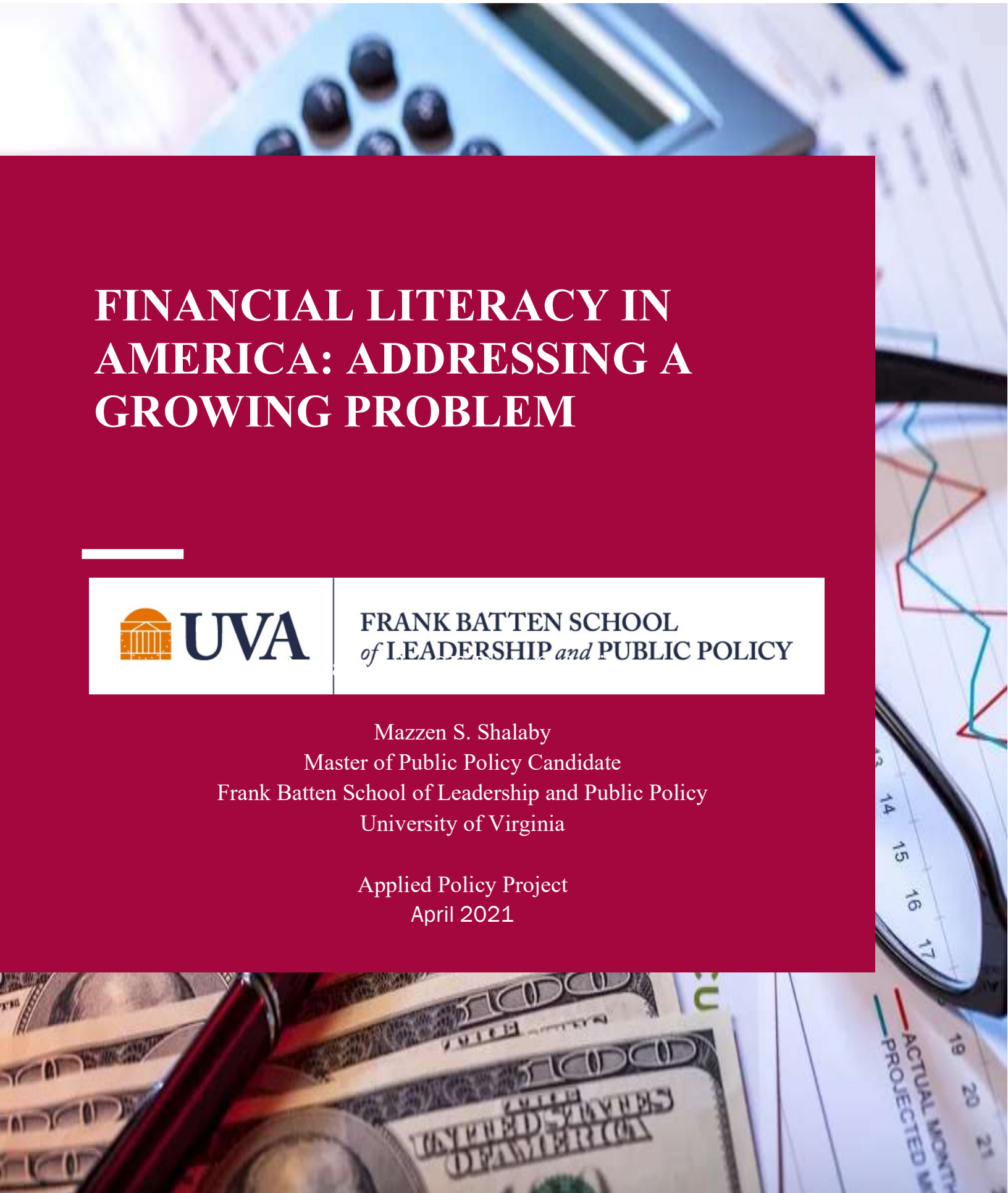

FINANCIAL LITERACY IN AMERICA: ADDRESSING A GROWING PROBLEM

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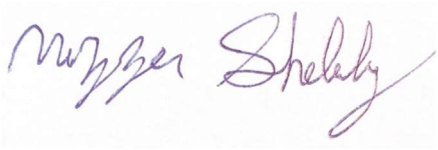
On my honor as a student, I pledge that I have neither given nor received unauthorized aid on this assignment



Executive Summary

Americans lack the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial well-being, otherwise known as financial literacy. This financial illiteracy leads to poor financial and health outcomes and has negative impacts on society and the economy as a whole. These problems are exacerbated by the increasingly complex consumer and financial markets most Americans face today. There are a great number of financial literacy programs offered through private and public entities, however these programs and the field more generally lack standardization and an empirical basis. This leads to many programs having little to no impact on financial literacy, leaving their participants no better off having completed the course.

SF Data Solutions is looking to expand its reach into the world of personal finance, with a particular focus on improving financial literacy for young Americans. This report provides a detailed policy analysis with a recommendation for how SF Data Solutions can most effectively realize their goal.

Utilizing a detailed review of the policy history and literature on the subject, this analysis crafts three potential alternatives for SF Data Solutions to pursue.

- Best Practices Guide: Partner with industry expert to create and promulgate a best practices guide for financial literacy programs
- Comprehensive Financial Literacy Program: Create and administer a comprehensive financial literacy program
- Research and Policy Advocacy: Advocate for additional research funding and policy prioritization for financial literacy programs at the state and federal level

Each of these alternatives is assessed on the basis of three equally-weighted criteria:

- Cost
- Effectiveness: Split into Breadth (50%) and Depth (50%)
- Feasibility: Split into Political (20%) and Administrative (80%)

Based on the analysis of the project outcomes for each alternative, this report recommends Alternative One: the creation and promulgation of a Best Practices Guide in partnership with an industry expert. This alternative will bring standardization and empirically-supported rigor to the field of financial literacy. It will also allow the thousands of existing programs around the country to be updated and improved. Overall, it is the most balanced alternative in regards to the criteria, and is well within SF Data Solution's capabilities to carry out. In order to succeed, this alternative will require a strong relationship with a partner organization and rigorous implementation strategy to ensure the guide's principles are actually put into practice. This alternative is not without tradeoffs and challenges, which are considered in the end of the report.

