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International Journal of Bank Marketing

Personal financial planning and the propensity of central bank digital currency adoption

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Received 9 January 2025
Revised 7 April 2025
11 June 2025
19 June 2025
Accepted 19 June 2025

Abstract

Purpose – This study aims to investigate the personal financial planning factors influencing the adoption of central bank digital currencies (CBDCs).

Design/methodology/approach – The study collects primary data from two countries outside the Eurozone – Sweden and the UK – where central banks are actively working on CBDC projects. Our study applies self-control theory, highlighting financial planning as a crucial factor in individual financial decisions.

Findings – We find a strong and positive relationship between individuals' propensity to plan for their finances (financial planning) and their intent to adopt CBDC, irrespective of the country. Moreover, we identify socioeconomic factors that can encourage (e.g. education) or hinder (e.g. age) the adoption of CBDC. Personality traits play a significant role in determining this adoption decision.

Social implications – This study highlights two key policy recommendations that are related to United Nation's Sustainable Development Goals 3 and 5. The first focuses on information dissemination and gender equality, while the second addresses the design of CBDC.

Originality/value – The study went beyond the existing literature on CBDC adoption, which primarily focuses on the direct impact of trust and security and integrates socioeconomic factors with psychological elements to more comprehensively assess the traits that influence motivation or demotivation toward adopting CBDCs.

Keywords CBDC, Personal finance, FinTech, Financial planning

Paper type Research article

1. Introduction [1]

Central bank digital currency (CBDC) is a digital form of sovereign money, serving as an alternative to fiat currencies (Niepelt, 2024; Thakor, 2020). It is defined as "a digital liability of a CB [central bank], or other competent authority, representing a jurisdiction's sovereign currency available to the private sector" (Dionysopoulos *et al*., 2024, p. 2). Many central banks are exploring CBDCs to offer secure, reliable alternatives to non-sovereign money (Agur *et al*., 2022). CBDCs could transform payment systems by providing secure, efficient and accessible alternatives to traditional methods (Hoang *et al*., 2023). However, individual acceptance remains uncertain. Despite growing institutional interest and pilot programs in

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Funding: Mustafa Nourallah and Izidin El Kalak received funding from the Research Council of Oman under the grant BFP/RGP/ICT/23/060.

International Journal of Bank Marketing
Vol. 44 No. 2, 2026
pp. 149-172
Emerald Publishing Limited
e-ISSN: 1758-5937
p-ISSN: 0265-2323
DOI 10.1108/IJBM-01-2025-0019

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several countries, public adoption depends on an interplay of technological trust, financial literacy and perceived personal benefit. Understanding the factors that shape individual attitudes toward CBDCs is therefore critical to realizing their full potential. We examine how personal financial planning influences interest in and intent to adopt CBDCs.

To date, only three central banks have launched CBDCs. The Bahamian Sand Dollar, introduced in 2020, has seen limited use. Nigeria's 2021 eNaira launch saw low adoption: only 0.8% of account holders downloaded the wallet, and just 1.5% of those became active (Ree, 2023). Learning from this, Jamaica introduced incentives for its JAM-DEX, offering 2% cashback (up to 5,000 Jamaican Dollars) and 25,000 Jamaican Dollars to the first 10,000 small businesses that receive five JAM-DEX payments (Bank of Jamaica, 2024).

The Bank of England, currently developing a digital pound, acknowledges adoption challenges, stating that "for the digital pound to play the role that cash plays in anchoring the monetary system, it needs to be usable and sufficiently adopted by households and businesses" (Bank of England and HM Treasury, 2023, p. 24). In an interview on CBDC and non-sovereign digital money, the former Governor of Sweden's central bank (Sveriges Riksbank) stressed the need for the Swedish krona (or its digital version) to effectively compete with non-sovereign digital currencies.

Although significant progress has been made, research into the underlying factors that shape individuals' willingness to adopt CBDCs is still ongoing. Conlon *et al.* (2024) highlight the influence of central bank announcements in boosting positive sentiment. Bijlsma *et al.* (2024) began exploring this by studying digital euro acceptance in the Netherlands. European countries outside the Eurozone have received comparatively less attention in the context of CBDC adoption, resulting in a limited understanding of the sociocultural, economic and institutional factors that may influence adoption behavior within these regions. In this regard, Sweden serves as an important example. The Swedish National Bank (Sveriges Riksbank, 2022), the oldest central bank in the world, has already published the third report on the E-Krona project and engages in active discussions on E-Krona-related issues. Another notable example is the digital pound, supervised by the Bank of England, which has historically played a significant role in the global financial landscape. The two counties represent different stages of commitment to CBDCs. Sweden, where only 8% of the population used cash in 2022 (Sveriges Riksbank, 2022), was the first country to announce a CBDC project. Meanwhile, the UK is hosting dynamic discussions on the need for a sovereign digital payment method. As of 2023, the Treasury and the Bank of England concluded that a digital pound will likely be needed soon [2].

The success of CBDCs will depend on individuals' readiness to use them, as widespread adoption is crucial for CBDCs to become an acceptable form of payment (Keister and Sanches, 2023). Therefore, in countries that have not yet adopted this technology, it is important to study individual readiness to use CBDCs and the impediments that preclude adopting and usage (Sandhu *et al.*, 2023). Heidenreich and Handrich (2015) introduce passive innovation resistance (PIR) as a predisposition to resist adopting innovations before a thorough evaluation. They contend that PIR can impede the adoption process by reinforcing adherence to the status quo and fostering an inherent aversion to change. This resistance not only diminishes the intention to adopt but also intensifies active innovation resistance (Wang *et al.*, 2023). Consequently, a comprehensive understanding of PIR is essential for both explaining and predicting behaviors related to innovation adoption. Laukkanen (2016) adds that even when service innovations appear similar, the decision processes underlying consumer adoption and rejection should not be regarded as opposites. Instead, these processes are driven by distinct determinants (i.e. perceived risk, complexity and individual predispositions toward technology).

The financial technology (FinTech) literature suggests that trust and security play a critical role in adoption decisions (Sandhu *et al.*, 2023). While trust and security are essential, these factors alone may not drive the adoption of CBDCs, as illustrated by the slow adoption process of eNaira. Despite being supported by the central bank, eNaira struggled to gain traction. Additionally, non-sovereign digital payment methods such as PayPal and Apple Pay have successfully developed secure and trustworthy payment methods.

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Security and trust are not the only factors that can drive adoption behavior. There is a strong positive relationship between engaging in financial planning and behavior modification. Individuals more engaged in financial planning are more likely to be comfortable adopting FinTech solutions (Rossi and Utkus, 2024). The cost and benefits of CBDC will likely be a crucial factor for people to consider (Claessens *et al*., 2024; Niepelt, 2024). Thus, as financial planning, a proxy for personal financial preparedness increases, so does the willingness to adopt CBDC. However, the impact of financial planning on CBDC adoption remains an understudied topic. The influence of financial planning, trust and security (Sandhu *et al*., 2023), demographic and socioeconomic factors on individuals' readiness to use CBDC has not been thoroughly explored.

Without widespread adoption, governments risk investing in CBDC programs that are costly and difficult to implement. It is therefore essential to identify which groups are likely to adopt this technology and when. To move beyond existing studies that focus primarily on trust and security, we collect primary data from Sweden and the United Kingdom, where central banks are actively working on CBDC projects. We apply self-control theory to highlight financial planning as a key factor in individual financial decision-making. Drawing from the financial technology adoption literature, we also examine how trust and security may mediate CBDC adoption. By integrating socioeconomic and psychological factors, we provide a more comprehensive assessment of the traits that influence motivation or reluctance to adopt CBDCs.

Our contribution is threefold. First, we examine how financial planning habits, such as tracking expenses and preparing for the future, influence CBDC adoption. Individuals more engaged in financial planning may be more open to adopting CBDCs due to greater comfort with new financial products and risk assessment. The relationship may also be bidirectional, as CBDC adoption could promote more informed financial decisions. Second, we build on literature concerning the role of security and trust in FinTech adoption, consistent with Nourallah's (2023) findings on robo-advisors. Comin and Mestieri (2014) highlight the lack of microdata as a weakness in technology adoption research. We address this gap by incorporating individual-level data. Lastly, we collect primary data from two countries to contribute to location-specific research on CBDC adoption. We compare factors influencing adoption across different political, economic and legal environments and offer insights into how financial planning may accelerate or delay adoption, especially in contexts beyond traditional banking.

