions made, and reflect on opportunities for future work.

Chapter 8: Conclusions

In this chapter, I provide a summary of the main findings of the deductive and inductive analyses presented in the previous chapters. Afterwards, I turn to a discussion of the main contributions made by this research and their implications for future research in the areas of personal information management and personal archiving. Then, I discuss practical implications of my findings before reflecting on opportunities for future work.

The first overarching aim of this doctoral research was to address disagreements among researchers about the conceptual definition of personal information and inconsistencies in use of the terms “information” and “data” in personal information management research. To do so, I analyzed collections of personal financial records and audio recordings of discussions with young adults about financial recordkeeping to identify examples of personal financial data, information, knowledge, and wisdom as well as instances of knowledge-production and knowledge-transfer during interactions with financial records and information systems. The second overarching aim of this doctoral research was to explore the development of personal financial skills and practices during emerging adulthood. To do so, I specifically examined how young adults use financial documentation during the ages of 18 to 25 and the ways in which narratives about coming of age, financial responsibility, and financial adulthood shape the ways in which young adults understand their own financial records management.

Examples of data, information, knowledge, and wisdom in the context of young adults' personal finances were identified through qualitative deductive analysis using Rowley's (2007) synthesis of the Wisdom Hierarchy as a theoretically informed coding scheme. Personal financial data refers to the contents of self-authored financial documents such as spending logs and spreadsheets that young adults created to capture factual details about their financial transactions and behaviors. Personal financial data also refers to the content of financial service provider information systems, including online banking websites and apps, which young adults consume frequently to track their spending and develop a general understanding of their financial situation, which previous researchers Kaye et al. (2014) term use of the financial touch. Personal financial information is new insights that young adults infer from personal financial data. New personal financial information was produced through organization and exploitation of personal financial data within self-authored personal financial records, such as through the characterization of expenses and calculation of sums that helped young adults interpret the meaning of personal financial data. Some young adults also reported generating personal financial information through their consumption of personal financial data through financial service provider information systems. The production of personal financial information from personal financial data occurs through sense-making processes using the financial touch. Personal financial data served as a form of feedback on financial conduct, which enabled young adults to revise financial narratives about their financial situation held in their minds. Financial knowledge is procedural and experiential financial know-how. Sometimes parents transmitted their personal financial knowledge to young adults using scaffolding as part of the socialization of financial thinking and records management processes, extending findings from previous research on the importance of parents in transmitting financial know-how (Mary, 2014; Lanz, Sorgente & Danes, 2019; Damian, et al., 2019; Allsop et al., 2020). Personal financial knowledge could also be generated by young adults through the accumulation of direct and practical experience managing personal finances and associated records, especially in the context of their first residences away from their family's home. Young adults reported a strong association between the concept of financial knowledge and human sources. Personal financial wisdom is the ability to anticipate and predict financial outcomes and consequences because of accumulated personal financial knowledge. Personal financial wisdom was reflected in the tendency among some participants to abandon their personal financial record management process in place of using the financial touch to track changes in their financial situations.

The development of personal financial records management skills and practices among young adults was strongly embedded in social narratives of coming-of-age and adulthood. As part of the transition from adolescence to adulthood, young adults strived to become financially responsible and independent. Personal financial data and records were important resources for making self-reflexive assessments of one's level of financial responsibility as well as for demonstrating one's financial restraint to others, such as parents. Contrary to previous findings on the impact of limited impact of transitional life events in defining adulthood, (Arnett, 1998, Mary, 2004), some young adults anticipated that other transitional life events such as graduation, getting married or having a family, and buying major assets would necessitate further changes to how they manage their personal financial records while others suggested their practices changed less than anticipated after completing some of these transitional life events such as graduating from university. Next, I turn to a discussion of the contributions made by this research.

Contributions

This research makes contributions to the small but growing body of work on personal finances during emerging adulthood and the ways in which personal financial behaviors and experiences can be supported through records management and ICT design. It also contributes to the areas of personal information management and personal archiving by reflecting on the compatibility of the knowledge-production and knowledge-transfer approaches to describe and explain human-information interactions with personal records. This section provides a summary of the contributions made by this research.

A Detailed Description of How personal Financial Records Management is Implicated in Financial Coming of Age

The first contribution of this research is a detailed description of young adult personal financial records management. It explores the topic of financial coming of age from a uniquely Information Studies perspective. It demonstrates how the development of personal financial skills and practices is embedded in the coming-of-age process (Arnett 1998, 2000). It confirms findings of past work that claim financial independence is a potent symbol of adulthood (Arnett 1998; Xiao et al., 2014; Mary 2014; Hoge et al., 2017; Butterbaugh, Ross, & Campbell, 2019). It shows how young adults use personal financial data to make sense of financial situations as well as define who they are as financial actors as they work towards achieving greater levels of financial independence and self-sufficiency.

Results of this research provide designers with a better understanding of the information needs of young adults and the ways in which social context shapes information needs and uses.

The period of emerging adulthood is a time in the lives of participants during which the development and refinement of financial records management skills and processes is critical for navigating financial hardship and in preparation for the financial demands and responsibilities participants will face later during adulthood. It highlights how parents play pivotal roles in facilitating the transition to adulthood through the dissemination of financial skills and practices, which young adults refine during their emerging adult years and may use throughout the remainder of their adult lives. The pivotal role played by parents highlights how humans as experts can be sources of experiential know-how not often found in print documents, reinforcing findings from previous research on financial socialization of young adults (Mary, 2014; Lanz, Sorgente & Danes, 2019; Damian, et al., 2019; Allsop et al., 2020). PIM research rarely considers human expertise and the tacit knowledge they possess as resources located within personal spaces of information, although Whittaker and Hirschberg (2001) are a notable exception in the literature. Inclusion of human knowledge and sources into our broader conception of personal spaces of information opens new frontiers from future PIM research, including the opportunity for greater theorization of the relationship between personal information management and knowledge management in the personal sphere.

A Deeper Understanding of the Financial Touch as a Financial Management Strategy

This research contributes to growing literature on HCI and personal finance by documenting use of the financial touch to manage personal finances as observed by Kaye et al. (2014). It offers an alternative explanation from Kaye et al. (2014)'s interpretation of use of the financial touch. Rather than interpreting use of the financial touch as the absence of defined systems and processes for managing personal finances, I argue that use of the financial touch is an intuitive style of tracking changes in one's financial situation that leverages personal financial knowledge and wisdom as young adults gain more practical experience and confidence in financial management.

A particular contribution of this research is a better understanding of balance checking. Rather than being a sign of the absence of a formal recordkeeping system for personal financial records, balance checking can be reinterpreted by researchers in HCI as a distinct style of human-information interaction with personal financial data, through which young adults are using personal financial data for sense-making, as a form of feedback to compare and revise their internalized perception of their financial situation and financial conduct. The financial touch allows young adults to act on personal financial data and information, for modifying their future financial conduct and achieving their financial goals. Knowledge production through balance checking goes beyond the dollar and cents "sense" of personal finance, instead supporting the construction and revisions of financial narratives that help young adults decide who they are and who they want to become as financial actors.