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Roadmap

This report encapsulates seven months of research and analysis regarding financial literacy for SF Data Solutions. The goal of this report is to provide sufficient background and evidence to suggest and evaluate alternatives to address the policy problem, and to ultimately recommend an alternative and implementation strategy. The report begins with a definition of the policy problem our client seeks to address before introducing the client and reviewing the problem's relevance to their mission. In the "Background" section, the report provides a definition of financial literacy along with evidence on the policy problem and some integrated issues, its history to date, and some of the important equity concerns it raises. This section also considers the problem's consequences and the costs associated with these impacts. The "Existing Interventions" section discusses the different types of currently existing financial literacy programs and their goals, and includes a literature review of a number of studies, detailing both their rigor and findings regarding the efficacy of existing financial literacy programs. This literature analysis concludes with a number of key takeaways that feature throughout the remainder of the report. The "Alternatives" section defines three potential policy alternatives for SF Data Solutions to pursue, while the "Criteria" section outlines the measures for assessing these alternatives, as well as the scores each alternative receives. The report closes with a policy recommendation followed by a brief implementation strategy guide.

Problem Statement

Only 57% of American adults were considered financially literate in 2015, ranking the U.S. 14th in the world. Financial illiteracy leads to more borrowing, poorer job planning, and less certain financial futures due to inadequate emergency and retirement savings (GFLEC, 2019). This problem is worsening among young adults (aged 18-34) who saw a 13% decline in financial literacy from 30% all the down to just 17% in the last decade, as measured by the national financial capability study (Keshner, 2019). This issue is exacerbated by the fact that young adults are entering a more complex financial environment with greater access to credit and sophisticated financial products, and more debt, than previous generations (Birkenmaier et al., 2019). This increased access makes younger generations more prone to accumulating credit and other forms of debt, and requires a stronger financial education in order to be a competent consumer of financial products.

Client Overview

SF Data Solutions (SFDS) has a history of working with clients in order improve long term planning, streamline processes, and maximize efficiency. They have worked predominantly in the agriculture (community farm inventory management), advocacy (legal aid), non-profit (Charlottesville Debate League) and education sectors to date. SFDS is now focusing their mission on the goals of financial literacy, education, and wellness. SFDS seeks to explore the world of personal finance and intergenerational wealth accumulation to advise the public on the best way to handle their individual finances. Financial literacy is the foundation upon which solid personal

finance stands, making this problem of central importance to SFDS's mission. This is one of SFDS's first major projects in the personal finance field and addressing the core issue of financial literacy will be a critical component of future analyses. SFDS has already developed a personal finance and budgeting tool to aid people in taking control of their finances. SFDS hopes to utilize this analysis as guidance for its path forward, looking to answer questions about how to improve and expand on their existing tool, and understand where to focus future research, lobbying, and product innovation efforts. This problem is particularly timely not only in terms of SFDS's shifting priorities, but also due to the financial problems gripping the nation as a result of the COVID-19 pandemic. This pandemic and the economic recession associated with it are further exacerbating this problem, and the relief efforts pose potential opportunities to learn about and address some of these issues.

Background

Problem Background

Why are low and declining financial literacy rates a problem? Studies indicate that financial literacy is a powerful predictor of important day-to-day and long-term financial behaviors that are critical to young adults' financial wellbeing, including the use of high-cost methods of borrowing, the holding of savings, and planning for retirement (Scheresberg, 2013). Financial literacy is also an important component of a nation's economic growth and financial stability (Damayanti et. al., 2018). Thus, low financial literacy rates threaten the wellbeing, financial and otherwise, of Americans and the American economy as a whole. Barring successful intervention, this problem is likely to persist and worsen as the need for financial literacy is likely to only grow.

The first step in understanding this issue is an understanding of its various components and the sometimes-nebulous terms used to describe them. This section will define financial literacy itself before discussing some of the most relevant issues related to the policy problem.

Financial Literacy

There is a great deal of ambiguity surrounding the term "financial literacy." Various groups and organizations define financial literacy in a number of similar ways, all capturing the fundamental principles that financial literacy involves the use of financial knowledge and skills to manage resources and make decisions, with many of these definitions including a focus on long-term planning and success (Fernando, 2020). This analysis will borrow The President's Advisory Council on Financial Literacy's definition of personal financial literacy: "the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial well-being" (PBS). It will also use the Cambridge Dictionary's definition of "financial" as "relating to money or how money is managed" (Cambridge).

Debt

Debt and its handling play key roles in financial literacy and decision making for most Americans. According to the Federal Reserve, debt among young people has increased dramatically in recent

years. This is largely due to rapidly increasing student loan and credit card debt. 22.4% of families had student loan debt in 2016 compared with less than 9% in 1989 (Federal Reserve, 2018). Nearly 70% 2019 college graduates had student loan debt, with an average of $29,900; this is compared to an average of less than $13,000 in 1996 (ICAS, 2020). This unprecedented level of student loan debt is coupled with, and likely causing, increased credit card and other debt (Fry, 2020). This build-up of debt is associated with major setbacks in wealth accumulation; young households with student loan debt are between seven and nine times less wealthy than their counterparts without student loan debt (Fry, 2020).

Financial Products

Due in large part to technology, Americans have access to a wide variety of financial services and products from a young age. These products can be used correctly to great gain, or misused at grave financial expense. Over half of Generation Z (those born between 1996 and 2010) use digital wallets and over three-quarters use other digital payment apps (Toplin, 2019). The continued expansion of the financial technology (fintech) industry means there will be an increasing number of financial products that are readily available (Stanford, 2020). This heightens the need for up-to-date and continuing financial literacy education; the "bar" for financial literacy is constantly moving as an increasing number of financial products, each requiring more financial knowledge, become more easily accessible to the masses.