As the adoption of CBDCs continues to gain attention, understanding the factors influencing public acceptance is crucial. Given that privacy concerns, particularly regarding traceability, remain a major factor shaping public willingness to adopt CBDCs (Hoang *et al*., 2023), our framework synthesizes insights from multiple adoption theories to account for both facilitating and inhibiting factors. By integrating these theoretical perspectives, our study not only examines the behavioral and psychological mechanisms influencing CBDC adoption but also considers the broader supply- and demand-side factors that central banks must navigate when introducing new financial technologies.

The remainder of the paper is organized as follows: Section two provides a review of related literature. Section three outlines the study and sample characteristics. Section four discusses the methodology and results. Finally, section five concludes with policy recommendations and suggestions for future research.

2. Theoretical background

2.1 FinTech adoption

Central banks are exploring two primary approaches for issuing CBDCs. One involves distributing CBDCs through digital wallets that require user login and verification, while the other uses a token-based system where authenticity is verified similarly to physical cash (Dionysopoulos *et al*., 2024). Some nations are considering a hybrid model to combine the

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benefits of both. Regardless of the method, understanding the factors that influence CBDC adoption is essential for ensuring demand and effective implementation.

As technologies like CBDCs emerge, understanding public adoption patterns becomes increasingly important. The unified theory of acceptance and use of technology (UTAUT) framework (Venkatesh *et al.*, 2003) has been used to examine how security, trust and communication channels affect adoption. Studies show that these elements are central to shaping behavioral intentions toward CBDCs (Venkatesh *et al.*, 2012; Solberg and Benhayoun, 2022). UTAUT demonstrates that perceived security influences willingness to adopt, mediating factors like usefulness and ease of use. While UTAUT captures many key variables, our study emphasizes individual-level adoption patterns using Rogers' (2003) innovation diffusion theory. Figure 1 presents the theoretical model.

Rogers suggests that the adoption rate not only depends on the technology's perceived attributes, such as its relative advantage, complexity and compatibility, but also on how well it is communicated across different channels. This aspect of communication is particularly relevant when central banks consider the implementation of CBDCs, as targeting appropriate communication channels to educate the population is critical. Furthermore, as highlighted by Md Nor *et al.* (2010), understanding the complexity and compatibility of technology with existing behaviors among users is crucial for diffusion. This includes assessing the trade-offs between privacy concerns and the functionality of digital currencies. The interaction between demand-side and supply-side factors also plays a pivotal role in the adoption of technology. Research by Bijlsma *et al.* (2024) emphasizes that demand factors, like financial incentives in the form of higher interest rates, can significantly drive CBDC adoption. Their findings highlight the importance of pricing and economic drivers in shaping user behavior.

The work of Laukkanen *et al.* (2008) and Laukkanen (2016) reinforces the distinction between adoption and non-adoption, helping to categorize consumer resistance into groups such as postponers, opposers and rejectors. This distinction is essential for analyzing individual responses to CBDCs, particularly as privacy concerns influence willingness to adopt. As noted by Hoang *et al.* (2023), balancing traceability and privacy remains a major concern for potential users. Our theoretical framework incorporates both the UTAUT and innovation diffusion theory to explore the factors that drive or hinder CBDC adoption. It

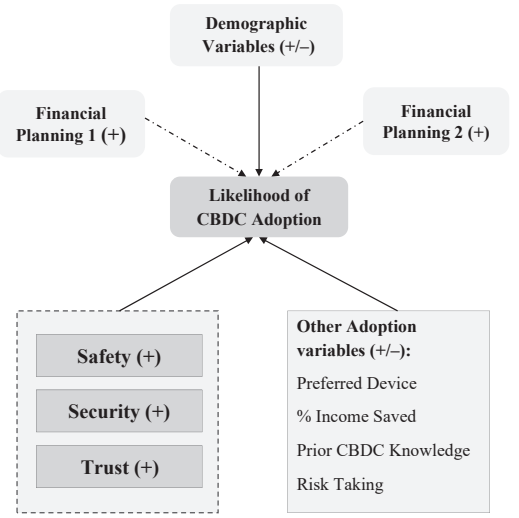

Figure 1. Conceptual model and channel tests (mediation analysis) through innovation diffusion theory. Source: Authors' own creation

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recognizes the importance of financial incentives, privacy and strategic communication in educating and engaging the public.

Past research has examined the adoption of technologies like robo-advisors (Nourallah, 2023) and digital banking services (Moorthy *et al*., 2020) within the expanded UTAUT framework. Our study builds on these models to analyze CBDC adoption. Contributions from Md Nor *et al*. (2010) and Ozili (2023) highlight the roles of complexity, compatibility and communication. The framework also considers both supply-side mechanisms and demand-side behaviors, while addressing the separate processes of adoption and non-adoption as outlined by Laukkanen *et al*. (2008) and Laukkanen (2016).

It is essential to underscore that the decision to adopt and the decision not to adopt are distinct processes. Laukkanen (2016) argues that this distinction requires treating adoption and non-adoption as separate phenomena rather than opposing ends of a single continuum. Furthermore, Laukkanen *et al.* (2008) categorizes non-adopters into postponers, opposers and rejectors, indicating that an initial lack of adoption does not necessarily reflect a uniform or permanent resistance. This nuance is particularly relevant when considering the adoption of emerging technologies, such as CBDCs, where consumer resistance may be heterogeneous and dynamic.

Bijlsma *et al.* (2024) also identify personal characteristics associated with adoption: gender (males are more likely to adopt a CBDC), knowledge (greater understanding correlated with a higher likelihood of adoption), privacy concerns (valuing privacy is linked to higher adoption potential) and trust (generalized trust is associated with greater intent to use CBDC). They argue that a significant motivator for Dutch consumers to adopt a CBDC is the financial incentive of higher interest rates, which increases the likelihood of adoption. Oh and Zhang (2022) similarly emphasize the influence of CBDC interest rate on adoption behavior.

There is a strong association between behavioral finance and FinTech adoption, particularly with robo-advisors. D'Acunto *et al*. (2019) show that robo-advisors can reduce behavioral biases like disposition, trend-chasing and rank effect. Similarly, Gargano and Rossi (2024) find that active, attentive investors are more likely to adopt robo-advisors.

Non-sovereign digital funds and CBDCs share core concepts but differ in privacy and traceability. Non-sovereign digital money is private and harder to trace, while CBDCs must be traceable, controlled and recorded on a central ledger (Elsayed and Nasir, 2022). This traceability raises privacy concerns for those who value financial anonymity. However, not recording transactions may lead to issues like money laundering (Hoang *et al*., 2023). To promote adoption, central banks should offer attractive terms to private depositors. Agur *et al.* (2022) argue that well-designed CBDCs can provide competitive interest rates.

2.2 Financial behavior and financial planning

The field of financial planning is rooted in the theory of self-control (Thaler and Shefrin, 1981), which likens the propensity to save and spend to the corporate agency problem. Financial planning addresses the trade-off between current and future spending and the implications of these decisions on resource utilization. Better financial habits are influenced by genetic factors such as prioritizing future savings over present consumption (Cronqvist and Siegel, 2015) and demographic and psychological characteristics.

Focusing on the non-genetic factors influencing saving behavior, a study of Dutch consumers by Brounen *et al*. (2016) identifies several key influences, including parental influence, self-efficacy, internal locus of control and financial literacy. They find that consumers with higher financial literacy are more likely to save.

Collins (2012) suggests that financial advice can substitute for financial literacy, and financial planning acts as a proxy for financial management. It is not necessarily financial literacy that drives financial decisions but the propensity to plan for financial matters. Thus, FinTech solutions like financial planning software, budgeting tools and robo-advisors aim to minimize this internal agency problem and enhance financial decision-making (D'Acunto and Rossi, 2023).