Use of the financial touch is attractive to young adults because of the time and energy saved in comparison to more labor-intensive strategies such as maintaining a detailed spending log or collection of personal financial records, indicated how the principle of least effort (Zipf, 2016) remains relevant to PIM research today. This suggests that use of the financial touch might be an outcome of the knowledge-production process that indicates the development of financial knowledge and wisdom, and design processes should seek ways to reduce the laboriousness of data and document management while maximizing opportunities for self-discovery that result from meta-level activities in personal information management, such as evaluation, measuring, and sense-making (Feng & Agosto, 2019). Sense-making was a central use and value derived from the interactions young adults had with their personal financial records explored in this research, motivating the creation and management of collections and frequent interactions with information systems that provide access to personal financial data and documents.

Application of the Wisdom Hierarchy for Rethinking the Relationships Between Data, Information, and Documents

This research uses the Wisdom Hierarchy to reflect critically about conceptual definitions of personal "information" currently used by researchers in the areas of Personal Information Management and Personal Archiving. In doing so, it illustrates differences between financial data, information, knowledge, and wisdom using tangible examples collected during the guided tours. Across guided tours, it was evident that personal financial data, information, knowledge, and wisdom are distinct from financial documents, records, and information systems. Financial documents and information systems are containers of personal financial data that young adults used to generate personal financial information. On the other hand, information, knowledge, and wisdom were often intangible and not objects managed or transferred using documents or information systems. Young adults expressed a strong preference for human sources who they identify as having financial knowledge not available from authoritative print sources. Both knowledge-production and knowledge-transfer occurs in the context of personal finance, summarized below in Table 13. Both approaches are required to holistically describe and explain human-information interactions in the management and exploitation of personal records as well as to fully conceptualize financial personal spaces of information and produce a complete account personal information environments. Both are distinct but important parts of human-information interactions and both perspectives are vital for truly understanding records management as a social practice.

Table 13

Examples of Knowledge-Production and Knowledge-Transfer in PFIM

PI Example	Theme	DIWK Category	PIM Model	Info. Sci. Perspective
Spreadsheets, Spending Logs	In Self-Authored Financial Documents	Data	Curation	Knowledge Production
Calendars, Planners	In Time and Tasks Management Tools	Data	Curation	Knowledge Production
Apps, Websites, Online Documents	In Tools and Documents	Data	Consumption	Knowledge Transfer
Descriptive Labeling, Arrangement	Organization of the Collection	Information	Curation	Knowledge Production
Headings, Color Codes, Grouping	Organization within Documents	Information	Curation	Knowledge Production
Calculations, Visualizations, Financial Narratives	Inferences from Data	Information	Curation	Knowledge Production
Parents, Peers, Professionals, Social Media Advice	As Expert Advice	Knowledge	Consumption	Knowledge Transfer
Home, Work, School Experiences	As Personal Experience	Knowledge	Curation	Knowledge Production
Financial Attitudes, Values, Beliefs	As a Value System	Wisdom	Consumption	Knowledge Transfer
Mental Pictures, Intuitions, Predictions	As an Intuitive Style	Wisdom	Curation	Knowledge Production

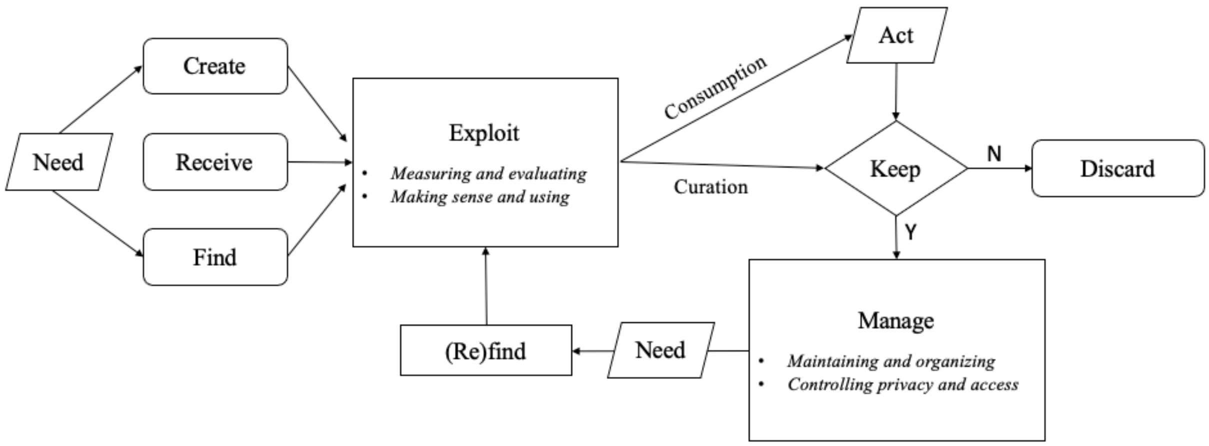
Adoption of the knowledge-production perspective in personal information management research helps us better understand and situate the authorship or creation of unique records in Personal Information Management. As seen within this thesis, the construction of a financial record, such as a spreadsheet or spending log, was an important strategy for accumulating the raw substrate for producing new forms of financial knowing through sense-making (Dervin, 1998). It was observed how self-authored documents, both paper and digital, offer young adults many of the solutions traditionally attributed to personal information systems, such as overcoming the fragmentation problem in which “information” is more difficult to access and exploit when distributed across forms, formats, and locations. Financial documents were observed to bring financial data into a common location, form, and format to support sense-making as a form of exploitation. This helps better contextualize why the uniqueness of personal records is such a distinguishing characteristic of personal information, since self-authored documents often contain unique content that cannot be regenerated from public sources or reconstructed from memory alone when people delay making records of financial experiences. This research emphasizes how the creation of unique personal records starts a document lifecycle for personal records in addition to those already recognized by PIM researchers that occur when someone encounters and decides to keep a document (e.g., through intentional information seeking from public sources) or when records are directed-to individuals, (e.g., as in the case of mail or email), as depicted below in Figure 25.

Results of this research can help improve the precision of the language used by designers and researchers in personal archiving, personal information management, and related fields when discussing interactions with personal records. The Wisdom Hierarchy expands the scope of personal information management research to include personal data, personal knowledge, and personal wisdom as assets produced, managed, and shared using records management processes. The knowledge-production perspective also provides a stronger explanatory framework for more recently recognized kinds of personal information such as information scraps (Bernstein et al., 2007, 2008; Butterfield-Addison et al., 2012), that are not documents in themselves and are distinguished by their ability to support memory and invoke ideas in the mind of their authors.