Problem History and Persistence

The problem of low financial literacy in America is seemingly as old as the republic itself; John Adams, in a letter to Thomas Jefferson, once said "All the perplexities, confusion and distress in America arise, not from defects in their Constitution or Confederation, not from want of honor or virtue, so much as from the downright ignorance of the nature of coin, credit and circulation" (FEC, 2020). This lack of financial knowledge has not changed in the last 233 years. This lack of financial literacy is largely caused by a lack of strong financial literacy education programs. Personal finance (a close proxy for financial literacy) became a serious educational topic in the 20th century. The Smith-Lever Act of 1914 created university programs that conducted research and taught the public "useful and practical information" including personal finance. Financial literacy education grew throughout the 20th century, often under different names like "personal/family/household finances" or "consumer/home economics" (Rose, 2020). While these programs improved over time, they failed to address financial illiteracy due to their limited scope and the lack of strong research underlying them. Financial illiteracy persists to this day for the same reasons; today only 22 states require a personal finance class in their K-12 programs, and many of these courses are out of date or fail to teach the necessary skills to create financially literate students (Rose, 2020). Moreover, even if these programs were suddenly improved tomorrow, the 270 million Americans outside of the K-12 education system would remain financially illiterate. These programs remain inadequate to this day due to insufficient research and funding for K-12 education in general, and financial literacy programs in particular.

Scope

While this is a global problem that affects people the world over, the global perspective is beyond the scope of this analysis. Even from a domestic perspective, people from all backgrounds and age groups struggle with financial literacy. Due to the particular challenges, outlined above, facing young Americans in today's financial landscape, this analysis will focus primarily on young Americans between the ages of 18 and 25. This range reflects the age of legal adulthood on the low end, and combines a number of government, non-governmental organizations, and the start of Generation Z to identify the upper end of the bracket (Dimock, 2018).

Demographics & Equity

Data shows that young Americans are struggling more than older generations with money management and financial literacy and that these discrepancies may hinder their opportunity and ability to attain economic mobility and financial stability. The Federal Reserve's Survey of Consumer Finances also found significant and substantial differences in financial literacy based on education and income, with more educated and higher income groups being more financially literate. Studies also suggest that there are marked differences in financial literacy based on racial and ethnic differences, with white respondents being more financially literate than historically marginalized groups like Black and Latinx populations. These findings, coupled with the importance of financial literacy for financial mobility and wealth accumulation, indicate that an unequal distribution of financial literacy may contribute to income and wealth inequality in the U.S. Already wealthy, educated, and privileged individuals are more likely to be financially literate making them more likely to in turn accumulate wealth. Improving financial literacy among historically disadvantaged groups could help break this cycle and support the accumulation of wealth in these communities and subsequently closing demographic gaps.

Consequences

This section will discuss the main consequences of the financial literacy problem in America. Where available, it will utilize age specific data to focus on the target population as defined in above.

As outlined above, financial illiteracy can have negative impacts on both individuals and entire economies. Low financial literacy rates lead to uneducated consumers who do not have a solid grasp of the economic landscape around them, and who do not understand the impacts of the financial decisions they make. These uneducated consumers are likely to make poor financial decisions leading them to have more debt and less savings (GFLEC, 2019). These poor decisions are costly and lead to negative economic outcomes for those who are financially illiterate. National financial literacy studies found the average American lost over $1,200 in 2019 due to a lack of financial knowledge leading to poor spending and saving decisions (FEC, 2020). Financial illiteracy also leads to poor long term financial planning which is a strong predictor of wealth; those who financially plan arrive at retirement with two to three times the amount of wealth as

those who do not plan (Lusardi & Mitchell, 2011). Having sufficient wealth to retire is a critical measure of long term financial outcomes.

Low financial literacy rates and uneducated consumers are not only bad for individuals, but for entire societies. A 2011 Library of Congress report for the Securities and Exchange Commission found "… Investors do not understand the most elementary financial concepts, such as compound interest and inflation …, diversification or the differences between stocks and bonds, and are not fully aware of investment costs and their impact on investment returns" and that these same investors are also overconfident about their level of knowledge (Golf, 2016). This lack of knowledge among consumers and investors makes them vulnerable to predatory practices and reduces market oversight over financial products. According to the World Bank, "Consumer protection and financial literacy can contribute to improved efficiency, transparency, competition, and access to retail financial markets by reducing information asymmetries and power imbalances among providers and users of financial services" (World Bank, 2014). This lack of oversight can allow suboptimal financial products and services to thrive in the market, negatively impacting the economy, and society, as a whole.

The economic and financial effects of financial illiteracy also contribute to negative mental health outcomes as many of the results of financial illiteracy are major causes of mental health strain. According to a national Financial Industry Regulatory Authority study, more than 44% of Americans are stressed by discussing their financial situations, while more than 53% feel anxious even thinking about them; these percentages increase to 63% and 55% for adults aged 18-34 (Lin et. al., 2019). Researchers have found the likelihood of having a mental health problem is three times higher among people who have debt (Richardson et. al., 2013).

Costs

There are substantial losses in economic growth, output, and efficiency due to financial illiteracy. Research indicates low levels of financial literacy costs American investors around $100 billion annually in avoidable fees and costs (French, 2008). Other studies indicate financially illiterate individuals are less likely to invest in the stock market, leading to welfare losses totaling 4% of wealth (Cocco et. al., 2005). Americans also lose $50-$100 billion annually in suboptimal refinancing decisions (Campbell, 2006). Financially illiterate consumers are also more susceptible to fraud which cost the average victim over $500 in 2011 (SEC, 2012). National survey studies have found that Americans self-reported over $300 billion in costs due to a lack of financial literacy in 2019; this could be due to poor decisions, missed opportunities, or other behaviors that respondents felt financial literacy could have helped them avoid (FEC, 2020). There are also steep financial costs associated with the negative mental health outcomes caused by financial illiteracy. While there are currently no direct assessments of these costs, depression alone costs the U.S. over $200 billion annually, meaning if even a fraction of this is due to the mental health strain associated with financial illiteracy, that cost could be in the billions of dollars annually. The exact total costs of financial illiteracy to the US economy remain difficult to calculate, but the above figures

indicate that the figure is at least $50 billion and is likely several hundred billion dollars. This translates to an average annual cost of anywhere from $150-$1,500 for every American.

