

The Role of Artificial Intelligence in Personal Finance

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ABSTRACT

This article provides information on how artificial intelligence can regulate personal income and its role in personal finance. Future retirement planning, current societal challenges related to healthcare systems, and environmental changes require households to pay more attention to their personal finances. This, in turn, calls for a radical change and expansion of the above-mentioned areas. To do this, personal finance will also need to use the increasingly powerful tools of artificial intelligence. The literature review underlying this article: first, transformation shows that credit is a flow of personal finance that is more than necessary, not only in the insurance or payments sector, but also in investment-related situations. Second, through the use of artificial intelligence, simple digitization concepts are pushing the productivity levers that are driving the transformation of the industry more than ever before. Over the next two years, investment products use cases/businesses should focus more on digitalization of their distribution chain.

Keywords:

Personal finance, brokerage, artificial intelligence, technological change, fintech, financial technology.

Introduction

As a result of the evolution of technological changes, there is a growing interest in artificial intelligence and its application in the modern economy. However, the relevant technologies are far from fully developed. At the same time, there is a growing demand for personal finance (loans, insurance, payments and investments) and related industries such as healthcare, retirement planning, etc. But development really requires a high level of financing at the individual level in a capitalist society. To support this change, the personal finance system needs to be more efficient and make effective use of available technologies to support households and individuals. This in turn raises the question of whether artificial intelligence can solve these problems. To find a solution to this problem, this article first takes a quick overview of the personal finance department. That is,

technology must be used to power the industry and its transformation.

Research Methodology

Artificial intelligence is very important in financial analysis and decision-making processes, and serves as a basis for organizing and working with financial models, online trading and risk management processes [1]. We know that with the help of artificial intelligence, we can analyze investment portfolios and develop optimal investment strategies, which in turn points to a huge role for this field in personal finance and investment. The role of artificial intelligence in the field of finance is currently expanding, and in the near future this field will develop in a mature form, creating the basis for performing almost all functions quickly, easily and accurately.

Looking at the book Fintech Innovations from Robo-Advisors to Long-Term Investments,

this book focuses on fintech innovations, particularly robo-advisors and AI-based investment approaches. Here's a quick look at how fintech fits into personal finance management and what opportunities it creates: robo-advisors are a prime example of how SI is being used in personal finance management. This book shows how SI technologies bring convenience and efficiency to personal financial advisory services. For example, robo-advisors help users achieve their financial goals through automated investment recommendations[2].

Thomas Shedlacek's book, *Artificial Intelligence and Big Data in Financial Services*, shows the benefits and effectiveness of AI in wealth management and financial planning processes. For example, with the help of big data, robo-advisors analyze the financial behavior of users and provide individual recommendations[3].

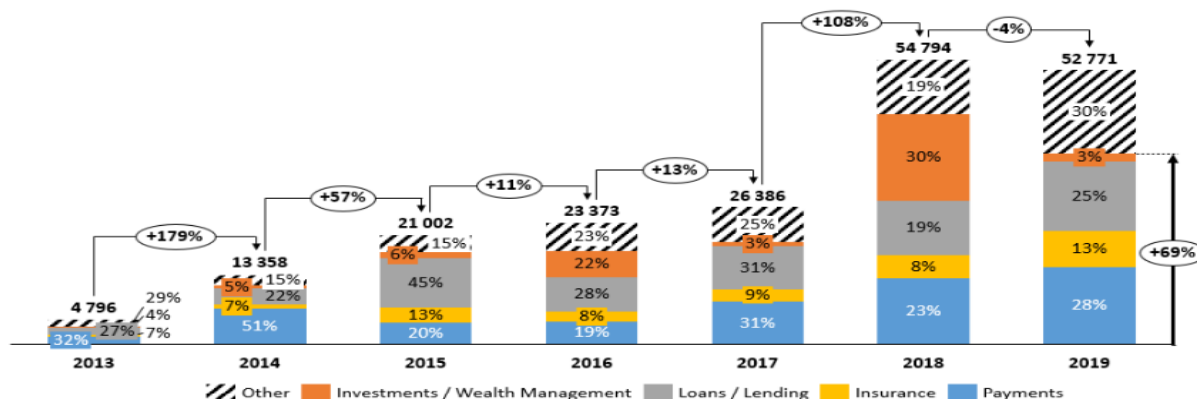
Analysis and results

Personal savings are related to the way

changed much in recent decades. For example, investment products with an average return of 5% (such as equity-based personal pension plans) are 2-3%. As a result, a household earns only 2 or 3 cents for every dollar invested, barely covering inflation (currently 1-2% in most developed countries).