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The benefits of financial planning include setting sensible goals and objectives (Winterich and Nenkov, 2015) and reducing financial and mental stress (Lusardi and Mitchell, 2011). Recently, companies have leveraged FinTech to enhance these positive behavior modifications. For example, Karlan *et al*. (2016) find that clients who receive reminders about their saving goals from banks are more likely to achieve them. Using financial planning tools through FinTech indicates an interest in personal financial matters, leading to higher adoption of FinTech overall and positively modifying financial behavior.

2.3 Financial planning and CBDC adoption

CBDC is akin to other FinTech payment solutions (Scharnowski, 2022), and individuals could decide to use it or not. Whether designed as a wallet or token, CBDCs could integrate financial planning tools as FinTech applications evolve. This feature sets them apart from cash. Like other FinTech applications, CBDCs could be designed to remind people of their savings goals, help them prepare for expenses and manage emergency funds, potentially encouraging CBDC adoption.

While discussions on FinTech and CBDC adoption often emphasize technological aspects (Solberg and Benhayoun, 2022), their purpose is also connected to improving personal financial management. Andreou and Anyfantaki (2021) show that financial literacy supports online banking adoption by helping individuals understand how financial tools can benefit them, influencing informed decision-making. We extend this argument by proposing that it is not only financial knowledge, the passive component, but the active practice of financial planning for one's future that affects the adoption of FinTech and CBDCs.

Many FinTech solutions provide tools to support financial planning, such as tracking expenses and setting savings goals (Nourallah *et al*., 2024). Walsh and Lim (2020) find that individuals who maintain emergency funds, pay off credit cards monthly, or hold retirement and investment accounts are more likely to adopt personal financial management technologies. Fan (2022) adds that subjective financial literacy, risk tolerance and both subjective and objective investment knowledge are associated with mobile investment and trading use.

The relationship between financial planning and CBDC adoption remains largely unexplored. Greater planning may lead to increased familiarity and comfort with FinTech, thereby increasing CBDC adoption. Alternatively, it could heighten risk awareness and reduce adoption willingness. However, findings from robo-advisors and open banking suggest that deeper understanding generally promotes adoption. We therefore hypothesize that individuals with stronger financial planning behaviors are more likely to adopt CBDCs.

3. Methodology

3.1 Questionnaire design

We adopt the preliminary questions from previous studies of FinTech and behavioral finance. The survey [3] begins with demographic questions about country, gender, age, education and employment. Two background questions inquire about the preferred device and prior knowledge of CBDC. We provide a brief definition of CBDC to prevent confusion among respondents. The next section covers security, safety, trustworthiness, and adoption (Nourallah, 2023). We include questions on the statistical background (serving as a proxy for financial decision-making), risk-taking (Oehler *et al*., 2022) and financial planning (Nourallah *et al*., 2024). We also develop a question about saving tendencies.

The preliminary questionnaire is reviewed by three English-speaking experts in the field, whose feedback enhances the readability and clarity of the questions. Next, the questionnaire is translated into Swedish and reviewed by two Swedish-speaking experts, who suggested further improvements. Following previous research on FinTech adoption (e.g. Jiang and Lau, 2021), we employ a market survey company to manage data collection in two phases. However, before

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distributing the final questionnaire, we conduct a pilot test with 50 participants and use their feedback to make final adjustments. We conduct the pilot test to ensure seamless distribution and to identify and eliminate potential errors. Subsequently, in the final week of March 2024, 380 responses were gathered from the UK, while in September 2024, we obtained 376 responses from Sweden. The questionnaire was distributed to individuals from diverse backgrounds in both countries, ensuring a heterogeneous sample in terms of gender and educational background. The final questionnaire uses a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). See Table A1 in the Appendix for variable definitions.

3.2 Methodology

To examine the main determinants of the widespread acceptance and adoption of CBDC, in particular, the role played by the individuals' propensity to plan for their finances, we estimate the following baseline cross-sectional model:

$$\text{CBDC_Adoption}_i = \beta_0 + \beta_1 \text{Financial Planning}_i + \gamma X_i + \varepsilon_i \quad (1)$$

where i represents the individual observation. CBDC_Adoption_i is a dummy variable equal to one if an individual intends to use CBDC when the central bank in their country issues this technology, and zero otherwise. $\text{Financial Planning}_i$ includes two variables that relate to financial planning namely: *FinPlan1* and *FinPlan2*. *FinPlan1* is a dummy variable equal to one if the individual plans for their monthly expenses, and zero otherwise. *FinPlan2* is a dummy variable equal to one if the individual keeps electronic/written track of their monthly expenses, and zero otherwise. X_i is a vector of control variables capturing characteristics such as gender (*Female*), age (*Age*), level of education (*Education*) and device preference for conducting financial transactions (*PreferredDevice*).

4. Results

4.1 Descriptive statistics

We present the descriptive statistics of our sample in Table 1. Our sample is relatively homogenous, and the respondents are located in areas with a well-developed financial infrastructure and access to digital financial services. Among the respondents, 24.3% plan to use CBDC if their central banks issue such technology, resulting in a mean score of 2.6 (SD = 1.25) on a scale from 1 (strongly disagree) to 5 (strongly agree). The sample is evenly split between genders, with 50.1% female, and the average age is 48.5 years. Regarding financial transaction preferences, 54.63% of respondents prefer to conduct transactions via mobile app; 32.01% via computer/laptop; and only 2.66%, 6.61% and 4.09% via smartwatches, tablets or other devices, respectively. In terms of education, 37.96% of the sample have a bachelor's degree or higher, 32.01% have a high school diploma and 18.78% have completed vocational education. Employment status shows that most respondents are employed, with 38.76% working full-time, 12.83% part-time and 25.93% self-employed. Additionally, 5.03% of respondents are still pursuing their education.

To assess familiarity with CBDC, we asked whether respondents had heard of it and provided examples. We found that 25% had prior familiarity, 64.55% were unfamiliar and 10.45% were unsure. After offering a definition and background, we evaluated perceptions of CBDC security. Among respondents, 30.96% agreed or strongly agreed that CBDCs are secure for transactions, and 30.56% believed that information is effectively safeguarded.

Given prior literature on financial planning and decision-making (Lusardi and Mitchell, 2017) and our hypothesis regarding CBDC adoption, we present findings from the full sample and two subsamples based on financial planning engagement. The first subsample focuses on planning monthly expenses. The second assesses whether respondents track expenses in an organized, consistent manner. In the overall sample, 65.08% agreed or strongly agreed that they track monthly expenses, and 43.12% maintain a recorded and trackable budget.

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Table 1. Descriptive statistics and univariate tests