Existing Interventions

The literature on financial literacy, financial literacy rates, and financial literacy programs is rapidly expanding, though it faces several key challenges. This section will focus on broad themes and trends in the literature concerning financial literacy interventions, starting with an important foundational discussion of outcome measures. It will include a number of large-scale meta-analyses which highlight the ambiguity and need for further, more rigorous and targeted, studies of financial literacy interventions. Finally, this section will distill the literature into a number of key takeaways for SFDS to note going forward.

Outcome Measures

An understanding of desired outcomes is essential in order to discuss the various policy interventions that have been used to improve financial literacy. Due to the fact that there are no universal standards for financial literacy, and because the literature on the subject is fairly young, there are various ways to measure financial literacy and financial literacy programs. In a meta-analysis of 72 studies of financial literacy levels, Huston found 72% of studies failed to include a definition of financial literacy, while only 13% provided a formal, operationalized, definition of the concept (Huston, 2010). While there is a lack of clear standards, most interventions that seek to improve financial literacy focus on one or both of two key outcomes: financial knowledge, and financial behaviors. Huston defines this as a two-dimensional conception of financial literacy including (1) understanding, or personal finance knowledge, and (2) use, or personal finance application (Huston, 2010). These two dimensions are usually operationalized as measures of knowledge, like answering an additional test question correctly, and changes in certain behaviors associated with financial outcomes, like increased saving.

There are substantial obstacles to using either of these measures. Due to the unstandardized nature of financial literacy, it is difficult to design a test to measure it accurately. There is also a growing trove of literature which suggests that written or standardized tests are not accurate measures of students' knowledge, and that this is particularly true among minority and historically disadvantaged students (Popham, 1999). Moreover, there are important questions regarding the impact that financial knowledge has on financial behaviors. Additionally, measuring effects on financial behaviors also poses difficulties as accurately attributing changes to the intervention can be challenging. It is also difficult to assess interventions' impacts on financial behaviors because many studies focus on educating children and young adults who may not have the opportunity to exercise their new financial literacy, say by purchasing a home rather than renting, for several years (CFPB, 2019). These differences in definitions across studies and interventions also add complications to effectively comparing the impacts of different interventions.

Possible Interventions

Financial Knowledge:

The pillar of financial literacy programs are traditional education programs. These programs typically entail an in-person or online, classroom setting with classwork and some out of class assignments. They can be a mix of lecture-based learning and workshop settings. These programs are typical of primary education or workplace financial literacy programs. The following meta-analyses focused primarily on these more traditional education programs, though they did include other education efforts like pamphlets and smaller "nudges." While these programs share some basic characteristics, there is a great deal of variance in the specifics, including the duration or intensity of the programs, the exact materials presented in class, and whether or not the targeted outcomes are financial knowledge or financial behaviors.

In a meta-analysis of 201 studies on financial literacy programs, Fernandes et al. found minimal evidence that financial education affects financial behaviors; their analysis found financial literacy programs explain only 0.1% of the variance in behaviors studied (Fernandez et al., 2014). These effects were even weaker for those with low-incomes. Their study also found that, like other education, financial education decays over time. Notably, the authors found that studies with stronger experimental designs using randomized control experiments showed smaller and less significant effects than other studies. In addition to a meta-analysis, the authors conducted three empirical studies and found that the partial effects of financial literacy are even smaller when using instruments to control for omitted variables (Fernandez et al., 2014). This particular meta-analysis is among the most robust reviews of financial literacy studies as they segmented their analysis on the basis of each study's rigor. Furthermore, the independent empirical studies they conducted were extremely rigorous as they were careful to apply the lessons learned from their review of other studies, as evidenced by their use of instruments to control for omitted variables.

Hastings et al. conducted another review of financial literacy program studies and reached similar conclusions. Their analysis found a strong correlation between financial literacy and a number of financial behaviors and outcomes, but again failed to find clear causal evidence to support these correlational studies. Troublingly, the authors also found little empirical evidence to support the notion that financial education programs actually increase financial literacy. After analyzing dozens of correlational studies, natural experiments, and other studies, the authors concluded that there is "at best mixed evidence that financial education improves financial outcomes." They also note that there is even less information regarding the cost-effectiveness of these educational programs, another primary concern when considering potential interventions (Hastings et al., 2013). It is important to note that the overwhelming majority of studies in this review concerned adult financial literacy programs, with little focus on school-based financial education; this is a shortcoming that may hinder this study's applicability considering much of the work in this field, and some of the focus in this particular analysis, concern school-based programs and the children/young adults in them.

A 2017 review of 126 studies by Kaiser and Menkhoff concluded that financial education affects both financial literacy and behavior, but that there is great variation in the effects of these programs based on participants. Their analysis excluded all studies without causal interpretation and further accounted for delivery method and target group characteristics. This makes their review perhaps the most rigorous review of financial literacy studies to date as they not only segmented the studies the reviewed by rigor, but completely excluded the correlational studies that many others in this field focus on. While this methodology does improve the robustness of the study, it also limits it considering the vast number of studies in this field that lack causal interpretation but may have other value. Kaiser and Menkhoff drew six principal findings from their study. (1) Financial education improves financial literacy which is positively correlated with financial behaviors. (2) Financial education has measurable effects on financial behaviors. (3) The effects of financial education depend on the target group, with lower-income individuals and nations exhibiting smaller effect sizes. (4) Some financial behaviors, like saving, are easier to effect than others, like borrowing. (5) Programs with greater intensity have greater outcomes. (6) Characteristics of the financial education matter: mandatory programs and those that are offered at "teachable moments" are more likely to affect outcomes (Kasier & Menkhoff, 2017).

A 2019 review of youth financial education by the Consumer Financial Protection Bureau examined a number of rigorous studies focused on the effects of school-based financial education programs. The report found state-mandated financial education in high school in the United States improves outcomes including credit scores, default rates, and debt. The review also examined studies of large-scale programs in Brazil, Peru, Germany, Spain, the Netherlands, and Ghana and found that six of the seven programs improved financial knowledge, though only two of them changed behaviors (CFPB, 2019). This report was structured as a review of reviews, making its rigor somewhat dependent on the meta-analyses it referenced; the report used mostly rigorous reviews that controlled for experiment type and methodology, and issued detailed disclaimers about the nature of the literature it used.

