

Designing Longevity Planning Blocks through Experimental Participatory Observation and Interviews

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The financial industry is under a transformational shift to cater to the change in our demographics. Between 2015 and 2050, the ratio among the world's population over 60 years old will nearly double (from 12% to 22%) according to WHO (World Health Organization) data in 2022. This poses a greater demand for new approaches to financial planning, which involves a series of large, complicated challenges, especially considering different countries' political situations, diverse cultures, various birth rates, ethical issues, healthcare systems, emerging technologies, and economic conditions. The study explores how the usage of interactive, tangible artifacts and services, informed by Human-Centered Design (HCD) and the creative process, could empower people across all stages of life (e.g., pre-retirement, retirement, and post-retirement) by introducing new topics and improving financial literacy, longevity preparedness, and the overall financial planning process. The study applied participatory observation and interviews with participants engaging with the tangible artifact to test the concept of the Longevity Planning Blocks (LPBs), a financial planning toolkit consisting of four phases associated with retirement: 1. managing ambiguity, 2. making big decisions, 3. managing complexity, and 4. living solo. These themes were used to map out financial planning services across intergenerational life-stage changes. We suggested four high-level design considerations—empathy, empowerment, experience, and education—to improve LPB product design and service innovation with accessible content and provocative questions, interactive format, inspiring visuals, business and service strategies, and immersive user experiences.

Keywords: *longevity; human-centered design; participatory design; financial planning*



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1 Introduction

According to statistics from the World Health Organization, the ratio among the world's population over 60 years old will nearly double, from 12% to 22%, between 2015 and 2050 (World Health Organization, 2022). Similarly, projected life expectancy has increased globally. Coughlin (2017) proposed the new framework of 8000 Days to describe the increasing amount of time beyond retirement, and Golden (2022) and other scholars coined the new term "Furtherhood" to describe people in their stage of living beyond 100 years old. In the wake of increased life expectancies and the rapidly growing population of older adults, new thinking is required to help people live better as they age. How do we adapt to multigenerational environments and the changing workforce? How do we leverage emerging technologies to support the needs of older people? How do we shift our mindset from planning for retirement to preparing for increasing longevity? These complicated systemic questions are closely tied to leveraging sustainable, inclusive, and innovative financial planning strategies to improve individuals' quality of life as they age. Financial planning is not only about numbers or money, but also encompasses other aspects of peoples' lives such as life milestones, education, transportation, healthcare, and housing (Lee et al., 2022).

Some efforts have been made to design new approaches to financial planning. For example, MassMutual collaborated with IDEO, an international design company, to redesign user-centered financial services envisioning our financial wellbeing (Engstrom, 2018; IDEO & MassMutual, 2015). New York City government collaborated with NYC Department of Consumer Affairs Office of Financial Empowerment, Citi Community Development, Center for Economic Opportunity, Parsons School of Design DESIS (Design for Social Innovation and Sustainability) Lab, and the Mayor's Fund to Advance New York City to launch Designing for Financial Empowerment (DFE) by implementing service design and design for social impact to redesign more accessible, effective, enjoyable, and respectful finance service aiming to improve financial literacy and financial well-being (Office of Financial Empowerment et al., 2014). The two examples mentioned above cover policies, environment, and user experience, but there is little research to discuss using physical assets that are designed for financial planning purposes.

2 Literature review

To help us better understand the research context, qualitative and quantitative methodologies, and computer-aided analysis tools, we conducted a comprehensive literature review around four themes: 1. Longevity Planning Block (LPB) design: what are the process and documents behind creating a research toolkit, 2. research approach: how do we conduct experimental research through participatory observation and interviewing, 3. evocative objects: what are the research techniques and creative processes we can apply to our participants through tangible artifacts, and 4. qualitative data analysis: how do we objectively analyze qualitative data from the field?

2.1 Longevity Planning Block (LPB) design

The study applied Longevity Planning Block (LPB), a financial planning toolkit prototype initiated and designed by the MIT AgeLab (Lee et al., 2023; Lee, 2022), to test users' perceptions of LPB's desirability, engineering feasibility, and business viability, which are the three factors described by the IDEO Design Toolkit (IDEO, 2011). The design concept of LPB is to meet the three objectives: 1. to provoke people to think holistically about their future selves in retirement; 2. to stimulate a structured process of

conversation about current and unarticulated assumptions, needs, opportunities and challenges in older age that are not directly financial in nature; and, ultimately, 3. to help people better prepare for retirement.

LPB was initiated and created by Coughlin and Lee from the MIT AgeLab. LPB design was tested and prototyped over 8 months with 10 members of the MIT AgeLab research team, 35 financial advisors, 5 older adults, and service designers to distill the critical content regarding suggested financial planning frameworks, visuals, services, business models, and product design features, e.g., color, material, and finishing (CMF).