An Illustration of both Consumption and Curation in Personal Financial Management

Lastly, this research wades into the ongoing development and refinement of conceptual models of personal information management. Guided tours captured examples of curation of personal financial data and records as well as the consumption of financial data using financial service provider information systems. Therefore, it appears that there is a need for a unified conceptual model that includes both consumption and curation of personal data to describe personal information management broadly and accurately, see figure 25. A unified conceptual model should encompass both knowledge-production and knowledge-transfer perspectives from Information Studies, which may justify the inclusion of the two latter senses of personal information, information we experience and information about us. This is especially pressing considering the tendency for people to opportunistically use financial information systems to preserve personal financial data and records, which are not forms of public information but increasingly experienced rather than curated. Results of this research emphasize how people increasingly think of apps and websites as parts of their collections of personal information and personal information environments.

Figure 255
A Unified Conceptual Model of PIM



The revised model of PIM that emerges from this research combines both curation and consumption processes, and reconceptualizes sense-making as a distinct phase in the PIM lifecycle rather than as a meta-level management activity, contrary to Jones and Teevan (2007) and Feng and Agosto (2019). After sense is made, data and documents can be acted upon and subjected to information management processes when retained because of their future use. The management phase of the PI lifecycle furnishes owners with further opportunities to reappraise the value of documents and categories of documents within their collections. Uses of personal data and documents that generate action but bypass management activities (such as the examples of balance checking seen in among young adults described in this thesis) are examples of consumption of PI that occur in parallel to curation-style behaviors. The regularity of these consumption interactions combined with the tendency of users to treat information systems, such as banking apps and websites, as preservation solutions that reduce the need for self-curation, shows how information systems can shift modes of interaction away from curation and towards consumption of personal records. Both curation and consumption are possible outcomes of the sense-making phase in the PI lifecycle, and users can choose to curate personal records even after instances of consumption.

A particular contribution of this research to conceptual models of PIM is how sense-making is implicated in both curation and consumption of personal records. Curation and consumption become styles of human-information interaction that result in knowledge-production. This point is particularly salient in a context where records are increasingly born digital and information systems are exponentially capable of automating many of the tasks associated with the management, or curation, of personal records (i.e., organizing information, keeping, and discarding records) as well as supporting direct access and interaction at the data level. It was observed how online banking apps and interfaces allow many young adults to make sense of their personal financial situations without ever interacting with the documents typically associated with personal finances. A consequence of greater access and interaction with personal financial data means that many young adults place a high degree of trust in those apps and websites to preserve and provide continued access to some of their personal financial records, which might not be a viable long-term preservation solution. Outsourcing curation of personal financial records to service providers also shifts the meaning of personal records from objects we own and control directly through curation to objects we access and consume from locations on the periphery of our personal collections. The centrality of sense-making in interactions with personal financial records suggests that we need to rethink existing conceptual models of personal information management to focus more on exploitation or use. Rather than looking at exploitation as an outcome of personal information management, conceptual models can be reconfigured to better account for exploitation and knowledge-production occurs throughout different stages of the curation process.

Practical Implications and Opportunities for Future Work

This research has practical applications that can enhance the design of pedagogical tools aimed at supporting the development of financial literacy among young adults. It also has practical applications that can improve the design of financial information systems and tools by allowing for a wider range of human-information interactions.

Creating Opportunities to Support Data Curation

I believe personal data management will become a growing concern in personal information management. As new digital technologies are invented and adopted in various spheres of our personal and professional lives, people will need additional tools and guidance to help them appraise, preserve, and access their personal data in addition to collections of records, which are containers of data and information. Guided tours revealed how young adults put a lot of effort into data capture, data unification, and data organization to address fragmentation of data in personal finance. The management of personal financial data has time and labor costs that make reliance on financial service provider information systems attractive solutions for preserving and accessing personal financial data. Reliance of financial service provider information systems to preserve and access personal financial data records and long-term points to ensuring issues of opportunism, optimism, and benign neglect, which also apply to personal data. Designers of digital technologies for personal finance can also design tools that help individuals stay on top of financial records management processes by providing them with regular and low-effort opportunities to back up their personal financial data and documents curated by the system. Directly supporting records management and encouraging users to take custodial responsibility for personal records may prevent unintentional loss of access due to benign neglect. Therefore, future work can develop improved ways to support the preservation of personal financial data.

Information systems can be designed to prevent opportunistic use and benign neglect of personal financial records by periodically prompting young adults to make copies of financial data and records they normally access through the system. This could be particularly useful for information systems that provide limited time durations for access to personal financial records, some of which are shorter than the seven years recommended by financial experts. By designing better opportunities for consumers to take custodial responsibility for their personal financial data and records, HCI researchers can help individuals reduce fragmentation of their personal financial data across systems and prevent future scenarios where consumers are unable to access portions of their personal financial histories.

Creating Opportunities for Self-Reflection and Self-Discovery

When applied to improve digital technologies for personal finance, designers can use the findings of this research to design interfaces that allow for a wider range of human-information interactions with data. Rather than seeing the interface and information system as a vehicle that exclusively facilitates information-transfer between financial service providers and clients, designs could reimagine digital spaces as environments to produce new knowledge through sense-making. Interfaces could be designed to afford users with greater flexibility in how data is related and represented in the system.

This could be achieved through providing users with features that allow them to annotate, color code, tag, or visually rearrange data within the system, emulating the kinds of interactions young adults have with the content of self-authored financial documents such as spreadsheets and time management tools. Allowing users to define relationships between data, such as through categorization, can help improve the accuracy and comprehensiveness of the analytics and visualization features built into information systems using artificial intelligence while clearly distinguishing between user generated data from system generated content. Inclusion of self-captured financial data is an opportunity for the designers of personal financial data to better understand the user's embodied representation of their data and its intended uses. This shift requires a shift in social valuation of records management in personal finance rendering it less invisible as a form of labor that adds value.

Lastly, interfaces and information systems can make better use of concepts of adulthood and financial personhood to organize, visualize, and support interaction with personal financial data for young adult users. That is, interfaces can build in more opportunities for self-discovery that recognize the reflexive aspects of interaction with personal financial data through banking apps and web pages during this period of development. Self-discovery could be supported by designing experiences where users can make tacitly held financial goals and values more explicit in processes guided by information systems, to support periodic self-reflection on recent financial behaviors to help users shape and modify future financial actions, and offer spaces for users to represent and track the completion of their routine financial tasks and actions.

Creating Opportunities to Leverage Financial Records Management as a Context for Teaching and Practicing Financial Management Skills and Practices

Information resources and systems designed to teach basic concepts and skills in personal finance can include modules on best practices records management as well. Modules could provide young adults with an introduction to the document lifecycle, how it applies to personal financial records, and provide criteria that young adults can use to make appraisal decisions about when to keep documents based on archival concepts of value. Modules could be developed that alert young adults to the risks associated with benign neglect of personal financial records and help them develop long-term strategies for the preservation of records with evidence value to prevent premature discard or catastrophic loss before the end of their lifecycle. Modules can also highlight the role of personal financial records as a source of feedback on financial behaviors and support the reflexive use of personal financial records. Furthermore, pedagogical resources can better situate development of personal financial skills and practices as part of human development and coming of age, emphasizing financial records management as a life skill that will serve young adults throughout the remainder of their lives.