Financial Access:

There is a growing school of thought among financial literacy scholars that effective interventions targeted at improving financial literacy and financial outcomes should not only utilize financial knowledge, but also financial access. These interventions typically include a knowledge component, similar to those discussed above, along with an access component like assistance establishing a savings or checking account (Lusardi, 2019). In a study of matched savings account programs, Birkenmeier et al. found access to Individual Development Accounts had positive long-term effects on credit scores and history; this study utilized a fairly small convenience sample which makes it among the least rigorous of the studies in this review (Birkenmaier et al., 2014). A Consumer Finance and Protection Bureau report found significant positive effects on a range of financial knowledge and behavior measures as a result of financial coaching which included increased access and hands-on guidance with financial products and services (Urban Institute,

2015). Birkenmaier, Maynard, and Kim are set to publish a comprehensive review of studies including a financial access component in the coming months. Though the research on these alternative interventions is somewhat limited, it does present encouraging findings and there is a bright future to this literature ahead.

Limitations of the Literature

There is room for significant progress in the literature on financial literacy. The current literature fails to utilize standardized definitions of financial literacy and outcome measures, making comparisons difficult. These studies also lack sufficient detail concerning the characteristics of the studies, particularly regarding the details of financial education programs. There is also a lack of large-scale random control trials designed to establish evidence of causal relationships, with correlational studies comprising a great deal of the current literature. Finally, there is almost no literature regarding the costs and cost effectiveness of any of the many interventions described above. This prevents meaningful discussion and consideration of alternatives for policymakers.

Key Takeaways from the literature

There are a number of key takeaways that can be distilled from the analysis to this point (see Appendix One for a graphic representation of these takeaways). Broadly speaking, financial illiteracy is a sweeping problem affecting young Americans and causing significant harm to their financial and general wellbeing. This problem is likely to only worsen as the financial environment becomes more complex and existing interventions continue to fall short. There are also several important themes or lessons for designing future interventions. The first principle is that a successful intervention needs to be large and scalable in order to be practical. The second principle is that there are different program effects for different groups, with most studies finding smaller effects for lower-income individuals; this is a key concern regarding equity and the allocation of resources for these programs. The third principle suggests that intensity and consistency are key in successful interventions; the more long-term, consistent, and intense a program is, likely the larger its effects. Timing is also key for successful interventions; targeting interventions at certain "teachable moments" when individuals are likely to face financial decisions makes them more effective. Finally, there is a growing body of literature that suggests a multi-faceted approach targeting both financial knowledge and access is especially effective.

Policy Alternatives

Alternative One: Best Practices Guide

This alternative entails SF Data Solutions creating a best-practices guide for crafting financial literacy education programs. This guide would be designed for distribution to schools, employers, universities, community centers, and financial literacy educators and interest groups who have traditionally organized financial literacy programs. It would seek to standardize financial literacy education using empirically determined best practices among these various stakeholders.

This guide would identify several key principles for effective financial literacy education programs based on the prevailing literature in the field. Rather than creating a rigid and detailed financial literacy program itself, this guide would emphasize principles while offering enough flexibility and guidance for local implementers to adapt the program to their specific circumstances. These principles would include: (1) That a successful intervention needs to be large and scalable in order to be practical, though this depends on the scope of each program (i.e. "large" for a rural high school may be a class of 20, and for an urban employer it may be a cohort of 1,000 employees). (2) That there are different program effects for different groups, with most studies finding smaller effects for lower-income individuals; this is a key concern regarding equity and the allocation of resources for these programs. It also indicates that an individualized approach, when possible, is key. (3) That intensity, timing, and consistency are key in successful interventions; the more long-term, consistent, and intense a program is, likely the larger its effects. Timing is also key for successful interventions; targeting interventions at certain "teachable moments" when individuals are likely to face financial decisions makes them more effective. (4) A multi-faceted approach targeting both financial knowledge and access is especially effective.

The guide itself would be multi-faceted, with numerous print materials, some videos, and if possible, consultation opportunities with members of the SF Data Solutions team and its partners during the design process for the program. Ideally, this guide would be designed in conjunction with members of leading organizations in the field, like the National Financial Educators Council and George Washington University's Global Financial Literacy Excellence Center. These partners could then leverage their existing networks and resources to help promulgate the guide and offer assistance to those updating or establishing financial literacy programs.

This guide would be financed largely through grants and donations, which could also be offset by the existing revenue streams that potential partners already have.

Alternative Two: Create and Deliver a Financial Literacy Program

In this alternative, SF Data Solutions will create and administer a comprehensive financial literacy program. This program would emphasize the same four principles outlined above. It would also incorporate a multi-faceted approach, with an emphasis on both financial knowledge and financial

access. The knowledge component would consist of a set of course modules focused on educating participants on both the need for financial literacy as well as key concepts like savings, taxes and subsidies, interest, investing, budgeting, and credit/debt. The access component would involve helping participants to establish bank accounts and open credit/debit cards and utilize other financial instruments. Ideally, this course would have several iterations geared towards different communities in an effort to be most effective. Such target audiences could be segmented into upper classmen in high school, upper classmen in college, and older, more established adults.

In an effort to reach as many people as possible, the course would be primarily online, with in person instruction offered to those in the local DC Metropolitan Area where SF Data Solutions is located. Consultation opportunities with members of the SF Data Solutions team would also be an option on a limited basis of members' availability.

This alternative would need to be funded completely by SF Data Solutions through the solicitation of grants and donations. In some limited cases, the program could be offered for a fee (such as to companies for their employees) which could be used to offset costs for other groups. However, the default would be for the program to be free of cost so as to ensure equity and help the underprivileged communities that need it most.

Alternative Three: Advocate for Additional Research and Policy Prioritization

In this alternative, SF Data Solutions would lobby state and federal government officials to prioritize financial literacy programs and commission additional research on financial literacy and financial literacy programs. This alternative recognizes that financial literacy is currently not a policy priority at the state and federal levels, and would seek to change that through advocacy campaigns. In particular, this alternative seeks additional funding for research in order to bolster the literature on financial literacy and create a foundation for a standardized field rooted in empirical data.