Figure 1. The paper prototype of Longevity Planning Blocks (photo credit: Sheng-Hung Lee).

The LPB framework is inspired by the notion of 8,000 days of retirement (Coughlin, 2017) and the concept of five-quarter (5Q) life framework (Golden, 2022). The MIT AgeLab research team identified retirement as a series of life stages and proposed four retirement phases that people will experience or are experiencing: 1. manage ambiguity, 2. make big decisions, 3. manage complexity, and 4. live solo, and developed provocative questions for each stage, to map out financial planning services (Table 1).

Table 1. Four retirement phases associated with two provocative questions

Retirement phase	Retirement I Manage ambiguity	Retirement II Make big decisions	Retirement III Manage complexity	Retirement IV Live solo
Provocative questions	Where will you live? How will you manage your health?	Who will you have lunch with? What will you do Tuesday morning?	How will you provide care? How will you get an ice cream cone?	Who will care for you? Who will change your light bulb?

In the study, we shared fourteen LPB prototypes with two participants to explore their reactions, feedback, and ideas through participatory observation and interviews. We recruited a family as our interviewee unit aiming to compare multigenerational perspectives, to see how they might influence family dynamics and interfamilial conversation about money. We sought feedback about the content, graphics, scenarios, business potential, and user experience. Because LPB is still in the pilot test stage, we want to refine the overall design considerations before manufacturing the product. Regarding the sample size of user testing, we hope to conduct similar interviews and experiments in the future before finalizing the LPB design and the process of using LPBs. LPB is still in the process of applying for MIT licensing (M.I.T. Case No. 24907, "Longevity Planning Blocks for use in Retirement Planning").



Figure 2. The high-resolution prototype of Longevity Planning Blocks (photo credit: Sheng-Hung Lee).

2.2 Understanding people: user interview, focus group, and Human-Centered Design

Participatory observation and interviews have been primary methods not only for ethnographic research (Boellstorff et al., 2012; Crang & Cook, 2007) but also for design thinking such as Human-Centered Design (HCD) (Brown & Katz, 2019; IDEO, 2015; IDEO, 2011). In the context of participatory observation, "interviewing" can be interpreted as a formal and informal study approach ranging from highly structured (e.g., researchers aim for specific goals and rigid interview steps to achieve the outcome), semi-structured (e.g., researchers set up an interview discussion outline with participants to discuss), and relatively unstructured (e.g., researchers facilitate conversational style without specific focus with participants).

Crang and Cook suggested conducting a comprehensive interview including five steps: 1. making arrangements, 2. preparing a checklist, 3. asking the "right" question, 4. conducting serial interviews and 5. constructing information (Crang & Cook, 2007). The five-step process can enable researchers and ethnographers to think of questions such as: What did our interviewee do? Where did they do it? How did they get there? Who was with them? These life-relevant and approachable questions can

better empower researchers to dive deeper and to be empathetic towards our interviewees. Interviewees' feelings such as excitement, sadness, and disappointment will also project through their body language. Therefore, researchers need to be perceptive to capture both verbal and non-verbal data and translate them into meaningful insights.

Walling (2009) mentioned in-depth interviews with disadvantaged respondents to discuss how respondents perceive, interpret, and respond to sensitive topics such as money, religion, family, and personal feelings. He considered respondents to be identified as "recipients of care" and proposed three sections to conduct user interviews, starting from the organizational layer to understand what the problems were and how respondents were assisted by organizations to alleviate the problems. Next, in the self-expression layer, the respondents shared their ideas and feelings based on the experiences they have gone through. In the last section, researchers focus on more private and personal questions including beliefs, life challenges, and other intimate questions.

Unsurprisingly, the study around financial planning and advising is a sensitive topic. Sometimes it is hard for both researchers and interviewees to handle these sensitive topics, including privacy-related questions, sex, gender, ethics, and money. As a result, interviewees might be hesitant to share the information sought by researchers. Researchers might not get what they want in interviews, but we can learn from the data we received in terms of its embodiment (e.g., description of the conjuncture of structure and feeling), vibe, interview setting, silences, and pauses, which echoes what Pillow proposed as "uncomfortable reflexivities" in 2003. Facilitating user interviews connected to sensitive research topics like finance can help us consider what power relationships and dynamics exist between researchers and respondents and how we can provide or design more effective prompts to ensure the study result (Nairn et al., 2005).

In addition to user interview methodology, focus groups are another successful approach in identifying people's desires, motivations, values, and first-hand experiences. It is a method coupled with contextual inquiry and task analysis to gain a bird's-eye view of people's behavior and decision-making processes (Kuniavsky, 2003). Therefore, people's attitudes and perceptions can be relatively easily identified through conducting a focus group. The downside of the approach is that it is not suitable to prove design concepts or to validate a certain situation. Kuniavsky mentioned four types of focus groups: 1. exploratory, 2. feature prioritization, 3. competitive analysis, and 4. trend explanation. Among them, feature prioritization can be a suitable type to improve the design feature of LPB since the concept is at the beginning of the product and service development cycle. In general, using a focus group can provide an accessible opportunity to understand users in a quick, low-cost, and approachable way (Kuniavsky, 2003).