Guided tours revealed that young adults make extremely limited use of authoritative information resources on how to manage personal finances and records. Few examples of public information were seen within collections of personal financial records of young adults. Participants described how difficult it is to find certain kinds of experiential-based knowledge related to personal finance in print and digital forms. Young adults expressed a strong preference for human sources for finding and receiving financial know-how. As a result, an opportunity exists to create good places to pool personal experience, advice, and authoritative information resources on how to manage and make the best use of personal financial documentation. Furthermore, there is a strong need for greater recognition that records management is a complementary skill set in financial management. Financial records are often invisible in texts of personal finance despite their importance for executing financial actions, tracking the financial past, and planning for the financial future.

Addressing Limitations of this Research Through Future Work

This research demonstrates how personal finance is a fruitful context for studying personal information management and how knowledge-production offers a new productive direction for refining our understanding of personal information. Personal information management also offers an opportunity to evaluate and reflect upon theories of information that underpin the ways in which we educate people about records management and design for interactions with personal financial records. This section reflects on opportunities for future work that overcome some of the limitations of this study and sustain integration of the knowledge-production perspective in PIM research.

Future work could overcome limitations of this study by recruiting a larger sample of participants to validate its findings and begin to make assessments about the generalizability of the findings. This study offers little insight into potential differences and similarities among young adults who pursue alternative educational pathways and the role that university education has on the development of personal financial skills and records management practices. Future work could explore groups of young adults who enter directly into the workforce after secondary education or pursue post-secondary education that provides paid training in their chosen fields, such as is the case for professional trades, thus potentially affording these populations of young adults earlier access to financial resources and financial independence than those who pursue a university education. Future research could explore differences and similarities among young adults who live and work in rural settings to see whether differences in population density and socio-economic demographics impact the necessity and processes that motivate the development of records management skills and practices. Future research could also explore the impact of gender and culture to identify systemic barriers and discourses that may impact the development of financial and information literacy among young adults in contexts of social inequity and generational trauma. Future work could adopt a more longitudinal approach by following a cohort across the period of 18 to 25 to track development and changes in financial records management over time throughout the period of adulthood. Designers could also test the viability of incorporating self-reflexivity and knowledge production in financial information systems. Most importantly, future work can explore whether having education and skills in personal records management translates to better financial literacy and financial outcomes. If so, training in managing personal financial documentation may offer an indirect path for improving the financial wellbeing and development of young adults.

Future work can also contribute to integration of the knowledge-production perspective in the research area of Personal Information Management. Theories of information like the Wisdom Hierarchy can be applied to other contexts and genres of personal information to explore other instances of knowledge-production in interactions with personal records. Little is known about whether the processes observed in this study apply to other kinds of personal records, especially non-linguistic and non-numeric records such as personal collections of audio recordings, photographs, or video. Future work can also look for additional contexts in which human-information interaction occurs primarily with data rather than documents to better articulate the differences and areas of overlap between records management and knowledge-production in the document lifecycle.

Takeaways

In conclusion, personal information and personal records are not synonymous. Using the Wisdom Hierarchy to think about the relationships between data, information, knowledge and wisdom in personal collections helps bring the research area of Personal Information Management, Personal Archiving, and Human-Computer Interaction into greater alignment with theories of information. Use of the knowledge-production perspective opens new and interesting research opportunities on the topic of personal information. Both curation and consumption models of PIM capture and reflect some of the aspects of personal financial records management but neither comprehensively captures all cases, especially those involving the creation of new forms of knowing when creating personal records. This points to the need for additional work to refine our understanding of personal information and its management. Lastly, records management behaviors are often invisible forms of work and therefore documents and documentation practices are not as appreciated as much as they should be. In the context of personal finance, personal records play a big role in becoming and seeing oneself as an adult.

Information behaviors are not separate from social and cultural processes, which are used to interpret and make sense of information behaviors as well as generate information. Interactions with personal records change people as well as change the meaning and value of personal records. Greater attention is needed to how information behaviors reflect and respond to social discourses and social practices.

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Appendix 1: Website recruitment materials

Homepage

I am a doctoral candidate at the McGill School of Information Studies in Montréal, Québec, Canada. My PhD research explores personal information management (PIM) and personal archiving. I am interested in the relationship between records management and financial behaviors among young adults. My current research aims to improve the recordkeeping capacities of financial tools and services. My doctoral research is supervised by Prof. Karyn Moffatt PhD at the McGill School of Information Studies. This project is funded by the Social Science and Humanities Research Council of Canada (SSHRC).

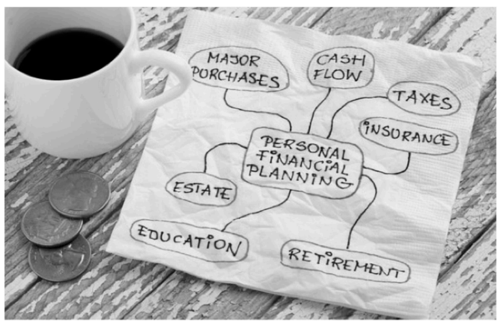
I hold master's and Bachelor of Arts degrees in Social Anthropology from York University in Toronto, Ontario, Canada. My MA research explored member attitudes towards online research ethics and the data mining of personal health information on the patient social networking website PatientsLikeMe.com. My master's research was supervised by Prof. Naomi Adelson PhD (York University). As an anthropologist by training, I am interested in individual and group identity construction through documentation and information-related practices.
I am part of the Accessible Computing Technologies Research Group (ACT) at McGill University. Our current project explores information behaviors and needs of family, friends, and caregivers of loved ones in hospice and palliative care. Our aim is to develop technologies that enhance telepresence, communication, and social support at the end-of-life.

I am a student member of the Association of Information Science and Technology (ASIS&T) and the Association for Computing Machinery (ACM). I serve as the 2014-2015 secretary of the ASIS&T McGill Student Chapter. I have presented research and participated in workshops at Computer Supported Collaborative Work (CSCW), Computer Humans Interactions (CHI), GRAND NCE/Canada 3.0, Web 2.U, Congress on Whole Person Care, and the annual meeting of Association of Information Science and Technology.

Study Landing Page

We are recruiting participants for our current study entitled "Exploring Personal Financial Information Management Among Young Adults". For more information about this study or how to participate, please consult our Eligibility Criteria, FAQ and Contact pages. Forms and information sheets for the study can be found on the Supporting Documents page.

HOW DO YOU MANAGE FINANCIAL DOCUMENTS?



WE WANT TO KNOW!

The purpose of this study is to better understand how young adults (age 18-25) organize personal collections of financial documents (such as bills, receipts, budgets, tax returns, etc.) and what motivates financial recordkeeping and planning among young adults.