	Full sample (N = 756)		FinPlan1 = 1 (N = 492)		FinPlan1 = 0 (N = 264)		FinPlan2 = 1 (N = 326)		FinPlan2 = 0 (N = 430)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Dependent variables										
CBDC_Adoption (Dummy)	0.243	0.429	0.299	0.458	0.14	0.348	0.365	0.482	0.151	0.359
			−4.916[a]***				−6.994***			
CBDC_Adoption	2.602	1.25	2.736	1.303	2.352	1.103	2.896	1.339	2.379	1.129
			−4.063***				−5.748***			
Independent variables										
FinPlan1 (Dummy)	0.651	0.477	1	0	0	0	0.88	0.325	0.477	0.5
							−12.683***			
FinPlan1	3.784	1.046	4.433	0.496	2.576	0.654	4.31	0.796	3.386	1.038
			−43.765***				−13.368***			
FinPlan2 (Dummy)	0.431	0.496	0.583	0.494	0.148	0.356	1	0	0	0
			−12.683***							
FinPlan2	3.067	1.419	3.494	1.367	2.273	1.148	4.463	0.499	2.009	0.866
			−12.366***				−45.705***			
Control variables										
Female	0.501	0.5	0.512	0.5	0.481	0.501	0.485	0.501	0.514	0.5
			−0.816				0.797			
Age	3.632	1.15	3.642	1.141	3.614	1.168	3.61	1.166	3.649	1.138
			−0.326***				0.455			
Education (Dummy)	0.38	0.486	0.404	0.491	0.333	0.472	0.426	0.495	0.344	0.476
			−1.924*				−2.311**			
Education	3.999	1.109	4.081	1.071	3.845	1.164	4.11	1.073	3.914	1.13
			−2.809***				−2.420**			
Employment (Dummy)	0.388	0.488	0.392	0.489	0.379	0.486	0.402	0.491	0.377	0.485
			−0.363				−0.701			
Employment	3.017	2.064	3.008	2.072	3.034	2.053	2.966	2.07	3.056	2.061
			0.165				0.591			
PreferredDevice (Dummy)	0.546	0.498	0.537	0.499	0.564	0.497	0.5	0.501	0.581	0.494
			0.731				2.231**			
PreferredDevice	1.735	1.067	1.736	1.06	1.735	1.081	1.748	1.01	1.726	1.109
			−0.0113				−0.292			
Channel test variables										
Security (Dummy)	0.31	0.463	0.38	0.486	0.178	0.383	0.426	0.495	0.221	0.415
			−5.850***				−6.196***			
Security	3.016	1.097	3.13	1.138	2.803	0.982	3.267	1.137	2.826	1.026
			−3.95***				−5.589***			
Safety (Dummy)	0.306	0.461	0.376	0.485	0.174	0.38	0.436	0.497	0.207	0.406
			−5.863***				−6.962***			
Safety	2.995	1.098	3.122	1.142	2.758	0.968	3.248	1.124	2.802	1.038
			−4.403***				−5.646***			
Trust (Dummy)	0.304	0.46	0.356	0.479	0.208	0.407	0.423	0.495	0.214	0.411
			−4.242***				−6.352***			
Trust	2.951	1.153	3.055	1.192	2.758	1.051	3.221	1.179	2.747	1.09
			−3.404***				−5.72***			
Additional variables										
PrevKnow (Dummy)	0.25	0.433	0.278	0.449	0.197	0.398	0.319	0.467	0.198	0.399
			−2.473**				−3.848***			
PrevKnow	1.854	0.578	1.825	0.594	1.909	0.544	1.776	0.604	1.914	0.55
			1.907*				3.271***			

(*continued*)

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Table 1. Continued

	Full sample (N = 756)		FinPlan1 = 1 (N = 492)		FinPlan1 = 0 (N = 264)		FinPlan2 = 1 (N = 326)		FinPlan2 = 0 (N = 430)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Savings (Dummy)	0.102	0.303	0.118	0.323	0.072	0.259	0.117	0.321	0.091	0.288
			−1.993**				−1.164			
Savings	2.694	1.736	2.75	1.685	2.591	1.825	2.807	1.643	2.609	1.8
			−1.202				−1.551			
StatsKnow (Dummy)	0.378	0.485	0.421	0.494	0.299	0.459	0.46	0.499	0.316	0.466
			−3.303***				−4.078***			
StatsKnow	3.073	1.077	3.183	1.064	2.867	1.072	3.245	1.07	2.942	1.064
			−3.877***				−3.875***			
RiskTaking (Dummy)	0.254	0.436	0.297	0.457	0.174	0.38	0.298	0.458	0.221	0.415
			−3.718***				−2.403**			
RiskTaking	2.624	1.186	2.699	1.237	2.485	1.071	2.702	1.253	2.565	1.13
			−2.377**				−1.579			

Note(s): [a]*t*-tests are conducted to test for differences in means between the propensity of having financial planning and not having

Source(s): Authors' own creation

Table 1, Models 2 and 3, presents the characteristics and demographics of these subsamples. We observe a significant difference in intent to adopt and perceived CBDC security based on financial planning behavior. Among those who plan their finances, 29.9% and 36.5% agreed or strongly agreed that CBDC is trustworthy and that they intend to use it. Among non-planners, only 14% and 15.1% expressed trust in or intention to use CBDC. These substantial and statistically significant differences support further exploration in the multivariate analysis.

4.2 Multivariate results

We present our main results in Table 2. Both measures of financial planning are statistically significantly associated with the intent to adopt CBDC. The propensity to budget and the tracking of expenses, used as proxies for financial planning, are positively linked to CBDC adoption in both Sweden and the United Kingdom. These findings suggest that individuals more engaged in financial management are more receptive to emerging financial technologies. The consistency across two national contexts supports the generalizability of the relationship between financial planning and digital currency adoption. The strength of these associations across models provides further empirical support for the idea that proactive financial behavior enhances receptiveness to innovations in the monetary system.

In a separate analysis by country, we found no statistically significant differences. The intention to adopt CBDC does not vary meaningfully between respondents in the United Kingdom and Sweden. These results suggest that national context does not substantially influence adoption intentions in our sample. Several control variables, including prior knowledge of CBDC, risk attitudes, age, education and employment status, are associated with adoption intent. Older individuals are less likely to adopt, consistent with Bijlsma *et al.* (2024). In contrast, higher education, full-time employment, prior knowledge and higher risk-taking are positively associated with adoption, consistent with broader FinTech literature. Singh *et al.* (2020) found that gender and age influence FinTech adoption, with older individuals perceiving lower security. Jünger and Mietzner (2020) similarly report that men adopt new technologies more quickly. While we find notable gender effects in many unreported models, these effects disappear when full controls are included in the final models in Table 2. This suggests that, in the case of CBDC adoption in Sweden and the United Kingdom, gender effects are explained by other variables such as age, education, risk-taking or topic familiarity.

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Table 2. The determinants of CBDC adoption

	Controls (1) Coefficient	ME	Independent (2) Coefficient	ME	(3) Coefficient	ME	Full model (4) Coefficient	ME	(5) Coefficient	ME
FinPlan1			0.961***	0.171			0.852***	0.112		
			(0.203)				(0.228)			
FinPlan2					1.172***	0.203			1.102***	0.178
					(0.177)				(0.205)	
Female	−0.249	−0.033					−0.315	−0.041	−0.298	−0.097
	(0.212)						(0.216)		(0.219)	
Age	−0.493***	−0.067					−0.511***	−0.067	−0.493***	−0.092
	(0.102)						(0.104)		(0.106)	
Education	0.578***	0.078					0.537***	0.071	0.518**	0.095
	(0.204)						(0.207)		(0.209)	
Employment	0.487**	0.066					0.502**	0.066	0.513**	0.110
	(0.206)						(0.209)		(0.213)	
PreferredDevice	0.047	0.006					0.055	0.007	0.136	0.007
	(0.0219)						(0.222)		(0.226)	
%IncomeSaved	−0.388	−0.052					−0.453	−0.059	−0.396	
	(0.327)						(0.330)		(0.333)	
Prior CBDC knowledge	1.247*** (0.212)	0.169					1.210*** (0.216)	0.160	1.150*** (0.220)	
RiskTaking	1.019***	0.138					0.927***		0.995***	
	(0.216)						(0.220)	0.122	(0.224)	
Constant	−0.527		−1.814***		−1.726***		−0.963*		−1.02688	
	(0.479)		(0.177)		(0.135)		(0.504)		(0.510)	
Pseudo R^2	0.2274		0.0299		0.0548		0.2452		0.2628	
Observations	756		756		756		756		756	

Note(s): ***, **, * denote significance at the 0.01, 0.05, and 0.10 levels (two-tailed), respectively

Source(s): Authors' own creation

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We run three sets of robustness tests using multinomial and OLS models to verify the validity of our main results, presented in Table 3. In the first set (Models 1 to 4), we use a multinomial logit model with three response categories: those who disagree or strongly disagree with adopting CBDC (base group), those who are neutral and those who agree or strongly agree. Both proxies for financial planning remain strongly associated with the intent to adopt CBDC. In Model 1, the insignificant coefficient suggests that financial planning behavior does not significantly influence the likelihood of opposing or remaining neutral. However, individuals who plan their finances and track expenses are more likely to express an intention to adopt CBDC. The sign and significance of control variables also remain similar to the main results in Table 2 for those who agree or strongly agree, but not for neutral respondents.

The second multinomial model (Models 5 to 12) reinforces these findings, again showing that financial planning is not significantly linked to a mildly negative or neutral stance. However, individuals who engage in financial planning are increasingly likely to express interest in CBDC as intent levels rise. The consistency of these results is confirmed by the OLS models (Models 13 and 14), which support the findings in Table 2. Individuals who are likely to plan their finances also tend to express a higher likelihood of adopting central bank digital currencies in the future.