In the study, we not only applied participatory observation and interviewing techniques, but also leveraged the benefits of HCD and the creative process (Wizinsky, 2022) to explore the private yet critical and socially impactful issue: how do we redesign financial planning services for an aging population to envision longevity, where we need to be considerate in terms of the overall data collection procedure, such as the discussion guide we design, the approach we use to facilitate the problem-solving workshops, the environment we establish, and the experience we curate.

2.3 Evocative object: participatory design through physical artifacts

Turkle discussed the meaning and power of everyday objects and how an object can evoke people's emotions to provoke their thoughts (2007). Based on these ideas, the concept of evocative objects that are interconnected with things, thoughts, and feelings re-emphasizes that objects can carry ideas and passion associated with people's emotions and intellect. "We think with the objects we love; we love the objects we think with," said Turkle. Ishii and Ullmer from the MIT Tangible Media Group proposed the concept of Tangible Bits to illustrate the idea of grasping and controlling bits from users' perspective coupling with physical objects and surfaces to catalyze users' attention to enhance human perception (Ishii & Ullmer, 1997). Buchenau and Suri from IDEO proposed the concept of experience prototyping, as a more interactive way to engage the design teams, users, and clients to facilitate constructive conversation to envision future conditions through active physical or digital artifacts (Buchenau & Suri, 2000).

Turkle, Ishii, and Buchenau demonstrated the power and effectiveness of using the idea of tangibility in various perspectives from academics to industry and from individual to societal. In the study, we explored and tested the hypothesis of enabling participants to generate more meaningful, constructive, and insightful discussions through a series of tangible artifacts such as fourteen LPBs created and designed by the MIT AgeLab (Lee, 2022; Coughlin, 1999) to capture how people open different senses to think, embrace, and adopt innovative solutions.

2.4 Computer-aided qualitative analysis tool: ATLAS.ti

ATLAS.ti is a collective software designed for qualitative research, quantitative research, and mixed-approach studies (Muhr & Hecker, 1993). The computer-aided software was created and launched by Thomas Muhr in 1993 at the Scientific Software Development company. ATLAS.ti has been applied in various fields, such as aeronautics and astronautics industries, system engineering, medical, and many other fields to assist researchers and designers (Lee, Coughlin, et al., 2023). Its collaborative feature is beneficial for using video coding to facilitate and analyze more complex projects collectively. The interface is shown in Figure 3.

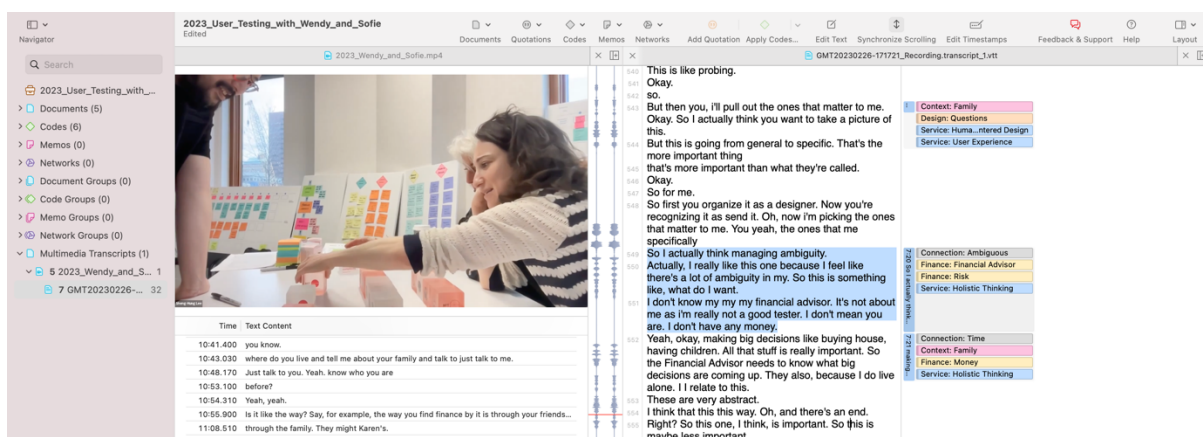


Figure 3. Screenshot of ATLAS.ti interface for participatory observation and interview.