If you agree to participate in this project, you will be asked to give an overview of your personal collection of financial documents and the spaces in which you do your financial recordkeeping and planning.

Interested in being a participant? Please contact:

Principle Investigator
Robert Douglas Ferguson (Doctoral Candidate)
McGill School of Information Studies
robert.douglas.ferguson@mail.mcgill.ca

Supervisor
Prof. France Bouthillier
McGill School of Information Studies
france.bouthillier@mcgill.ca

www.robertdouglasferguson.com/participate/

Financial compensation available. This research project is funded by the Social Science and Humanities Research Council of Canada (SSHRC).

I respond to all emails within 24-48 hours of receipt. Please check your spam or junk folder if you do not hear from us within that time frame.

Eligibility Criteria Page

This study uses both inclusion and exclusion criteria to prescreen potential participants for suitability for the study. Using inclusion and exclusion criteria when sampling helps researchers improve the accuracy of their results. If you meet the following eligibility criteria and would like to participate in the study, please consult the FAQ section and contact the researcher to register.

Inclusion Criteria

To qualify for this study, you must answer yes to all of the following statements:
I am between 18 to 25 years of age at the time of research; I reside in Montréal at the time of the research*.
I have held part or full-time employment anytime between the ages of 16 and 25 for at least a 6-month period;
I had at least one financial expense that I managed independently between the ages of 16 to 25 such as a cellphone account or personal credit card.

Exclusion Criteria

Unfortunately, you will not be able to participate in the study at this time if you answer yes to any of the following statements:
I am married or cohabitate with a partner**;
I am a parent;
I was employed for less than six months between the ages of 16 to 25;
I did not manage at least one financial expense independently between the ages of 16 to 25;
I have filed for bankruptcy between the ages of 16 and 25.
*Young adults who live in the home of their family are eligible to participate if they earn an income and are responsible for managing some of their own personal finances.
**People who cohabitate with a roommate that is not their partner but with whom they share some expenses such as rent or telecommunication services are eligible to participate in the study.

FAQ Page

What is the purpose of the study?
What is personal financial information management?
What is the guided tour interview technique?
Who can participate in the study?
How long does the study take to complete?
Where does the guided tour interview take place?
Is there financial compensation for participants?
How will you protect my privacy?
What potential benefits are involved with my participation?
What potential risks are involved with participation?
Has this study received ethical approval from McGill University?
Who will be conducting the guided tour interview?
Who is supervising this study?
How is this study funded?
Can I stop the interview or withdraw at any time?
How do you sign up to participate?
What do I do after I sign up?
I am interested in participating but I am nervous about the researcher coming to my home, what can I do?
Can I participate if I live in the Toronto area?

Answers

What is the purpose of the study? The purpose of this study is to explore the personal recordkeeping practices of young adults and how they manage personal financial information.
↑Top
What is personal financial information management? Personal financial information refers to the collection of receipts, bills, documents, files, notes, and memos that we collect, create, use, and keep as part of making, spending, and saving money. Management refers to the actions we engage to organize, store, find, and dispose of these kinds of records. ↑Top
What is the guided tour interview technique? The guided tour technique is a standard method for studying recordkeeping practices. In the guided tour technique, the researcher will ask the participant to give a tour of their workspace and describe how they organize their documents in that space. Throughout the tour, the researcher will ask questions and seek verbal clarifications from participants.
Researchers typically make audio recordings of conversations that occur during the guided tour for later transcription and analysis. The researcher will also take photographs of the environment and examples of documents for later comparison and verification of observations. ↑Top
Who can participate in the study? This study uses both inclusion and exclusion criteria to prescreen potential participants for suitability for the study. Using inclusion and exclusion criteria when sampling helps researchers improve the accuracy of their results.

Inclusion Criteria In order to qualify for this study, you must answer yes to all the following statements:
I am between 18 to 25 years of age at the time of research; I reside in Montréal at the time of the research*;
I have held part or full-time employment anytime between the ages of 16 and 25 for at least a 6-month period;
I had at least one financial expense that I managed independently between the ages of 16 to 25 such as a cellphone account or personal credit card.
Exclusion Criteria Unfortunately you will not be able to participate in the study at this time if you answer yes to any of the following statements:
I am married or cohabitate with a partner**;
I am a parent;
I was employed for less than six months between the ages of 16 to 25;
I did not manage at least one financial expense independently between the ages of 16 to 25;
I have filed for bankruptcy between the ages of 16 and 25.
*Young adults who live in the home of their family are eligible to participate if they earn an income and are responsible for managing some of their own personal finances.
**People who cohabitate with a roommate that is not their partner but with whom they share some expenses such as rent or telecommunication services are eligible to participate in the study.
↑Top
How long does the study take to complete? The study takes approximately 1 hour to complete.
↑Top
Where does the guided tour interview take place? The study takes place in the space in which the participant manages their personal financial information. Typically, this is an office or workspace in the participant's home. ↑Top
Is there financial compensation for participants? Yes, we offer $10.00 (Canadian) in compensation for your time. ↑Top
How will you protect my privacy? Financial figures, such as account balances or debt, will never be collected as part of this study. If this information is revealed to the researcher, it will be treated as confidential and not used in the results of the study.
Protocols are in place to prevent the collection of personally identifying information (such as name, account numbers, balances, etc.) that might be unintentionally collected as part of the guided tour.
Sticky notes will be provided by the researcher that participants can use to cover any sensitive or personal information that appears on documents presented to the researcher.
Participants will have the opportunity to review and approve the use of any photos taken at the end of the guided tour.
Participants can skip any questions or parts of the interview.
Participants can also decline to allow the researcher to make photographs or audio recordings.
Only the researcher and his supervisor will have access to the data and audio recordings.
Data and photographs that appear in publications or presentations will be de-identified. Audio recordings will never be used in presentations.
What potential benefits are involved with my participation?