Members of SF Data Solutions would leverage existing connections within the Federal Reserve, Virginia Congressional Delegation, and Virginia House of Delegates to highlight the issue of financial literacy to key stakeholders at both the state and federal level. At the state level, this effort to bring financial literacy to the forefront should include a focus on increased funding for the improvement of existing financial literacy programs in the state (which are currently required for all high school graduates). At the federal level, it will involve earmarks for financial literacy programs and research, as well as simply getting the issue of financial literacy in the spotlight and on the national agenda.

Most of the research funding would come at the federal level, from federal research grants through various government agencies like the Federal Reserve, the National Science Foundation, and other governmental entities (like the Departments of Education and Health & Human Services, or the Consumer Financial Protection Bureau). This research funding could come in the form of grants

to non-governmental entities like universities and the National Bureau of Economic Research, or through directly run government research studies.

This alternative would be funded entirely by the SF Data Solutions' revenues from other projects along with private support and philanthropy.

Evaluative Criteria

Goals

SF Data Solutions is committed to improving financial literacy among young Americans in an effort to improve their life outcomes and quality of life. In order to make the greatest change for the greatest number, SF Data Solutions is particularly concerned with cost, effectiveness, and feasibility as these will be the determining factors on whether or not effective financial literacy programs are promulgated throughout the nation. These three criteria will be equally weighted when assessing alternatives.

Cost

The primary concern for SF Data Solutions in assessing alternatives is financial cost. SF Data Solutions is a young organization with limited resources, and as such alternative's costs can be prohibitive. There are multiple potential sources of costs for the various alternatives. Labor will likely be the primary source of costs for most interventions, whether it is in the form of SF Data Solutions internal labor costs (or opportunity costs), the costs of hiring educators and other personnel, lobbying costs, or others. Another potential source of costs will be in the creation of deliverable products for some alternatives, such as digital and physical materials for a best practices guide or internally designed program. This analysis will use cost data from existing financial literacy programs and other efforts (like lobbying or material costs where applicable) to extrapolate potential the financial costs of each alternative.

Alternative One: Best Practices Guide

Cost Score: Moderate-2

Alternative One received a cost score of 2, meaning it is moderately expensive. The primary cost associated with this alternative is labor hours. The SF Data Solutions team currently has the expertise and capability to divert current labor hours to this alternative, so costs associated with this alternative are primarily opportunity costs, though they could translate to real costs should the opportunity to hire an additional staffer arise. After consulting with the client, it appears this alternative could be staffed using half the time of one full-time employee, primarily utilizing existing research and materials and working largely as a coordinator and liaison with partner organizations. Based on employment statistics outlined in the attached appendix, complete with adjustments for SF Data Solutions' local labor market (Northern Virginia), the anticipated labor costs for this alternative are approximately $32,331.[1] In addition to direct labor costs, additional

[1] Due to unique nature of the position and lack of clear data, an aggregate estimate was created and adjusted for regional differences.

contracted labor for graphic and web design work will total approximately $17,000 annually (or ¼ of a local full-time salary) (Bureau of Labor Statistics). Thus, total annual costs are approximately $49,000.

Alternative Two: Comprehensive Financial Literacy Program
Cost Score: High-1
Alternative Two scores a 1 for cost, which is the lowest possible score meaning the cost of the alternative is high. Assuming SF Data Solutions runs this program as leanly as possible, it would require one full-time employee to serve as the program director and educator, and would require at least part-time support from existing SF Data Solutions team members. Utilizing the same estimate for a full-time financial literacy educator adjusted for the Northern Virginia area, this would entail an annual cost of $64,663 in direct labor costs.[2] The part-time support for program design and administration from SF Data Solutions employees can be estimated at half of one full-time employee, adding an additional $32,331 in costs.[3] The costs for designing and publishing course materials, graphic and web-design, and other affiliated costs are estimated to be approximately $24,000 (1/3 of full-time web and graphic designer).[4] This brings the total annual cost estimate to $112,994.

Alternative Three: Research and Policy Advocacy
Cost Score: High- 1
This alternative requires government relations and advocacy professionals. This could take the form of hiring an internal government relations manager, or contracting the work out to a lobbying or policy consulting group. Either of these options would require at least half of the full-time efforts of a current SF Data Solutions partner, with the opportunity cost scaled to that of a government relations expert. Assuming an average regional-adjusted salary of approximately $80,000 for a government relations position, this would result in $120,000 in annual labor costs if everything was done in house (Ziprecruiter). If the work was contracted to an independent company, these costs could range anywhere from $30,000-$100,000+. Taking the median of $65,000, this leads to a total cost of $105,000.

Salary Estimates: https://www.financialeducatorscouncil.org/financial-educator-salary/
Indeed: $57,124
Payscale: $44,687
Comparably: $58,252
Glassdoor: $48,529
Average of above: $52,148

https://patch.com/virginia/fairfaxcity/nova-school-districts-pay-teachers-most-least-2020
If we use teachers as a proxy, average Northern Virginia (region around SFDS) teacher salaries were approximately 76k/year. Virginia has worse relative pay for teachers in the country (28% lower than other full-time employees), but those in Northern Virginia still make more than 24% more than national average, so if we apply similar premium to financial literacy educator, we can assume a salary of approximately $64,663.
[2] *ibid*
[3] Based on opportunity cost of work as a financial literacy educator using same calculations above
[4]Based on conversations with SF Data Solutions and BLS data

Effectiveness

Effectiveness is the most difficult criterion to quantify in the financial literacy space as there are not clearly agreed upon metrics. There are two dimensions to the effectiveness criterion: breadth and depth; both will be equally weighted in determining the effectiveness score. The first, breadth, is a measure of the scope of an alternative. This assesses how many people the alternative will affect, both in its initial run and its potential to scale up. When applicable, such as in alternatives one and two, this metric will consist of the raw number of individuals reached by the program. For other alternatives, like number three, the analysis may require a more qualitative assessment of the potential reach of the alternative. The second dimensions, depth, focuses more on the traditional conceptions of efficacy and will attempt to forecast the eventual impacts on efficacy for the target population of American youth. Financial literacy programs are generally assessed by either their effects on participants' knowledge, or their effects on participants' behaviors; in some limited cases, programs have utilized both. This analysis will focus on both knowledge and behaviors/outcomes in an effort to make sure that people not only learn, but act on their learning. Both subcomponents will be equally weighted to find the composite effectiveness score.