Ultimately by leveraging codes we created and curated, we used a Sankey diagram generated by ATLAS.ti to analyze and visualize the relationship between an interviewee's interesting content, meaningful keywords, provocative quotes, and some early-stage design concepts and suggestions during the discussion. ATLAS.ti can calculate the coefficient based upon the relationship strength

between two defined codes (ATLAS.ti, 2022). The width of each code on the Sankey diagram can represent whether it is a strong or weak connection. From a mathematical perspective, we defined n_{12} as the c coefficient value for defined code n_1 and n_2 , and we add numbers into the formula (1).

$$c = n_{12} / (n_1 + n_2 - n_{12}) \quad (1)$$

In short, we defined the value of zero as no co-occur between two codes and the value of one means fully co-occur. The coefficient value c can be considered as quantitative content analysis evidence and we documented the rest of the coefficient values (Table 3) associated with 23 defined codes (Table 2).

3 Research method and overview

We followed the research method in the following five sections: 1. recruitment, 2. materials, 3. environment, 4. interaction, and 5. synthesis. To accurately execute our research method, we not only need to prepare participatory observation and interviewing materials, but also control our research environment such as lighting, space, soundproofing, and even dessert and drinks. We utilized an experimental area in MIT E-40 building room 235, which is approximately 323 square feet with a two-window view for our 3.5-hour user interview and participation activities (Figure 4).

Using participatory observation and interviews process as described by May (2011), we received participants' feedback and ideas to help us refine LPB design in terms of content, visuals, service model, business potential, and overall service providers' and receivers' experiences. Further, leveraging fourteen LPBs as tangible artifacts can help us explore how we can improve the design outcome and give designers and researchers first-hand consumer insight. We applied ATLAS.ti, a qualitative data analysis software (Muhr & Hecker, 1993), to systematically decompose the interview recordings and transcription and users' behavior. The analysis framework is inspired by the noticing-collecting-thinking (NCT) model consisting of descriptive-level and conceptual-level analysis (Friese, 2014).

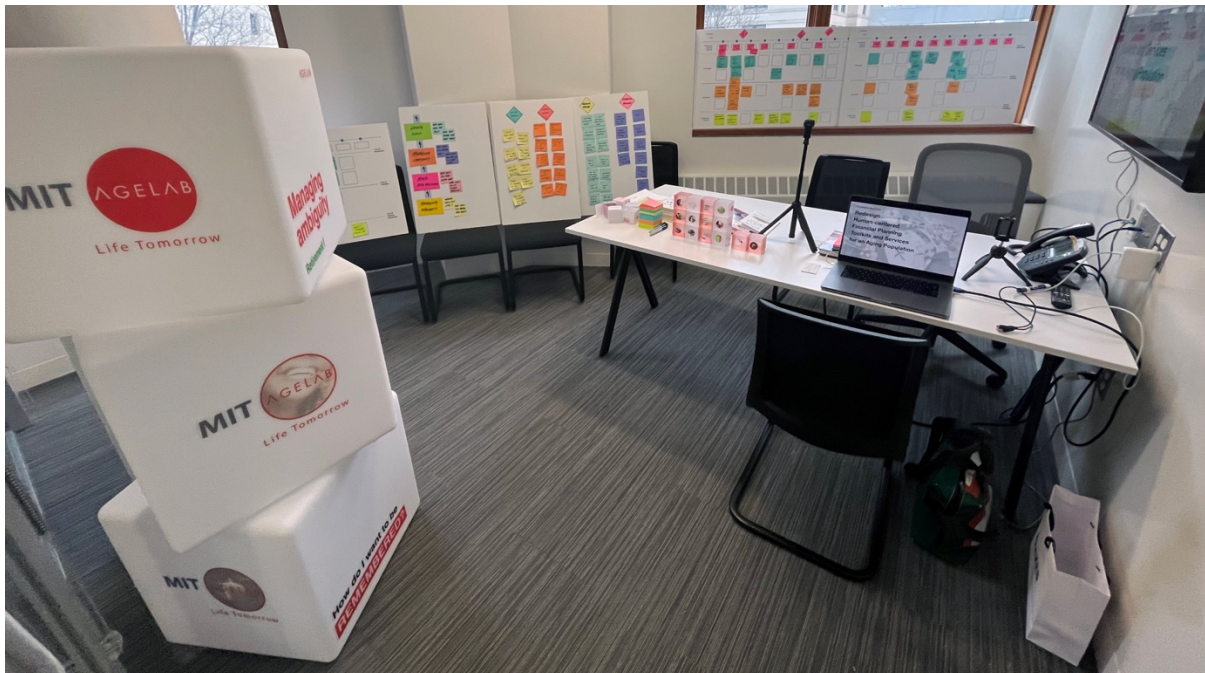


Figure 4. We set up an immersive participatory observation and interviewing space with interview prompts, relevant books, recording devices, and a consent form (photo credit: Sheng-Hung Lee).

3.1 Recruitment: invite participants as family unit

Since financial planning for an aging population is a very sensitive and complicated problem, each decision requires people to consider many aspects such as health conditions, long- and short-term investment, economic trends, emerging technologies, multigenerational workforce, and other personal and public issues. Therefore, our aim is to define “family” as an interviewee unit to recruit participants by considering their education level, occupation, income, life stages, and health condition to identify the key opinion leader in the study. We are also curious to observe how family members interact to discuss finance-related problems (Table 2). Due to the scope and budget of the project, we studied one family group of two interviewees through precise recruiting and four-hour in-depth participatory observation and interviewing.