4.3 Channel tests

Our findings indicate that individuals' tendency to plan their finances significantly increases their intention to adopt CBDC. Previous literature shows that trust, security and safety play important roles in technology adoption. To separate the effects of financial planning from those of trust, security and safety, we examine whether the *ex ante* perceptions, namely that (1) CBDCs are secure for transactions (*Security*), (2) personal information will be safeguarded (*Safety*) and (3) CBDCs can be trusted (*Trust*), mediate the relationship between financial planning and CBDC adoption intent.

Trust has consistently been identified as a critical factor in both the intention to adopt and actual adoption of new technologies, particularly within financial technologies. Research shows its influence on general technology adoption (Bahmanziari *et al*., 2003; Chawla *et al*., 2023), as well as on more specialized tools such as cryptocurrencies (Shahzad *et al*., 2024) and robo-advisors (Cheng *et al*., 2019; Senteio and Highes, 2024). Similarly, security, safety and perceived risk are major factors influencing FinTech adoption, supported by evidence from the European financial sector (Ismail *et al*., 2018), robo-advisory platforms (Aw *et al*., 2023) and electronic banking systems (Abikari, 2024).

To estimate the mediating channels between financial planning (treatment variable) and CBDC adoption (outcome variable), we apply the mediation analysis approach by Hicks and Tingley (2011). In the first step, we use a logit model to regress the mediators (security, safety and trust) separately on each financial planning measure (*FinPlan1* and *FinPlan2*) (Path A). In the second step, we regress CBDC adoption on both the mediators and the financial planning measures (Path B) using a logit model.

Table 4 provides the estimation results for Paths A and B. Models (1) to (4), (5) to (8) and (9) to (12) include the results for each of the mediation channels: *security*, *safety* and *trust*, respectively. In Model (1), we show that individuals' propensity to plan for their finances increases their *ex ante* perception of the security of CBDC for financial transactions. In Model (2), we show that both the treatment variable (*FinPlan1*) and the mediating variable (*Security*) are positively and statistically significantly associated with the outcome variable (*CBDC_Adoption*). Most importantly, we find that the average mediation effect is 8.2%. This means that 8.2% of the impact of the treatment variable (*FinPlan1*) on the outcome (*CBDC_Adoption*) operates through the mediator (*Security*). Further, the reported average direct effect is 5.4%, representing all other causal channels linking the treatment (*FinPlan2*) to the outcome variable (*CBDC_Adoption*). Finally, the percentage of the total effect mediated is 60%, indicating that the indirect impact represents 60% of the total effect.

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Table 3. Robustness tests

	Multinomial logit (3 categories) - base model: Strongly disagree or disagree				Multinomial logit (5 categories) - base model: Strongly disagree								OLS	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Neutral	Agree or strongly agree	Neutral	Agree or strongly agree	Disagree	Neutral	Agree	Strongly agree	Disagree	Neutral	Agree	Strongly agree	Full model	
FinPlan1	0.159	1.133***			0.031	0.174	0.949***	1.726***					0.383***	
	(0.184)	(0.238)			(0.230)	(0.210)	(0.278)	(0.446)					(0.084)	
FinPlan2			0.165	1.328***					0.086	0.208	1.193***	1.817***		0.478***
			(0.187)	(0.218)					(0.236)	(0.214)	(0.261)	(0.358)		(0.081)
Female	−0.556***	−0.987***	−0.542***	−0.955***	−0.016	−0.564***	−0.992***	−1.001***	−0.013	−0.548**	−0.962***	−0.960***	−0.365***	−0.340***
	(0.188)	(0.221)	(0.187)	(0.224)	(0.234)	(0.214)	(0.264)	(0.339)	(0.233)	(0.213)	(0.266)	(0.343)	(0.082)	(0.082)
Age	−0.525***	−0.904***	−0.521***	−0.895***	−0.165	−0.598***	−0.988***	−0.936***	−0.167	−0.595***	−0.981***	−0.931***	−0.371***	−0.359***
	(0.091)	(0.109)	(0.090)	(0.111)	(0.121)	(0.107)	(0.133)	(0.174)	(0.121)	(0.106)	(0.134)	(0.175)	(0.040)	(0.039)
Education	0.380**	0.872***	0.365*	0.837***	−0.198	0.298	0.658**	1.084***	−0.200	0.282	0.623**	1.053***	0.335***	0.318***
	(0.191)	(0.218)	(0.191)	(0.220)	(0.250)	(0.219)	(0.263)	(0.341)	(0.250)	(0.219)	(0.265)	(0.344)	(0.085)	(0.084)
Employment	−0.126	0.668***	−0.122	0.685***	0.431*	0.071	0.923***	0.743**	0.433*	0.076	0.939***	0.758**	0.263***	0.261***
	(0.199)	(0.221)	(0.199)	(0.224)	(0.260)	(0.236)	(0.274)	(0.349)	(0.260)	(0.236)	(0.276)	(0.352)	(0.089)	(0.088)
PreferredDevice	0.396**	0.178	0.411**	0.249	0.538**	0.624***	0.223	0.911**	0.549**	0.645***	0.294	1.013***	0.186**	0.223**
	(0.193)	(0.228)	(0.194)	(0.233)	(0.242)	(0.220)	(0.271)	(0.373)	(0.244)	(0.221)	(0.276)	(0.379)	(0.088)	(0.087)
Constant	1.490***	1.530***	1.499***	1.582***	−0.020	2.192***	2.199***	0.014	−0.028	2.197***	2.209***	0.223	3.552***	3.526***
	(0.438)	(0.512)	(0.436)	(0.509)	(0.604)	(0.520)	(0.622)	(0.872)	(0.602)	(0.517)	(0.618)	(0.832)	(0.197)	(0.193)
Pseudo R^2	0.1278		0.1385		0.1007				0.1083					
Adj R-squared													0.230	0.244
Observations	756		756		756				756				756	

Note(s): ***, **, * denote significance at the 0.01, 0.05, and 0.10 levels (two-tailed), respectively

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Table 4. Channel tests

Channel	Security (1) Path A	(2) Path B	(3) Path A	(4) Path B	Safety (5) Path A	(6) Path B	(7) Path A	(8) Path B	Trustworthiness (9) Path A	(10) Path B	(11) Path A	(12) Path B
FinPlan1	1.128***	0.523**			1.137***	0.537**			0.798***	0.816***		
	(0.199)	(0.256)			(0.199)	(0.252)			(0.191)	(0.259)		
FinPlan2			0.992***	0.833***			1.141***	0.718***			1.031***	0.830***
			(0.176)	(0.228)			(0.177)	(0.225)			(0.177)	(0.230)
Security (Dummy)		2.800***		2.761***								
		(0.234)		(0.235)								
Safety (Dummy)						2.660***		2.604***				
						(0.229)		(0.230)				
Trust (Dummy)										2.902***		2.836***
										(0.235)		(0.236)
Female	−0.643***	−0.517**	−0.586***	−0.531**	−0.459**	−0.619***	−0.408**	−0.620***	−0.656***	−0.504**	−0.627***	−0.474**
	(0.182)	(0.234)	(0.181)	(0.237)	(0.180)	(0.231)	(0.180)	(0.233)	(0.181)	(0.239)	(0.183)	(0.240)
Age	−0.512	−0.522***	−0.489***	−0.499***	−0.552***	−0.482***	−0.531***	−0.462***	−0.587***	−0.446***	−0.579***	−0.420***
	(0.087)	(0.116)	(0.087)	(0.118)	(0.087)	(0.113)	(0.087)	(0.114)	(0.087)	(0.118)	(0.088)	(0.119)
Education	0.888***	0.256	0.871***	0.239	0.665***	0.385*	0.648***	0.377	0.773***	0.268	0.750***	0.269
	(0.179)	(0.233)	(0.179)	(0.235)	(0.179)	(0.231)	(0.180)	(0.232)	(0.179)	(0.239)	(0.181)	(0.240)
Employment	0.388**	0.744***	0.382**	0.740***	0.319*	0.781***	0.316*	0.780***	0.365**	0.762***	0.365**	0.762***
	(0.184)	(0.233)	(0.184)	(0.235)	(0.183)	(0.232)	(0.185)	(0.234)	(0.182)	(0.239)	(0.185)	(0.240)
PreferredDevice	0.225	−0.205	0.275	−0.145	0.206	−0.236	0.277	−0.185	0.106	−0.121	0.172	−0.071
	(0.191)	(0.248)	(0.192)	(0.253)	(0.190)	(0.247)	(0.193)	(0.250)	(0.190)	(0.251)	(0.194)	(0.253)
Constant	−0.146	−1.127**	0.042	−1.241**	0.014	−1.161**	0.127	−1.195**	0.457	−1.688***	0.437	−1.622***
	(0.419)	(0.556)	(0.409)	(0.560)	(0.414)	(0.538)	(0.408)	(0.537)	(0.410)	(0.575)	(0.410)	(0.573)
Average Mediation	0.082		0.077		0.080		0.086		0.060		0.082	
Average Direct Effect	0.054		0.093		0.058		0.084		0.082		0.092	
% of total Effect mediated	0.600		0.453		0.580		0.506		0.423		0.475	
Pseudo R2	0.152	0.380	0.149	0.391	0.141	0.363	0.148	0.370	0.138	0.396	0.156	0.399
Observations	756	756	756	756	756	756	756	756	756	756	756	756