Alternative One: Best Practices Guide

Effectiveness: Moderate-to-High-2.25

Breadth: High-3

There are thousands of financial literacy programs around the nation that could be impacted by this guide. Currently, 27 states require a financial literacy education component to graduate from high school (Rosenbaum, 2020). Employers and community organizations also hold thousands of financial literacy programs annually. The NFEC alone has helped build over 2,500 programs, has educated over 5,000 instructors, and has over 8,000 clients. This alternative has the potential to build on and improve these existing programs involving hundreds of thousands of individuals (NFEC).

Depth: Moderate-to-low-1.5

Poorly constructed financial literacy programs have little to no impact on financial knowledge and behaviors. While it is impossible to assess the proportion of existing programs with such poor outcomes, meta-analyses suggest it is a non-negligible portion of programs. However, well-constructed programs have been shown to increase knowledge, change behaviors, and have numerous positive effects (outlined in literature review). Thus, we can assume that the implementation of this best practices guide would

Alternative Two: Comprehensive Financial Literacy Program

Effectiveness: Moderate-2

Breadth: Low-1

With such a small program infrastructure, this alternative's reach is severely limited. The analysis assumes the full-time educator spends one third each work day actively teaching (with the other time spent on administrative work), and that each hour of teaching impacts 20 students.[5] However, each student will require approximately 20 hours of instruction to complete the course (two hours per week for ten weeks). Thus, the program could potentially reach approximately 693 students per year.[6]

Depth: High-3
With complete control over the curriculum, teacher, and programming, this alternative is likely to be highly effective. It is also possible to target the most at-need communities which will increase the total improvements in knowledge and behavior. Though it is difficult to quantify this, research indicates that a carefully crafted program could bring significant improvements to those enrolled.[7]

Alternative Three: Research and Policy Advocacy
Effectiveness: Moderate-to-high-2.5

Breadth: High-3
This alternative has the potential to reach a massive number of people across the state and nation. Currently, Virginia is one of six states that mandates a personal finance course as a high school graduation requirement, and the state is also home to some of the nation's premier public universities (Rosenbaum, 2020). This makes the state a great laboratory for financial literacy research, and for the implementation of research findings into existing programs. Nationally, the federal government disburses more than $40 billion per year in basic research support, meaning there is a great deal of potential research funding available for the issue (CRS).

Depth: Moderate-2
Evidence suggests that most financial literacy programs lack a grounding in empirical research, and that this results in them having varying degrees of effectiveness. Increasing research and prioritizing financial literacy as a policy issue will lead to the implementation of more research-based programs with far better outcomes. That said, there is likely to be significant lag and difficulty in implementing research findings into existing programs, which will reduce the effectiveness score.

Feasibility
This criterion assesses the practicality of an alternative. This criterion also has two dimensions: political and administrative. Political feasibility will involve an assessment of the environment surrounding the issue, focusing particularly on stakeholders and any support or opposition that

[5] This is higher than almost all recommended student-teacher ratios in an effort to maximize the efficiency of the program. This figure is also based on existing programs in schools and other community centers along with conversations with SF Data Solutions
[6] 2080 hours per year/3=693.33 teaching hours. Multiply by 20 for 20 students per hour teaching, then divide by 20 for the 20 hours spent per student to complete the program. Estimates for size and duration of the program are drawn from numerous sources consulted through the literature review process.
[7] See literature review in the Background Section

may arise around an alternative. Administrative feasibility will assess the logistical requirements for each alternative and compare them to SF Data Solutions' available resources. These logistical requirements include man hours, expertise, connections/notoriety, time, and finances. For the feasibility criterion, the administrative feasibility component will be given an 80% weight compared to 20% for political feasibility; this is due to the potentially prohibitive nature of administrative infeasibility

Alternative One: Best Practices Guide
Feasibility: Moderate-to-High-2.2

Political: High-3
This alternative is highly politically feasible as it requires no government intervention. There are also essentially zero anti-financial literacy groups, only groups who recognize and oppose the failures of such programs.

Administrative: Moderate-2
This alternative requires a substantial investment of existing labor, with additional potential financial strains that will require external funding through philanthropy or partner support. The creation of the guide itself is well within SF Data Solutions' capabilities, and it is likely that they will also be able to partner with the NFEC as this organization has a long history of community partnerships. That said, it will be difficult to disseminate the guide in such a way as to ensure that its principles are followed and programs are changed and created in accordance with the guide's prescriptions.

Alternative Two: Comprehensive Financial Literacy Program
Feasibility: Low-to-Moderate 1.4

Political: High-3
This alternative is highly politically feasible as it requires no government intervention. There are also essentially zero anti-financial literacy groups, only groups who recognize and oppose the failures of such programs.

Administrative: Low-1
This alternative would place massive financial strain on SF Data Solutions and require a significant amount of new funding and thus the administrative burden associated with attracting such funding. Logistically, this would also be a tremendous endeavor require the creation of new infrastructure and constant support for the creation and administration of the program. Additionally, SF Data Solutions is not in itself an educational body, meaning this alternative would be outside the scope of the client's core competencies requiring more training and placing a greater strain on the organization.

Alternative Three: Research and Policy Advocacy
Feasibility: 1.4

Political: Low-1
This alternative has low political feasibility due to the large alliance of spending hawks and anti-big government groups, particularly among the Republican Party. Even among Democrats, this issue is unlikely to receive widespread support as it is a rather peripheral issue that is unlikely to garner a great deal of support or donations for members of government. Moreover, most members are currently focused on what are thought of as more pressing political concerns like the pandemic and the border crisis.

Administrative: Low-to-Moderate-1.5
SF Data Solutions currently has a fair number of connections at the state and federal government levels, and its team includes members who have limited lobbying and advocacy experience. That said, the type of sustained lobbying efforts necessary to effect actual change would require a significant retooling. This alternative also has a fair amount of uncertainty and potential to fail, as compared to other alternatives; there is a real possibility that this effort takes years with little to no impact, and if and when that impact is made, it would require a second administrative effort of turning policy changes into actual program changes and effects. Moreover, there would be tremendous financial strains for the duration of the effort.