Table 2. User interview demographic (Feb 26, 2023, 11:00~14:00 EST at MIT CTL office room)

	Age, gender, and relationship	Education background
Participant A	67, Female, mother	Major in education, arts, and design
Participant B	37, Female, daughter	Major in design and arts

3.2 Materials: prepare discussion guide and consent form

We followed the institute’s regulation from MIT COUHES (Committee on the Use of Humans as Experimental Subjects) to build a formal consent form to gain permission to conduct user interviews and participatory exercises. The complete discussion guide and consent form are documented in the appendix. Since the topic of financial planning is a relatively sensitive and personal topic, we want to give participants a sense of safety and security. The discussion guide is divided into two parts: 1. service design and 2. financial planning. It is important to note that we are interested in not only understanding both parts’ questions and respective responses, but also understanding the perceived relationship between the two parts.

3.3 Environment: set up an immersive space for user interviews and participation session

Choosing and setting up an appropriate space for user interviews and participation exercises is critical, especially since we only focus on a few interviewees to study. Considering safety, quiet, cleanliness, and accessible technology such as a big screen and internet, we booked one second-floor office space at the MIT Center for Transportation and Logistics (CTL) to conduct a user interview. We set up recording devices including one Sony α7 camera, one iPhone, and one GoPro 360 camera to document the behavioral (non-verbal) part of the experimental study. We left a space for a laptop and opened Zoom to record most discussions during the interview and participatory session for verbal analysis. Additionally, to encourage participants to express their thoughts and to establish a suitable “prototyping” space to allow them to try to build out new possibilities, we also provided them with some creative tools: some Sharpies, Post-it notes, five posters, five foam core boards, letter-size paper, and five relevant finance books to put beside the participants’ seat.

3.4 Interaction: follow conversation flow to explore more potential possibilities

We used a discussion guide to help us cover the areas that we are interested in exploring. Most importantly, we need to maintain a flexible, adaptable, and accessible flow of conversation with our interviewees. Conducting a successful user interview not only depends on the facilitators, but also

relies on the interviewee's education background, interests, occupation, mood, health conditions, and many other personal influences.



Figure 5. We conducted participatory observation and interviewing to engage with two participants by using fourteen Longevity Planning Blocks (photo credit: Sheng-Hung Lee).

3.5 Synthesis: analyze video transcription and participants behavior by using ATLAS.ti

In the study, we conducted a qualitative experiment by analyzing a participatory observation and interviewing session. Using Zoom cloud and GoPro 360 video recordings, we analyzed the video transcriptions by ATLAS.ti software (Sormani et al., 2017). The analysis process and framework are based on the noticing-collecting-thinking (NCT) model consisting of descriptive-level and conceptual-level analysis (Friese, 2014). A descriptive-level analysis can be viewed as a data exploration stage. The intention is to find keywords, themes, and concepts from video transcriptions to identify and name video codes. The conceptual-level analysis makes sense of these video codes by connecting different codes, forming relationships between codes, and generating meaning and insight according to our research topic.

One of the benefits of using Zoom cloud recording is our ability to leverage its video transcription function and use it as an input source for ATLAS.ti. We used ATLAS.ti to code both participants' behavior and verbal content. Table 3 demonstrates the explanation and number of times (n) the code shows in the observation and interview video transcriptions. Thus, we came up with six theme codes and 22 codes. The structure and definitions of the codes can help us study user interviews in a more organized and scientific way.

Table 3. The brief definition of six theme codes (n is the number of times the codes or relevant concepts shown in the video transcriptions and discussion)

Six theme codes	Explanation and highlighted 23 defined codes
Connection (n=19)	Connection can stand for people’s relationship with other people, the sense of time, their feelings in response to financial or non-financial challenges. We highlighted the codes: trust (n=9), time (n=6), scary (n=4), ambiguous (n=3), and relationship (n=2).
Context (n=17)	Context includes the environment that people feel, the culture of communities, families that people cultivate, the policies and systems that people created, and other broad socio-economic issues. We highlighted the codes: family (n=14), culture (n=4), diverse (n=2), gender (n=1), and home (n=1).
Design (n=3)	Design is more focused on financial planning questions in the discussion, such as how we can make the content more accessible and understandable, and the engagement approach more playful, interactive, and tangible. We highlighted the codes: question (n=2), playful (n=1), and tangible (n=1).
Finance (n=19)	Finance is the core of the research, considering comprehensive aspects from risk management, perception of money, financial advisors’ roles and responsibilities, and the importance of maintaining a trustworthy brand for a human-centered financial institution. We highlighted the codes: risk (n=11), money (n=7), advisor (n=6), and institution (n=2).
Service (n=7)	Service emphasizes how to empower financial service providers and recipients to gain more holistic views with system thinking and how to apply human-centered design to improve user experience across physical and digital touchpoints. We highlighted the codes: user experience (n=4), holistic thinking (n=3), and human-centered design (n=1).
Well-being (n=6)	Well-being covers both cognitive and physical health and how both key factors influence people’s behavior and how they make critical financial decisions. We highlighted the codes: physical health (n=6) and cognitive health (n=4).