Participants may better understand their own financial behaviors and recordkeeping practices because of participating in the guided tour interview.
Participants may contribute to the creation of improved information resources for young adults aimed at improving financial recordkeeping, which participants can employ in their own practices.
Participants may contribute to improved future access to integrated records management tools such as better archiving in personal banking interfaces. ↑Top
What potential risks are involved with participation? The research presents low to no risk to participants. Participants may experience:
mental fatigue because of thinking, remembering, and explaining during the guided- tour task. In the event of fatigue, the participant may pause or take a break at any time.
stress or discomfort because of being asked to talk about personal finances, spending habits, and money in general. Take comfort in knowing that the researcher is neutral, empathetic, and non-judgmental toward participants' financial decisions and situations. Also note that there are no right or wrong answers to any of the questions.
concerns about privacy and security of personal financial information because of participating in a study about financial behaviors and recordkeeping. Please see the How will you protect my privacy? and the I am interested in participating but I am nervous about the researcher coming to my home, what can I do? sections of this FAQ for more information about our protocols. ↑Top
Has this study received ethical approval from McGill University? Yes, this study has been reviewed and approved by the Research Ethics Board (REB) of McGill University. Our approval certificate is available here. ↑Top
Who will be conducting the guided tour interview? Robert Douglas Ferguson, who is a doctoral candidate at the McGill School of Information Studies will be the researcher conducting the interviews. ↑Top
Who is supervising this study? Prof. France Bouthillier, director of the McGill School of Information Studies is supervising this study. ↑Top
How is this study funded? This study is funded by a Social Science and Humanities Research Council of Canada (SSHRC) Doctoral Fellowship. ↑Top
Can I stop the interview or withdraw my participation at any time? Yes, you can stop the interview and withdraw from the study at any time. If you decide to withdraw, you can also ask the researcher to destroy your data as well. ↑Top
How do you sign up to participate? If you are interested in participating, please contact the researcher here. ↑Top
What do I do after I sign up? After you sign up and schedule a date and time for the guided tour interview, please consult the Participant Preparation Information Sheet and Informed Consent Statement. ↑Top
I am interested in participating but I am nervous about the researcher coming to my home, what can I do? We understand! Prospective participants are welcome to meet the study's researcher and/or supervisor at the McGill School of Information Studies during regular business hours to verify that this a real study prior to deciding whether or not to participate. Please contact the researcher to schedule a meeting time. ↑Top

Can I participate if I live in the Toronto area? Yes! I am occasionally in the Toronto area. If you are from the Toronto area and want to participate, please contact me to schedule a time for the guided tour interview. ↑Top

Contact Page

Email:
robert [dot] douglas [dot] ferguson [at] mail [dot] mcgill [dot] ca

I respond to most emails within 24-48 hours of receipt. Please check your spam or junk folder if you do not hear from us within that timeframe.

Office Location and Mailing:
Robert Douglas Ferguson School of Information Studies McGill University 3661 Rue Peel
Montréal, Québec H3A 1X1
(Office Hours: By Appointment.)

Supporting Documents Page

Participants
Participant Preparation Information Sheet
Ethics
Informed Consent Statement
Research Ethics Board Approval Certificate

Participant Preparation Information Sheet Page

Exploring Personal Financial Information Management Among Young Adults Participant Preparation Information Sheet

Dear potential participant, thank you for your interest in this study. The purpose of this document is to provide more information about the guided tour technique and instructions on how to prepare for the researcher's visit. Please feel free to ask questions or raise concerns at any time throughout the research process.

About the Guided Tour Technique

The guided tour technique is a standard method for understanding how people engage in recordkeeping practices. The technique involves the participant inviting the researcher into the space where they keep their records (such as a home office) and to explain, in your own words, how you manage your documents. The researcher will ask to take a photo of your personal workspace, such as your desk.

On the guided tour, you will be asked to show the researcher where you store your personal financial documents, to explain how those documents are organized (if at all), and to describe ways in which you use those documents in everyday contexts. The researcher will ask questions about how computers, cellphones, and the Internet are incorporated into these practices and spaces. The researcher will also ask to take photos of sample documents.

How to Prepare for the Guided Tour

Very little preparation is required on your part as a participant, but the researcher asks that you adhere to the following basic guidelines to help ensure the highest degree of accuracy for the study:

Please resist the urge to clean up spaces before the guided tour!

Real life is messy, and we understand! There is no need to tidy up spaces in preparation for the guided tour. The researcher is not there to judge how neat or tidy your space is. In fact, the more "unprepared" your space is, the more accurate our results will be.

Please inform roommates or family members about the guided tour!

To respect the privacy of roommates or family members who might be present at the time of the guided tour, please let them know that the researcher will be coming. If they object to the research, please inform the researcher as soon as possible. Let them remove personal items from the space if needed.

Keep in mind that there are no right or wrong recordkeeping practices!

We are interested in knowing about your everyday experiences and challenges. There is no need to impress or perform for the researcher in any way.

Remember personally identifying information will not be used as data!

This includes account balances, account numbers, etc. How much money you have is not important in this research. Sticky notes will be available for you to hide any sensitive information. You will have an opportunity to review and approve all photos taken during the tour. Any disclosure of such information will be held in strict confidence and not treated as data.

Informed Consent Statement Page

Exploring Personal Financial Information Management Among Young Adults

Principle Investigator
Robert Douglas Ferguson (Doctoral Candidate) McGill School of Information Studies
robert.douglas.ferguson[at]mail.mcgill.ca

Supervisor
Prof. France Bouthillier McGill School of Information Studies Phone: 514-398-3362
france.bouthillier[at]mcgill.ca

Purpose and Procedures
The purpose of this study is to better understand how young adults organize and manage personal collections of financial documents (such as bills, receipts, budgets, tax returns, etc.) as well as the various factors that motivate financial recordkeeping and planning among this age group. To develop this improved understanding, this project asks you to give the researcher a guided tour of your personal collection of financial documents and the spaces in which you do your financial recordkeeping and planning. On the guided tour, you will be asked to show the researcher where you store your personal financial documents, to provide a brief explanation of how those documents are organized (if at all), and to describe ways in which you use those documents in everyday contexts. This study is funded by the Social Science and Humanities Research Council of Canada (SSHRC).

We expect the guided tour to take between 60 and 120 minutes.

Risks and Benefits
This study poses minimal risks and has potential benefits for participants. Please feel free to ask any questions or raise concerns that you might have about your participation. Potential risks include fatigue because of thinking and remembering during the guided-tour task. Participants might also experience minor stress or discomfort because of talking about personal finances and money. Potential benefits of participation include a better understanding of your own financial behaviors and recordkeeping practices as well as awareness of other information resources and recordkeeping techniques available to young adults for managing money.

Privacy and Security
Your privacy and security are extremely important to us! As a result, we have several protocols in place to protect your identity we'd like to tell you about:
Privacy
The researcher is NOT interested in the net-worth or financial figures (i.e., account balances or numbers);

Every attempt will be made to NOT collect personally identifying information, intentionally or unintentionally, by concealing such information (i.e., placing sticky notes over names, account numbers, financial figures prior to photographing);
Participants WILL be allowed to review and approve all photographs taken during the data collection task.

Security
Any digital copies of data such as photographs, interviews recordings, or interview transcripts, WILL be encrypted, password-protected and NEVER stored on a USB Key or device that can be easily lost or stolen; Any physical copies data, such as printouts, will be stored in a double-locked cabinet in a secure office at McGill University.

Consent forms will be sealed in plain letter envelopes immediately upon collection, which will then be stored in a separate location from data.

Remuneration and Compensation
You will receive 10$ for participating in the research.

Withdrawal of Data or Participation
Participation is voluntary; you may decide to withdraw from the study at any time and for any reason, without penalty. You are also free to skip any questions or activities. Withdrawing from the study will not impact your relationship with the research team in any way. If you choose to withdraw, inclusion of the data collected prior to your withdrawal may be appropriate in some of our analyses. It is up to you whether your data is included in any analyses. If you decide to withdraw and do not wish to have your data included, please inform the research team at that time.