Outcomes Matrix

	Criteria					
	Cost	Effectiveness		Feasibility		Composite
	33.3%	33.3%		33.3%		100%
Alternatives		Breadth (50%)	Depth (50%)	Political (20%)	Administrative (80%)	
Best Practices	**2**	**3**	**1.5**	**3**	**2**	**6.45**
Program	1	1	3	3	1	4.4
Advocacy	1	3	2	1	1.5	4.9

Policy Recommendation:

This analysis recommends Alternative One, the Best Practices Guide. This Best Practices Guide will be designed and distributed in tandem with industry partners like the National Financial Educators Council. This alternative offers the potential to bring standardization to the financial literacy field. Moreover, it seeks to improve, rather than completely reinvent the thousands of existing programs and materials in use around the country. These improvements should improve outcomes and efficiency in the financial literacy landscape while improving credibility and standardization in the over $650 million financial education industry (CFPB).

This alternative provides the best balance of high criteria scores while minimizing the low scores. While the Best Practices Guide may not score as highly on the effectiveness criterion, and does not have the highest score on every criterion, it does not receive a score of 1 on any of the criteria. This alternative also represents the smallest financial investment and involves coordination with a successful partner, making it less risky compared to other, more expensive and independent alternatives. Thus, while it may not have the most profound effectiveness, it is the most practical alternative and the one most likely to have positive impacts on financial literacy for the most individuals.

Implementation

Next Steps

The first step of the implementation process for this alternative is to create an outline and proposal for submission to potential partner organizations. This outline will be based primarily on the contents of this analysis and should include a brief memo detailing the proposed best practices guide and the principles it emphasizes. In the process of creating the proposal, SF Data Solutions should begin to create the guide itself, working to fill out the outline provided by this analysis, with a particular focus on the missing expertise and resources SF Data Solutions needs in order to successfully carry out the alternative. Once a proposal is ready, SF Data Solutions should reach out to a number of potential partner organizations, starting with the National Financial Educators Council (due to their large scale and notoriety). If the partnership with the NFEC is successful, SF Data Solutions can consult with them about adding additional partners; if it is not, then SF Data Solutions should continue seeking partnerships from organizations like George Washington University's Global Financial Literacy Excellence Center. Once one or more partnerships are established, SF Data Solutions should work with the partner organization on refining the best practices guide and creating the multi-dimensional aspects of the guide, including web and mobile based materials in addition to more traditional print and consultation services. Once a final product is created, the implementation process begins in earnest. At this point, SF Data Solutions and its partner(s) will begin to promulgate the guide and work to ensure that it is utilized as a resource so that new programs are created and existed programs are updated with its guidelines in mind. In

addition, this stage will focus on building community and standardization, leveraging the partner organization's resources and expertise to incentivize implementation.

Stakeholders

The primary stakeholders in this implementation plan are the partner organization(s). They are likely more experienced and resource rich than SF Data Solutions, and are apt to take the leading role in the implementation of the alternative. Navigating this relationship and power-dynamic will be difficult, but key to the success of the alternative. SF Data Solutions must make their mission clear from the start to ensure that the partnership does not alter the guide and plan so much that the original goals are lost. Other key stakeholders are the organizations and individuals who run financial literacy programs, or are starting a new program, and who serve as the target audience for this guide. These stakeholders will likely be equal parts skeptical and supportive. Many program leaders will be eager to tap into the resources and expertise offered by the guide and the partnership behind it, and they will be excited about the prospect of improving their program. However, many of these individuals are also likely to be leaders and authority figures, and some will have a great deal of experience in the financial literacy field; this may make them resistant to change, particularly by a large outside organization. In order to effectively roll out the guide, SF Data Solutions will need to act as a mediator and strive to build trust, maintain flexibility, and utilize existing expertise rather than falling into the trap of playing savior to local programs. The final group of stakeholders are the individuals enrolled in the various programs. These individuals and communities are likely excited by the prospect of evidence-based improvements to the programs in which they participate.

Challenges

In addition to the potential uptake and cooperation challenges mentioned above, the single biggest potential challenge to this implementation plan is the failure of the partnership. SF Data Solutions could fail to secure a prominent partner which would make the widespread promulgation of the guide extremely difficult. However, given the number of large financial literacy education programs and their extensive history of community partnerships, it seems unlikely that SF Data Solutions will be unable to secure a single partner. The next challenge would be that the partnership and project is not prioritized by the partner organization. This is the more likely challenge, and the relationship and goals defined by SF Data Solutions will be key in mitigating this risk; SF Data Solutions should have a thorough internal plan and mission, and should be prepared to dedicate the necessary time and resources to not only the partnership, but the relationship behind the partnership.

Evaluation

In order to assess the implementation process, SF Data Solutions should maintain data on how many programs the best practices team interacts with, as well as the number and proportion of programs that actually adopt the best practices. Additionally, the team should conduct periodic

follow-ups to ensure that the programs remain up-to-date with the continually updated guide and that adoption rates do not decline over time.

This implementation strategy is not comprehensive or foolproof, and will likely require updating throughout the implementation process; however, if SF Data Solutions focuses on the above steps, it will greatly increase the likelihood of the endeavor's success. The stakeholders and potential challenges will be particularly important as the handling of these relationships and difficulties will ultimately determine the mission's success.

Conclusion

Financial illiteracy is a problem that threatens not only the financial wellbeing of Americans, but their mental, emotional, and physical wellbeing as well. If unaddressed, this problem is likely to only grow as the consumer and financial environments become increasingly complex with growing accessibility to sophisticated financial products and opportunities. Currently there are thousands of programs working to address this issue, but they lack standardization and a basis in empirically researched design. As such, these programs often have little to no long-term impact. SF Data Solutions has the potential to partner with experts in the field to bring this standardization and rigorous design to financial literacy programs around the country through a best practices guide. These improvements could help thousands of people across the country maximize the benefits from their programs, leading to improved economic and health outcomes for individuals and society at large.

Appendix One

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