4 Results and discussion

Based on one approximately 180-minute interview with two users and the interviewees’ observed interaction with LPB, we listed out four design considerations through the lenses of product design, service innovation, and user experiences. In the study, we focus on how to translate these invaluable discussions and learnings with two participants into design considerations and suggestions to help us design a better version of LPB.

4.1 We can generate user insights from qualitative analysis software (ATLAS.ti)

We made six theme codes with 23 codes from the three-hour participatory observation and interview and we used ATLAS.ti to calculate the coefficient value c to evaluate the strength of the relationship between any two defined codes. Through studying the relationship between defined codes, we can qualitatively infer the research insights from the content and observational perspectives (Table 4).

Table 4. Coefficient values c between 6 theme codes and 23 codes (value close to 1 represents a stronger connection)

	Connection	Context	Design	Finance	Service	Well-being
Ambiguous	0.16	0.00	0.00	0.16	0.25	0.00

Relationship	0.11	0.00	0.00	0.05	0.00	0.00
Scary	0.21	0.17	0.00	0.15	0.10	0.25
Time	0.32	0.10	0.00	0.19	0.18	0.09
Trust	0.47	0.08	0.00	0.22	0.14	0.00
Culture	0.05	0.24	0.00	0.10	0.00	0.00
Diverse	0.00	0.12	0.00	0.11	0.00	0.14
Family	0.22	0.82	0.06	0.38	0.17	0.18
Gender	0.00	0.06	0.00	0.05	0.00	0.00
Home	0.05	0.12	0.00	0.05	0.00	0.00
Playful	0.00	0.00	0.33	0.00	0.00	0.00
Questions	0,00	0.06	0.67	0.00	0.13	0.00
Tangible	0.00	0.00	0.33	0.00	0.00	0.00
Financial Advisor	0.32	0.05	0.00	0.32	0.18	0.00
Financial Institution	0.11	0.00	0.00	0.11	0.00	0.00
Financial Literacy	0.00	0.12	0.00	0.11	0.00	0.14
Money	0.08	0.33	0.00	0.37	0.18	0.18
Risk	0.36	0.22	0.00	0.58	0.20	0.13
Holistic Thinking	0.16	0.05	0.00	0.16	0.43	0.00
Human-Centered Design	0.00	0.06	0.33	0.00	0.14	0.00
User Experience	0.15	0.11	0.17	0.10	0.57	0.11
Cognitive Health	0.15	0.11	0.00	0.10	0.10	0.67
Physical Health	0.14	0.21	0.00	0.19	0.08	1.00

Figure 6 is a Sankey diagram that shows the coefficient value c indicating the connections among six theme codes and 23 defined codes. For example, we found that when we discuss the connection with finance as a theme code, the codes risk ($c=0.58$), money ($c=0.37$), and financial advisor ($c=0.32$), have a strong connection. We also found two strong connections with two codes, family ($c=0.38$) and trust ($c=0.22$). This can imply that further research opportunities for designing financial planning can focus on the relationship between financial service providers, recipients, risk management, family, and trust to shape the research question we want to explore: how do we envision more inclusive and reliable finance systems and human-centered services from both financial advisors' and customers angles' by integrating the needs of individuals, families and communities considering risk management and trust?