Confidentiality and Use of Data
All information collected will be kept secure and confidential. Only the researcher will have access to your data files. Data will be de-identified and coded. The data collected will be destroyed 5 years after completion of the study. Data collected may be used in research journals, conferences, or other scholarly activities. In these cases, your name will not be used and will be replaced with an identifier (e.g., Participant 1). Audio recordings will never be included in presentations. Personally identifying information, such as your name, will never be disclosed.

Questions or Concerns
You are free to ask questions about the process at any time. You can ask questions in person during the interview, or by contacting the researcher (robert.douglas.ferguson[at]mail.mcgill.ca) or his supervisor (france.bouthillier[at]mcgill.ca).
If you have any questions or concerns regarding your rights or welfare as a participant in this research, please contact the McGill Ethics Officer at 514-398-6831 or lynda.mcneil[at]mcgill.ca.

Audio and Photo Release
[ ] I grant permission to be audio recorded for the purposes of transcription.

Audio recordings of the study sessions are helpful for us to generate transcripts. These transcripts facilitate data analysis and ensure your responses are accurately recorded. You have the choice as to whether you wish to be recorded. Note that your selection will in no way affect your participation in the study or your compensation. At any time, you may request that the recording device be turned off, for as long as you like.

[ ] I grant permission to be photographed for the purposes of illustration.
Photographs from the study session are helpful for us to illustrate findings from guided tours. These photographs facilitate data analysis and ensure your responses are accurately recorded. You have the choice as to whether you wish photographs to be taken. Note that your selection will in no way affect your participation in the study or your compensation. At any time, you may request that the photographing device be turned off, for as long as you like.
I have read and understood the information above and agree to participate in the study.

Research Ethics Certificate Page

Research Ethics Board Office James Administration Bldg. 845 Sherbrooke Street West. Rm 429 Montreal, QC H3A 0G4 Tel: (514) 398-6831 Fax: (514) 398-4644 Website: www.mcgill.ca/research/researchers/compliance/human/
Research Ethics Board II Certificate of Ethical Acceptability of Research Involving Humans
REB File #: 310-0215
Project Title: Exploring Personal Financial Information Management Among Young Adults
Principal Investigator: Robert Douglas Ferguson
Department: School of Information Studies
Status: PhD Student
Supervisor: Prof. France Bouthillier
Funding Agency/Title: SSHRC Doctoral Fellowship Approval Period: February 18, 2015 – February 17, 2016
The REB-II reviewed and approved this project by delegated review in accordance with the requirements of the McGill University Policy on the Ethical Conduct of Research Involving Human Participants and the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans.
Deanna Collin Research Ethics Administrator

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* All research involving human participants requires review on an annual basis. A Request for Renewal form should be submitted 2-3 weeks before the above expiry date. * When a project has been completed or terminated a Study Closure form must be submitted. * Should any modification or other unanticipated development occur before the next required review, the REB must be informed, and any modification can't be initiated until approval is received.

Appendix 2: Ethics Materials

Consent Form

Exploring Personal Financial Information Management Among Young Adults

Principle Investigator
Robert Douglas Ferguson (Doctoral Candidate)
McGill School of Information Studies
Phone: 514-447-9640
robert.douglas.ferguson@mail.mcgill.ca

Supervisor
Prof. France Bouthillier
McGill School of Information Studies
Phone: 514-398-3362
france.bouthillier@mcgill.ca

Purpose and Procedures
The purpose of this study is to better understand how young adults organize and manage personal collections of financial documents (such as bills, receipts, budgets, tax returns, etc.) as well as the various factors that motivate financial recordkeeping and planning among this age group. To develop this improved understanding, this project asks you to give the researcher a guided tour of your personal collection of financial documents and the spaces in which you do your financial recordkeeping and planning. On the guided tour, you will be asked to show the researcher where you store your personal financial documents, to provide a brief explanation of how those documents are organized (if at all), and to describe ways in which you use those documents in everyday contexts. This study is funded by the Social Science and Humanities Research Council of Canada (SSHRC).

We expect the guided tour to take between 60 and 120 minutes.

Risks and Benefits
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Privacy and Security
Your privacy and security are extremely important to us! As a result, we have several protocols in place to protect your identity we'd like to tell you about:

Privacy	Security
· The researcher is NOT interested in the net-worth or financial figures (i.e., account balances or numbers); · Every attempt will be made to NOT collect personally identifying information, intentionally or unintentionally, by concealing such information (i.e., placing sticky notes over names, account numbers, financial figures prior to photographing); · Participants WILL be allowed to review and approve all photographs taken during the data collection task.	· Any digital copies of data such as photographs, interviews recordings, or interview transcripts, WILL be encrypted, password protected and NEVER stored on a USB Key or device that can be easily lost or stolen; · Any physical copies data, such as printouts, will be stored in a double-locked cabinet in a secure office at McGill University. · Consent forms will be sealed in plain letter envelopes immediately upon collection, which will then be stored in a separate location from data.

Remuneration and Compensation
You will receive 10$ for participating in the research.

Withdrawal of Data or Participation
Participation is voluntary; you may decide to withdraw from the study at any time and for any reason, without penalty. You are also free to skip any questions or activities. Withdrawing from the study will not impact your relationship with the research team in any way. If you choose to withdraw, inclusion of the data collected prior to your withdrawal may be appropriate in some of our analyses. It is up to you whether your data is included in any analyses. If you decide to withdraw and do not wish to have your data included, please inform the research team at that time.

Confidentiality and Use of Data
All information collected will be kept secure and confidential. Only the researcher will have access to your data files. Data will be de-identified and coded. The data collected will be destroyed 5 years after completion of the study. Data collected may be used in research journals, conferences, or other scholarly activities. In these cases, your name will not be used and will be replaced with an identifier (e.g., Participant 1). Audio recordings will never be included in presentations. Personally identifying information, such as your name, will never be disclosed.

Questions or Concerns
You are free to ask questions about the process at any time. You can ask questions in person during the interview, or by contacting the researcher (robert.douglas.ferguson@mail.mcgill.ca) or his supervisor (france.bouthillier@mcgill.ca).

If you have any questions or concerns regarding your rights or welfare as a participant in this research, please contact the McGill Ethics Officer at 514-398-6831 or lynda.mcneil@mcgill.ca.

Audio and Photo Release

[ ] I grant permission to be audio recorded for the purposes of transcription.

Audio recordings of the study sessions are helpful for us to generate transcripts. These transcripts facilitate data analysis and ensure your responses are accurately recorded. You have the choice as to whether you wish to be recorded. Note that your selection will in no way affect your participation in the study or your compensation. At any time, you may request that the recording device be turned off, for as long as you like.