Those long-standing critics cite the Fintech movement over the past decade, a stream of entrepreneurship focused on using automation technology (and especially AI tools) to make personal savings more efficient, and of course, it supports entrepreneurship. The rise of the fintech movement is clearly visible through the amount of capital invested in related projects. Investments have indeed grown at double-digit (if not exponential) rates over the past two years. It is interesting that investments are mainly focused on private financing initiatives (about 70% of total investments).

Fintechs today target both households and financial professionals, and the problems



households manage their funds and use the related ecosystem to meet their needs. In turn, needs have traditionally been articulated around four pillars or product categories: payments, loans, investment products and insurance. This creates an industry structured around two core activities. On the one hand, intermediaries and brokers distribute / sell financial products. On the other hand, asset managers, banks and insurers consider related services and related order processing. However, personal savings has become a critical topic in recent times, as related services have not

that fintechs target are mainly related to households. For example, recent evidence shows that automation technology has proven beneficial in reducing the time it takes to obtain credit and insurance by approximately 30%. When it comes to professionals, fintechs aim to provide tools to increase worker productivity. This was done by reviewing and automating the value chain of existing occupations.

Estimated worldwide funding for fintech initiatives (USD M\$).¹

¹ <https://www.accenture.com/us-en>

As we've seen above, AI will definitely play a major role in transforming personal finance. But it is not one of the many tools needed to solve social problems, such as retirement planning and risk management tools. An important element to consider is that savings opportunities (as well as investment opportunities) vary not only from country to country, but also across income and age groups. Income level, age, and economic uncertainty (as measured, for example, by the local unemployment rate) have indeed been shown to explain about 70 percent of household savings behavior at the country level. Let's take loans as an example. Their value chain can be divided into four segments: purchasing households, underwriting (e.g. assessing household and/or individual credit risks and processing applications), financing and servicing loans (for example, processing payments, responding to inquiries, dealing with outstanding loans and outages...). Much work has already been done here when it comes to underwriting and credit scoring in particular (see for examples (Eletter, Yaseen, & Elrefae, 2010; Opati, 2020)) and a recent review (Hentzen et al., 2022).), as seen in recent reviews (Godell, Kumar, Lim, & Pattnaik, 2021; K'onigstorfer & Thalmann, 2020) there is still scope for SI.

The insurance side of finance, in turn, exhibits a similar value chain to loans (acquiring, underwriting, servicing and financing). There are three main areas of transformation where SI can be used.

First, when it comes to claims-driven service delivery, productivity can be improved, management (e.g. through the use of tools such as chatbots (Riikinen, Saarij"arvi, Sarlin, & L"ahteenm"aki, 2018)) and fraud detection (for example: (Dhieb, Ghazzai, Besbes, & Massoud, 2020)).

Second, SI is used to drive profitable growth through customer acquisition and retention (e.g., higher levels of personalization. Finally, financing can be improved through the use of larger data sets (e.g., telematics) for more accurate pricing of insurance products and provide.

On the payment side of the industry, SI applications seem to be quite limited to my knowledge. And given the transferability between the lending and payment industries, the research areas highlighted in the literature seem to be problems expressed in terms of greater alignment, inclusion and anonymization with the concepts of credit scoring and fraud detection.

future developments for which the use of SI is not discussed but can be imagined.

In conclusion, SI cannot be considered a panacea that solves all the main social problems, that is, it is not a set of tools limited to the investment industry and the investment field. Financial technology is already playing a major role in transforming the personal finance industry. SI has thus far been instrumental in accelerating the distribution of loans and insurance. When it comes to payments, the current trends in digitization are fueled by their proliferation. "Buy now, pay later" concepts (which represent another form of credit or short-term credit) actually existed, but these have also been clarified. This means that the investment section of personal finance is constantly changing. The personal finance sector cannot have a profound social impact if the relevant changes are not combined with public reforms.

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