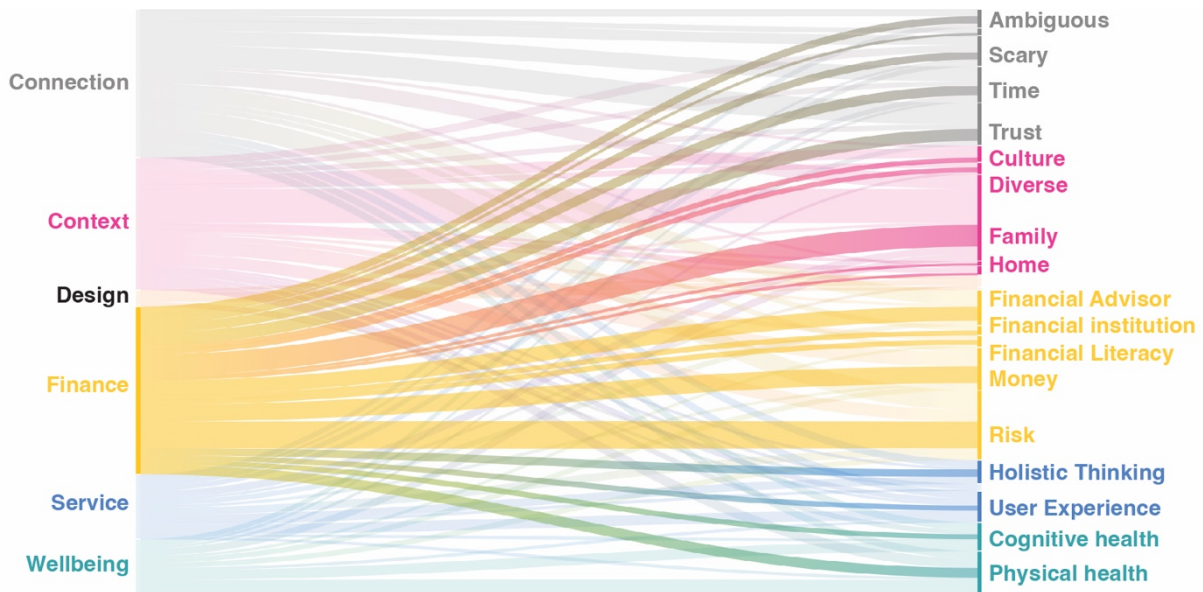


Figure 6. Sankey diagram generated from participatory observation and interview.

4.2 LPBs can be designed with adaptable and tailor-made content and an accessible format

The design of LPBs contains a level of flexibility to allow participants to play to understand themselves. LPB can be designed to be more exploratory, especially the content of six faces. Participant B suggested that only the top and bottom faces have content with simple questions and the questions that are highlighted should form a relationship or meaning that might matter to users. She also suggested, “Why not use a card format?” and pointed out that the cube shape may make it difficult for individuals with dexterity challenges, such as females with small hands, to grasp and hold or move around for conversation. For the color, material, and finishing (CMF) of LPBs, we considered its texture, weight, and even sound when two blocks click together. We need to be mindful of the psychological side, and people’s cognitive capability, especially financial planning service recipients. Building trust and maintaining a professional image are much more critical than selling financial products, especially for the first meeting.

4.3 We need to identify the suitable moment to optimize the value of LPBs to facilitate discussion with financial advisors

Considering the discussion topic involves finances, which is relatively private and sensitive, the process of financial planning, including the tools, overall tone of voice and vibe, can’t feel like a gimmick or be too playful. “I spend so much money and my life investment with financial advisors and you show me toys or cubes?” said Participant B. What are the best moments in the minds of the clients to apply these tangible artifacts to optimize benefit to clients and maintain clients’ trust? Therefore, consideration of the scenarios for financial advisors to use LPBs is critical.



Figure 7. Photo of conducting user interview and participatory activities (photo credit: Sheng-Hung Lee).

4.4 We can shift a professional image from a financial expert to a longevity planner

Financial advisors do not just offer their professional knowledge as basic services; they also need to have holistic views to provide their clients with the latest information to suggest they make smart investments. What does this mean for LPB design? The image of LPBs need to be considered in the financial advisor's context, such as the curation of an office environment and the vibe of the space, the position of lights and its color, the layout/floorplan of putting the plants associated with the characters of certain zones, the fragrance of the objects and their relationship with the areas. Curating the right pieces of furniture, objects, and financial tools in the financial advisor's office is critical. "You won't expect the doctors you go to will provide comfortable sofas," said Participant A. It inspired us to envision the future financial office. Unsurprisingly, hybrid work has become a new norm. Therefore, the meaning of physical space/touchpoints has changed. Do we need more open space for communication for building trust? In the virtual world, what's the new role of financial advisors, such as facilitators?

4.5 Building mutual trust with financial advisors can happen through in-person engagement

The outbreak of COVID greatly changed the way we work, act, and interact with other people. It has impacted financial planning services by extending more self-serve services and digital touchpoints. Participant B discussed that in-person meeting for her is critical, since she can read her financial advisor's body language. She wants to feel like she is being served by her financial advisor and she doesn't like to do extra work merely to get her financial advisor's attention. Financial advisors need to treat their clients as the center of services, keep asking them questions, and send them care and important information that matters to them. We can consider how LPBs can be used to add value to the in-person meeting to help customers like Participant B not only feel served, but also enable them to be more expressive to articulate customers' needs.

4.6 Financial planning services consist of a series of time-sensitive products

Clients, especially older adults, are time-sensitive in the context of investment, and have trouble thinking long-term due to uncertainties about the future (Lee, Yang, de Weck, Lee, Coughlin, Klopfer, et al., 2023). “I care about short-term investments more than long-term ones since I don’t know how long I can live,” said Participant A. As for Participant B, it was not easy for her to envision the financial challenges 10 or 20 years in her future either. The conversation gave us an insight on how to make financial planning services tangible to help people estimate the obstacles and opportunities by envisioning their future selves. How can we build the product features into LPBs to facilitate more effective conversation by making financial planning services tangible?