Note(s): ***, **, * denote significance at the 0.01, 0.05, and 0.10 levels (two-tailed), respectively
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Based on the results reported in the models, we find that safety and trust mediate the relationship between financial planning and CBDC adoption. For FinPlan1, the average mediation effect is 8% for safety and 6% for trust. These findings suggest that individuals who view CBDCs as safe are more likely to adopt them, with safety accounting for a larger portion of the mediation. Trust also contributes to adoption intent but to a slightly lesser extent. Among the three perceptions examined, perceived transaction security has the strongest mediating effect. Belief that personal information is protected also plays a meaningful role, emphasizing privacy concerns in adoption decisions. Trust in the reliability of CBDC shows the weakest effect, indicating that while trust matters, security and privacy concerns are stronger motivators.

All three *ex ante* perceptions, security, privacy, and trust, serve as mediators between financial planning and the intent to adopt CBDCs. Perceived security has the strongest influence, followed by privacy. Trust, although statistically significant, has a weaker impact. This may reflect uncertainty about institutional credibility or the unfamiliarity of central bank-issued digital tools. These findings emphasize the importance of addressing public perceptions during CBDC development, as psychological and perceptual factors play a key role in adoption behavior.

4.4 Further tests

To the extent that financial planning significantly increases their intention to adopt CBDC, we make two predictions regarding how this relationship may vary in the cross-section.

First, we expect that better financial planning will lead to higher CBDC adoption among individuals with previously acquired knowledge or personal risk attitudes. We consider three variables: previous knowledge of CBDC (*PrevKnow*), perceived statistical knowledge (*StatsKnow*) and personal risk attitude (*RiskTaking*). Consistent with findings in other FinTech industries (Jünger and Mietzner, 2020; Singh *et al*., 2020), we could argue that previous knowledge of CBDC increases the probability of adopting CBDC. Similarly, higher statistical knowledge and a greater propensity for risk-taking may also increase CBDC adoption as it gives respondents a feeling of understanding and comfort with the topic of new technology (Isaia and Oggero, 2022). Table 5 combines the three variables of interest and the interaction effect of these three variables on the two measurements of financial planning (*FinPlan1 and FinPlan2*). Models (1)–(6) in Table 5 show that the impact of financial planning on individuals' decisions to adopt CBDC will not be exacerbated by the previous knowledge of CBDC (*PrevKnow*), familiarity with statistics *(StatsKnow)* and personal risk attitude *(RiskTaking)*. Nourallah *et al*. (2024) argue that people with higher numerical skills have better financial capability, and the latter enables them to assess the benefits of using FinTech solutions, while Oehler *et al.* (2022) report a role for risk-taking in robo-advisors adoption.

While financial planning variables and individual factors such as prior knowledge of CBDCs, willingness to take financial risks and familiarity with statistical concepts each contribute significantly to the intent to adopt CBDCs, our results suggest that these effects operate independently rather than interactively. As shown in Table 2, prior CBDC knowledge and risk-taking propensity are statistically significant predictors when included as standalone control variables. However, the interaction terms between these factors and financial planning measures do not reach statistical significance. This indicates that although individuals who are more financially literate, more informed about CBDCs or more comfortable with risk are generally more inclined toward adoption, these characteristics do not amplify the effect of financial planning on CBDC adoption intent. In other words, prior knowledge, statistical proficiency or risk tolerance does not condition the relationship between financial planning and adoption interest. These findings underscore the importance of these factors as independent influences but suggest limited evidence of synergy between them in shaping adoption behavior. Future research could examine whether such interaction effects emerge in different contexts, populations or with alternative measures of planning and cognition.

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Table 5. Additional tests I

	Previous knowledge of CBDC		Perceived statistical knowledge		Personal risk attitude	
	(1)	(2)	(3)	(4)	(5)	(6)
PrevKnowDummy	1.045***	0.844***	1.235***	1.172***	1.232***	1.168***
	(0.402)	(0.316)	(0.218)	(0.221)	(0.217)	(0.222)
FinPlan1 * PrevKnow (Dummy)	0.255					
	(0.466)					
FinPlan2 * PrevKnow (Dummy)		0.627				
		(0.431)				
StatsKnow	−0.071	−0.085	−0.236*	−0.037	−0.072	−0.083
	(0.100)	(0.102)	(0.142)	(0.127)	(0.100)	(0.102)
FinPlan1 * StatsKnow (Dummy)			0.573			
			(0.351)			
FinPlan2 * StatsKnow (Dummy)				−0.225		
				(0.361)		
RiskTaking	0.925***	0.976***	0.932***	1.002***	0.773*	0.988***
	(0.226)	(0.231)	(0.227)	(0.229)	(0.436)	(0.318)
FinPlan1 * RiskTaking					0.201	
					(0.493)	
FinPlan2 * RiskTaking						0.028
						(0.429)
FinPlan1	0.750***		0.637**		0.782***	
	(0.283)		(0.260)		(0.272)	
FinPlan2		0.885***		1.206***		1.101***
		(0.256)		(0.256)		(0.255)
Female	−0.329	−0.344	−0.337	−0.321	−0.330	−0.321
	(0.219)	(0.223)	(0.219)	(0.222)	(0.219)	(0.222)
Age	−0.500***	−0.476***	−0.507***	−0.487***	−0.499***	−0.487***
	(0.104)	(0.105)	(0.104)	(0.105)	(0.104)	(0.105)
Education	0.546***	0.545***	0.529***	0.529***	0.546***	0.534***
	(0.208)	(0.212)	(0.209)	(0.211)	(0.208)	(0.211)
Employment	0.501**	0.516**	0.487**	0.524**	0.505**	0.519**
	(0.221)	(0.214)	(0.210)	(0.213)	(0.209)	(0.213)
PreferredDevice	0.069	0.139	0.062	0.149	0.062	0.145
	(0.221)	(0.227)	(0.222)	(0.226)	(0.222)	(0.226)
Constant	−0.765	−0.745	−0.302	−0.996	−0.784	−0.840
	(0.594)	(0.595)	(0.661)	(0.642)	(0.594)	(0.599)
Observations	756	756	756	756	756	756

Note(s): ***, **, * denote significance at the 0.01, 0.05, and 0.10 levels (two-tailed), respectively
Source(s): Authors' own creation

Second, previous research shows a significant role of personal traits in addressing adoption behavior (e.g. Conlon *et al.*, 2024). To study any optional role of such characteristics in the context of CBDC, we follow Oehler *et al.* (2022) and use six questions related to the traits: *interested, active, determined, depressed, nervous* and *confused.* We present the results of the interaction effects of personal traits on financial planning (*FinPlan1 and FinPlan2*) in Table 6. Models (1)–(2) in Table 6 show that *interested* is only the trait that fosters the effect of financial planning on CBDC adoption.