[ ] I grant permission to be photographed for the purposes of illustration.

Photographs from the study session are helpful for us to illustrate findings from guided tours. These photographs facilitate data analysis and ensure your responses are accurately recorded. You have the choice as to whether you wish photographs to be taken. Note that your selection will in no way affect your participation in the study or your compensation. At any time, you may request that the photographing device be turned off, for as long as you like.

I have read and understood the information above and agree to participate in the study.

Participant Name (Please Print)		Signature		Date (MM/DD/YYYY)
Researcher Name (Please Print)		Signature		Date (MM/DD/YYYY)

Ethics Certificate

McGill

Research Ethics Board Office
James Administration Bldg.
845 Sherbrooke Street West. Rm 429
Montreal, QC H3A 0G4

Tel: (514) 398-6831
Fax: (514) 398-4644
Website: www.mcgill.ca/research/researchers/compliance/human/

Research Ethics Board II
Certificate of Ethical Acceptability of Research Involving Humans

REB File #: 310-0215

Project Title: Exploring Personal Financial Information Management Among Young Adults

Principal Investigator: Robert Douglas Ferguson

Department: School of Information Studies

Status: PhD Student

Supervisor: Prof. France Bouthillier

Funding Agency/Title: SSHRC Doctoral Fellowship

Approval Period: February 18, 2015 – February 17, 2016

The REB-II reviewed and approved this project by delegated review in accordance with the requirements of the McGill University Policy on the Ethical Conduct of Research Involving Human Participants and the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans.

Deanna Collin
Research Ethics Administrator

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* All research involving human participants requires review on an annual basis. A Request for Renewal form should be submitted 2-3 weeks before the above expiry date.
* When a project has been completed or terminated a Study Closure form must be submitted.
* Should any modification or other unanticipated development occur before the next required review, the REB must be informed and any modification can't be initiated until approval is received.

Appendix 3: Questionnaires

Demographics Questionnaire

Gender:
□ Female
□ Male
□ Prefer not to identify

Marital status:
□ Single
□ In a relationship
□ Married/Common Law
□ Divorced
□ Other: ____________________________ (Please Specify)

Household status:
□ Live alone
□ Live with a roommate
□ Live in my family's home (parents, grandparents, other)
□ Other: ____________________________ (Please Specify)

Current employment status: (Select all that apply)
□ Self-Employed
□ Employed
□ Unemployed
□ Student
□ Other: ____________________________ (Please Specify)

Age:
□ 18-19
□ 19-20
□ 21-22
□ 23-24
□ 25+

Age of first employment:
□ 15-16
□ 17-18
□ 19-20
□ 21-22

□ 23-24
□ 25+

Age of first independent financial expense:
□ Less than 15
□ 15-16
□ 17-18
□ 19-20
□ 21-22
□ 23-24
□ 25+

Approximate personal income:
□ Less than $10,000
□ 10,000-13,999
□ 14,000-17,999
□ 18,000-21,999
□22,000-25,999
□ 26,000-29,999
□ 30,000+
□ I don't know
□ I prefer not to say

Level of education:
□ Some high school
□ High School
□ Some Cegep
□ Cegep
□ Some University
□ University
□ Some Post-graduate (MA, PhD)
□ Post-Graduate
□ Other: ____________________________ (Please Specify)

How did you find out about the study?
____ (Please Specify)
Comments or feedback for improvement of the study?
____
Thank you for participating!
Updates and results from the study will be available at: www.robertdouglasferguson.com

Guided Tour Protocol

Rapport Building:
Please tell me a little bit about yourself to help me understand who you are and the context in which this interview is taking place…

Topic 1: Can you please take me to the space where you manage your personal financial information and provide me with an overview of the layout?

Physical	Digital
□ Room(s)	□ Computer Hard Drive/Folders
□ Work Surface(s)	□ Mobile Phone
□ Storage furniture	□ Tablet
□ Other ______________________	□ Email Inbox
	□ Cloud Storage
	□ Mint.com or similar program
	□ Other ______________________

Topic 2: Now, can you please provide me with an overview of the types of documents in your collection?
What kind of documents and items do you consider part of your personal collection of financial information?
Do you have any important documents, such as identification, deeds, or documents with monetary value in themselves? Where do you store documents that have monetary value in themselves?
Do you have a budget? If yes, how did you construct that budget?
Do you ever create reminders related to financial tasks or actions? If so, how, why?
Does use of a calendar, notebook, sticky notes, or other items not necessarily designed for financial management help you manage your personal financial information? If so, how and what is the value of incorporating that item?

Topic 3: In-Depth Discussion of Organizational Strategies
How would you describe the overall structure you use to organize your collection of personal financial information?
Has that structure changed over time, if so, how?
How often do you organize your documents?
Have you ever experienced any problems or difficulties with the way you organize your financial documents?
Have you ever made any financial mistakes or errors due to the way you organize your documents?
How long do you keep financial documents? Why?

Topic 4: Can you please describe typical actions and tasks related to managing financial documents?

Let's start by creating a list of tasks you associate with regular management of finances. What are the tasks and how often do you do them (daily, weekly, monthly etc.)?
If you were to receive a bill or other financial document today, can you walk me through the process of what you would do with it?
Do you have copies of your previous income tax filings? How did you complete it?
Does income tax season affect the way you manage your personal financial information management?
What do you do with temporary documents you create when doing financial tasks?

Topic 5: Information retrieval
How do you find financial documents in your collection (i.e., browsing, search, other)?
Have you ever lost an important financial document? If so, how and why?
Can you try retrieving a financial document of your choice?

Topic 6: Information seeking
Have you ever searched for information resources to support your personal financial information management? This can include online resources such as webpages, blogs, social media sites, as well as offline resources, such as books, magazines, government reports or guides, etc.?
Have you ever received, or information resources directed to you to support your personal financial information management? If so, what kind and from who?
If you were going to sign up for a new financial service, but wanted to get more information about that service, what sources of information would you consult?
Who would you say has most influenced the way you manage your personal financial information? Why?

Topic 7: Imagining a better way to manage personal financial information.
If you could have any technology, imaginary, real or a blend of the two, that could help with managing personal financial information, what would it be and what would it do?

Topic 8: Exit question on influence of interview
As a result of participating in the interview, what changes do you think you might make to the way in which you manage your personal financial information?
Do you anticipate any future life events that might change the way in which you manage your personal financial information?

Appendix 4: Recruitment Flier

HOW DO YOU MANAGE FINANCIAL DOCUMENTS?

WE WANT TO KNOW!

The purpose of this study is to better understand how young adults (age 18-25) organize personal collections of financial documents (such as bills, receipts, budgets, tax returns, etc.) and what motivates financial recordkeeping and planning among young adults.

If you agree to participate in this project, you will be asked to give an overview of your personal collection of financial documents and the spaces in which you do your financial recordkeeping and planning.

Interested in being a participant? Please contact:

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www.robertdouglasferguson.com/participate/

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