4.7 Financial advisors practice listening skills and be empathic to people

Both participants agree that the first thing that financial advisors need is to listen to what the client wants or needs. Listening is critical since it’s a reflection of empathy. One purpose of using LPBs as a self-projection medium is to encourage clients (including people in pre-retirement, retirement, and post-retirement) to share their life stories and to enhance financial advisors’ listening skills to build trust and friendship. The design intention of using 14 physical LPBs is also to help manage both clients and financial advisors’ expectations in terms of their financial goal, investment, and milestone setting.

4.8 It is urgent to improve financial literacy and reshape finance curriculum

During the three-hour participatory observation and interview, we discussed the importance of financial literacy and how we can improve the current education system by integrating a fundamental finance curriculum. On average, people between 50 and 75 years old are for the first time finding their financial advisors for help (Jenson et al., 2022). Most schools don’t teach basic finance. Therefore, people don’t know how to ask for help to deal with their financial emergencies. High school might be the suitable time to promote finance knowledge through school before students enter universities. It can lay down a great foundation for them to acquire this useful life skill.

4.9 Family is the safety-net unit when making critical finance decisions

Interviewees mentioned that they made critical financial decisions by asking their family for advice. They do trust their financial advisors, but they trust their families more. This behavior inspired us to think about connecting LPBs to family as one of the great resources and informed us that financial planning decisions are made collectively.

4.10 Further study

The study put emphasis on designing the LPBs physical artifacts and how we want people to respond based on various scenarios. As a next step, we can explore the LPB’s service ecology if we put it at the center of our financial service systems: what are the critical system factors that will affect the LPB design (Lee, Yang, de Weck, Lee, Coughlin, & Klopfer, 2023)? What is the new financial service model that we need to consider from the perspectives of culture, government, economic planning, and even the voices of diverse users such as LGBT, younger generations, disabled people, and more?

The shift from planning for retirement to creating for longevity is a dramatic transformational process. Many unpredictable factors will shape our current socioeconomic systems, government policies, healthcare platforms, and people’s perception of new lifestyles, working environments, and consumer behaviors. By understanding what our consumers need in terms of financial planning services, the scope of future research can extend from financial planning to life planning.

5 Conclusion

The study applied participatory observation and interviewing to refine the Longevity Planning Blocks (LPBs) design for a more inclusive financial planning experience to empower service providers, such as financial advisors, and recipients, including people in three different life stages: pre-retirement, retirement, and post-retirement. Experimental qualitative research methodologies help us consider LPB product design and service innovation with accessible content and provocative questions, an interactive format, inspiring visuals, business and services strategies, and an immersive user experience to suggest four high-level design considerations to improve LPBs: empathy, empowerment, experience, and education.

5.1 Empathy—Financial trust is not only to be built, but also maintained and invested

Building trust with clients is just the first step for financial advisors. The interviewee shared that she feels she cannot completely trust anyone, especially people who talk about or manage money. Thus, the key is to maintain trust and enhance the relationship between financial advisors and their clients. People need to feel that their financial advisors are working for them, keeping them updated on their financial condition, and proactively asking them questions to seek a holistic understanding of their unique lifestyle and needs. LPBs should be designed so that financial service providers can deliver tailor-made services. Therefore, we need to design the content in a modular and adaptable way to satisfy different clients' needs.

5.2 Empowerment—The Longevity Planning Block (LPB) is a financial empowerment tool to help facilitate deeper and more engaging conversation

When meeting with financial advisors for the first time, clients do not want financial advisors to directly demonstrate LPBs to them without explaining the overall financial planning landscape or strategy. In general, people view financial topics more seriously and do not expect gimmicky physical artifacts to interrupt the discussion. Instead, they expect that the financial advisors should give them time to understand the overall financial situation and walk them through financial tools before using other physical artifacts.

5.3 Experience—The financial planning process is an experiential journey that connects service providers and service participants

People want to have a full human-centered experience when asking for financial help, preparing materials, choosing suitable financial advisors, to identifying business opportunities and why they matter to people preparing for longevity. LPB is part of the physical touchpoint during the journey. Further research can focus on the service landscape generated by LPBs to map out the emerging roles and responsibilities of financial service providers and clients. The Human-Centered Design (HCD) has been embarking on an immersive omnichannel experience by using LPBs as evocative artifacts to enable people to open up the conversation and set the right expectations.

5.4 Education—Financial literacy is a foundation for financial planning service design

In the participatory observation and user interviews, individuals suggested leveraging LPB as an educational toolkit to increase opportunities to expose individuals to finance-related knowledge, finance education, and relevant training. Financial literacy is a base of financial planning services that are critical in not only guiding people to make the right decisions, but also emphasizing longevity and promoting better financial wellbeing.

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