Statistically significant coefficients do not exist for the interaction terms between *FinPlan1/FinPlan2* and the *Active, Depressed, Nervous, Determined* and *Confused* attributes in Model (5)–(12). The results indicate that financial planning influences the intent for CBDC adoption, independent of the psychological attribute. Except for the *interested* attribute, which

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Table 6. Additional tests II

	Interested (1)	(2)	Active (3)	(4)	Determined (5)	(6)	Depressed (7)	(8)	Nervous (9)	(10)	Confused (11)	(12)
PersonalityAttribute	0.174	0.709**	0.398	0.353	0.471	0.253	0.433	−0.770	−0.220	−0.636	0.531	−0.739
X	(0.389)	(0.304)	(0.404)	(0.305)	(0.398)	(0.305)	(0.563)	(0.580)	(0.679)	(0.602)	(0.600)	(0.608)
FinPlan (1 or 2) *Pers	0.905**	0.184	0.025	0.179	−0.320	0.036	−0.605	1.131	0.344	0.813	−0.965	1.082
_Att	(0.458)	(0.418)	(0.465)	(0.412)	(0.461)	(0.415)	(0.672)	(0.711)	(0.761)	(0.714)	(0.741)	(0.807)
	(0.236)	(0.273)	(0.226)	(0.267)	(0.222)	(0.263)	(0.326)	(0.374)	(0.318)	(0.355)	(0.394)	(0.500)
FinPlan1	0.345		0.789***		0.949***		0.920***		0.807***		0.938***	
	(0.317)		(0.295)		(0.296)		(0.245)		(0.240)		(0.242)	
FinPlan2		0.975***		1.013***		1.088***		0.995***		1.032***		1.027***
		(0.310)		(0.277)		(0.273)		(0.217)		(0.219)		(0.214)
Female	−0.283	−0.279	−0.319	−0.306	−0.304	−0.289	−0.327	−0.336	−0.330	−0.322	−0.313	−0.325
	(0.222)	(0.225)	(0.219)	(0.223)	(0.220)	(0.224)	(0.219)	(0.223)	(0.219)	(0.223)	(0.219)	(0.223)
Age	−0.501***	−0.479***	−0.494***	−0.479***	−0.501***	−0.484***	−0.504***	−0.485***	−0.497***	−0.495***	−0.506***	−0.499***
	(0.105)	(0.106)	(0.104)	(0.106)	(0.104)	(0.106)	(0.104)	(0.105)	(0.106)	(0.107)	(0.106)	(0.107)
Education	0.481***	0.498**	0.503**	0.483**	0.533**	0.515**	0.537**	0.537**	0.553***	0.554***	0.533**	0.547***
	(0.213)	(0.214)	(0.210)	(0.213)	(0.209)	(0.212)	(0.209)	(0.211)	(0.208)	(0.212)	(0.208)	(0.212)
Employment	0.494**	0.528**	0.460**	0.474**	0.491**	0.501**	0.507**	0.512**	0.512**	0.505**	0.532**	0.481**
	(0.214)	(0.219)	(0.211)	(0.215)	(0.210)	(0.214)	(0.209)	(0.213)	(0.210)	(0.214)	(0.210)	(0.216)
PreferredDevice	−0.006	0.110	0.093	0.171	0.061	0.135	0.078	0.134	0.067	0.127	0.039	0.144
	(0.227)	(0.230)	(0.222)	(0.227)	(0.222)	(0.226)	(0.221)	(0.227)	(0.221)	(0.227)	(0.223)	(0.227)
PrevKnowDummy	1.135***	1.085***	1.214***	1148***	1.216***	1.1555***	1.254***	1.168***	1.217***	1.158***	1.265***	1.175***
	(0.223)	(0.226)	(0.217)	(0.222)	(0.217)	(0.222)	(0.219)	(0.222)	(0.218)	(0.222)	(0.219)	(0.222)
StatsKnow	−0.135	−0.145	−0.091	−0.103	−0.082	−0.092	−0.071	−0.102	−0.076	−0.089	−0.071	−0.092
	(0.104)	(0.105)	(0.101)	(0.103)	(0.100)	(0.102)	(0.100)	(0.103)	(0.101)	(0.103)	(0.100)	(0.103)
RiskTaking	0.867***	0.939***	0.851***	0.923***	0.918***	0.988***	0.928***	1.005***	0.923***	0.996***	0.946***	0.997***
	(0.231)	(0.234)	(0.229)	(0.233)	(0.226)	(0.230)	(0.225)	(0.230)	(0.226)	(0.229)	(0.226)	(0.231)
Constant	−0.602	−0.958	−0.879	−0.896	−0.956	−0.912	−0.890	−0.712	−0.806	−0.738	−0.890	−0.709
	(0.614)	(0.608)	(0.602)	(0.603)	(0.598)	(0.598)	(0.588)	(0.599)	(0.591)	(0.602)	(0.591)	(0.602)
Observations	756	756	756	756	756	756	756	756	756	756	756	756

Note(s): ***, **, * denote significance at the 0.01, 0.05, and 0.10 levels (two-tailed), respectively

Source(s): Authors' own creation

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may indicate that individuals who plan for their finances and who identify as interested are even more likely to show intent to adopt CBDC than individuals who are engaged in personal financial planning alone, all other psychological variables do not display a direct or indirect effect on the intent to adopt CBDCs. In other words, individuals who are identified as interested and engage in financial planning are more likely to indicate intent for CBDC adoption, and the relationship is moderated by the psychological attribute. The impact of financial planning on CBDC adoption depends on the level of the *interested* attribute; specifically, the impact of financial planning on adoption intent increases when an individual identifies as interested. Although beyond the scope of this paper, the preliminary findings point to a potential cross-sectional difference that needs more research. The psychological differences between consumers and how they impact the decision to adopt CBDC merit further study.

5. Discussion and implications

The introduction of CBDCs represents a significant development in the evolution of monetary systems, comparable to earlier technological transformations in the financial sector. Attention has shifted from feasibility to questions of timing and implementation. For example, Nigeria has launched its CBDC, while other countries continue to evaluate when and how to proceed. Key design questions remain, such as whether CBDCs should be issued through digital wallets, tokens or other formats. Prior research has drawn on theoretical frameworks from information systems and management, such as the UTAUT, which focuses on adoption factors including security, privacy and trust (Solberg and Benhayoun, 2022). To expand on these perspectives, this study incorporates self-control theory to examine additional behavioral factors influencing individuals' willingness to adopt CBDCs.

We analyze primary survey data from two advanced economies, Sweden and the United Kingdom, both of which are actively exploring CBDC frameworks and offer distinct institutional and economic contexts. Sweden has a highly digitized payment infrastructure and low cash usage, while the United Kingdom exhibits a more moderate pace of digital payment adoption and a different regulatory environment. By selecting these countries, we examine how macro-level conditions such as financial regulation, central bank communication and institutional trust shape individual-level adoption intent. This comparative approach enhances understanding of the context-dependence of behavioral drivers of CBDC uptake.

Our findings reveal a statistically significant association between personal financial planning and the intent to adopt CBDCs. Individuals who engage in activities such as budgeting, tracking expenses or setting long-term goals are more likely to express interest in CBDC adoption. These behaviors, reflecting financial literacy and forward-looking decision-making, align with openness to innovative financial technologies. While not establishing causality, the results offer insight into which individuals are most likely to support CBDC initiatives. From a policy perspective, fostering financial literacy and planning may help build the behavioral foundation necessary for adopting new forms of digital money.

The results further highlight the role of demographic characteristics in shaping the likelihood of CBDC adoption, supporting findings from studies such as Alfar *et al.* (2023). Older individuals are less likely to express interest in CBDCs, while higher education and full-time employment are positively associated with adoption intent. These patterns align with broader technology adoption trends, where younger, more educated and economically active individuals are more receptive to digital innovations. Psychological and perceptual factors also play a significant role. As with prior research on FinTech, our results confirm the importance of perceived security, safety and institutional trust. Individuals who believe that CBDCs are secure and that their personal data will be protected are significantly more likely to adopt the technology. Higher financial risk tolerance is also associated with increased adoption intent. This finding supports Liu *et al.* (2020) and Majid *et al.* (2022), who show that individuals more comfortable with financial risk are more likely to engage with FinTech platforms and digital

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currencies. Overall, these results emphasize that CBDC adoption is shaped not only by institutional trust and system design but also by demographic and attitudinal differences across individuals.

Our study offers two key policy recommendations. First, it is essential to effectively disseminate information to support CBDC integration into the financial system. Well-targeted communication can increase adoption and broaden the user base. Information should be provided in varied formats to reach diverse audiences and promote inclusion. This strategy can also advance gender equality, supporting the United Nations Sustainable Development Goal 5 by encouraging greater female engagement with CBDCs. Information should also be shared through channels familiar to senior citizens, including newspapers, radio and community organizations.

Second, we hypothesize that inflation heightens interest in financial planning. Following Keister and Sanches (2023), we argue that integrating financial planning tools into CBDC platforms can enhance financial literacy and support adoption at low cost. This is particularly relevant in countries where CBDCs may be deployed as digital wallets. By helping individuals manage key financial challenges, these tools can promote financial resilience and well-being. These outcomes support the United Nations Sustainable Development Goal 3, which focuses on improving well-being and inclusive access to financial innovations.

These findings suggest that policymakers and central banks aiming to promote CBDC adoption should prioritize strong security and privacy assurances to build user confidence. Additional mediation channels could help explain the relationship between financial planning and CBDC adoption. For example, perceived usefulness may be important, as individuals engaged in financial planning could view programmable payments as especially beneficial. Perceived ease of use may also influence adoption, with users more likely to adopt if they find CBDCs intuitive and accessible. Social influence may further shape behavior, as financially savvy individuals could be more inclined to adopt CBDCs when observing peers using them or receiving recommendations from trusted sources such as financial advisors or employers. Future research should examine these factors to develop a more comprehensive framework for understanding CBDC adoption.

6. Limitations and future research

Our study has limitations. As we used cross-sectional data, future research should employ panel data analyses for more comprehensive insights. Another limitation is the potential impact of unobserved variables on the relationship between the intent of CBDC adoption and financial planning. For example, although we do not know the area of the country participants live in, access to financial infrastructure and intent to adopt CBDC may be dependent on their allocation. The concern is alleviated by the relatively well-developed infrastructure in both countries surveyed. Respondents may already be using a financial planning tool offered by some other fintech app. However, we would capture this use in the existing questions. Where the financial planning comes from is less important than the fact that it is happening. Additionally, the relationship between the adoption of CBDC and financial planning may be more nuanced. Nevertheless, increased financial planning capabilities and interest may be a stronger predictor of the intention for CBDC adoption, a relationship that needs to be explored in the future.

We acknowledge that, although our study employs survey instruments and Likert-scale measures grounded in prior research on technology adoption, particularly in domains such as robo-advisory services, there remain important limitations regarding measurement validity. Specifically, while these instruments have been previously validated for similar contexts, they may not fully capture the reliability and construct validity of the latent psychological constructs central to our framework, such as perceived trust, security and financial planning orientation. Our reliance on proxy indicators introduces the possibility of measurement error and response bias, which could attenuate the observed relationships or obscure more nuanced

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effects. Moreover, the cross-sectional nature of our survey data limits our ability to conduct advanced validation procedures such as confirmatory factor analysis or test–retest reliability assessments. We recognize that future iterations of this research would benefit from a more psychometrically robust approach, incorporating validated multi-item scales, pilot testing and formal reliability diagnostics. Strengthening the measurement properties of these constructs will enhance the precision and generalizability of findings and allow for deeper insights into the mechanisms underlying CBDC adoption behavior.

We also recognize the potential for endogeneity in our analysis, particularly due to omitted variable bias stemming from factors that were either unavailable during survey design or only identified after data collection. While it is not feasible to retrospectively modify the current survey instrument, this limitation can be improved on future iterations of the study, especially as we expand to additional countries, by incorporating a broader set of theoretically relevant controls. Although observational studies inherently face challenges related to endogeneity, we have taken care to implement widely accepted empirical strategies that align with best practices in literature. Within the limitations of the available data, we believe our approach provides credible and meaningful insights. Future research will aim to strengthen causal inference by incorporating more rigorous identification strategies, when applicable.

Personal traits is another promising area for financial services research. We could only assess these traits through self-report questionnaires. Future research could explore other methods, such as experimental studies. Moreover, future research should consider the recent arguments (Estelami and Estelami, 2024; Nourallah *et al*., 2023) regarding the remarkable role of cognitive skills and investigate the variability among individuals in relying on CBDC due to their cognitive styles.

About the authors

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Acknowledgments

Mustafa Nourallah would like to acknowledge the Centre for Research on Economic Relations (CER) at Mid Sweden University and the College of Commerce and Business Administration at Dhofar University for their assistance and support.

(The Appendix follows overleaf)

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Appendix

Table A1. Definition of variables

Variable	Description	Source
CBDC_Adoption	Likert scale from 1 (Strongly disagree) to 5 (Strongly agree)	
CBDC_Adoption (Dummy)	=1 if the respondent answered 4 (agree) or 5 (strongly agree) and 0, otherwise	
Gender	=1 if the answer is 2 (Female) and 0 otherwise	
Education	=1 if the answer is 5 (bachelor's or master's Degree) and 0 otherwise	
%IncomeSaved	=1 if the answer is 5 (at least 20%) and 0 otherwise	
Employment status	=1 if the answer is 1 (Employed full-time) and zero otherwise	
PreferredDevice	=1 if the answer is 1 (mobile app), and zero otherwise	
CBDC_Adoption	=1 if the respondent intends to use CBDC, and 0 otherwise	
Prior CBDC knowledge	=1 if the respondent has heard of CBDCs, and zero otherwise	
Security	Likert scale from 1 (Strongly disagree) to 5 (Strongly agree)	Nourallah (2023)
Security	=1 if the respondent answered 4 (agree) or 5 (strongly agree) and 0, otherwise	Adopted from Nourallah (2023)
Safety	Likert scale from 1 (Strongly disagree) to 5 (Strongly agree)	Nourallah (2023)
Safety	=1 if the respondent answered 4 (agree) or 5 (strongly agree) and 0, otherwise	Adopted from Nourallah (2023)
Trust	Likert scale from 1 (Strongly disagree) to 5 (Strongly agree)	Nourallah (2023)
Trust	=1 if the respondent answered 4 (agree) or 5 (strongly agree) and 0, otherwise	Adopted from Nourallah (2023)
StatsKnow	Likert scale from 1 (Insufficient) to 5 (Very good)	Oehler *et al*. (2022)
StatsKnow	=1 if the respondent indicated statistical knowledge as 4 (good) or 5 (very good) and 0 otherwise	Adopted from Oehler *et al*. (2022)
RiskTaking	Likert scale from 1 (Not willing to take risk at all) to 5(Very willing to take risk)	Oehler *et al*. (2022)
RiskTaking	=1 if the respondent indicated a 4 (somewhat willing to take risk) or 5 (very willing to take risk) and 0 otherwise	Adopted from Oehler *et al*. (2022)
FinPlan 1	=1 if the respondent indicated a 4 (agree) or 5 (strongly agree) and 0 otherwise	Nourallah *et al*. (2024)
FinPlan 1	Likert scale from 1 (Strongly Disagree) to 5(Strongly agree)	Nourallah *et al*. (2024)
FinPlan 2	=1 if the respondent indicated a 4 (agree) or 5 (strongly agree) and 0 otherwise	Adopted from Nourallah *et al*. (2024)

Notes

1. For the purposes of this academic paper, generative AI was employed solely for editing and improving clarity, ensuring coherence and precision in the language. It was not utilized for content creation or the development of original ideas.
2. Based on the Bloomberg report issued in January 2024. https://www.bloomberg.com/news/articles/2024-01-25/britain-starts-design-work-on-a-digital-version-of-the-pound
3. The survey in its entirety is available upon request. Please email the author for a copy.

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