International Science Journal of Management, Economics & Finance
2025; 4(3): 60-74
https://isg-journal.com/isjmef/
doi: 10.46299/j.isjmef.20250403.08
ISSN: 2720-6394

INTERNATIONAL SCIENCE GROUP

The role and significance of behavioral finance tools in choosing the optimal financial decision in Kazakhstan

Li Ziwei
EMBA, Al-Farabi Kazakh National University, Almaty, Kazakhstan

Arzigul Nizamdinova
Senior Lecturer at the Department of Finance and Accounting, Al-Farabi Kazakh National University, Almaty, Kazakhstan
ORCID 0000-0003-3507-5216

Abstract: This study examines the role of behavioral finance tools in shaping financial decision-making in Kazakhstan. While traditional finance theories assume rational behavior, real-world decisions are often influenced by cognitive biases such as overconfidence, loss aversion, and present bias. Using a qualitative approach and secondary data, the research explores how tools like nudges, framing, and default settings can address suboptimal financial behaviors in areas such as investing, retirement saving, and borrowing. The analysis highlights practical cases from Kazakhstan, including low stock market participation, the rise of cryptocurrency investing, and widespread consumer debt. Findings suggest that behavioral interventions can guide individuals toward more stable and informed financial decisions, but their effectiveness depends on cultural context and policy design. The study emphasizes the need for context-specific behavioral tools and offers policy recommendations to enhance financial well-being in Kazakhstan.

Keywords: Behavioral finance, financial decision-making, cognitive biases, nudges, Kazakhstan, financial literacy, investment behavior, consumer credit, retirement savings, choice architecture.

1. Introduction

Behavioral finance is the study of how psychological influences affect the financial behaviors of individuals and institutions. It diverges from classical financial theories that assume rational decision-making and instead highlights how emotions, cognitive errors, and social factors shape real-world financial decisions. The increasing complexity of financial markets, coupled with widespread access to credit and investment platforms, makes it critical to understand the behavioral aspects of financial decisions.

In Kazakhstan, the relevance of behavioral finance is underscored by widespread financial illiteracy, low participation in long-term savings plans, rising personal debt, and speculative behavior in emerging assets like cryptocurrency. Traditional financial models such as Expected Utility Theory and the Efficient Market Hypothesis assume individuals act rationally to maximize utility or that markets reflect all information efficiently. However, these models fail to capture the often-irrational behaviors observed in the Kazakhstani population, such as herd behavior in crypto investing or reluctance to participate in the formal equity market.

Research questions What are the behavioral biases affecting financial decisions in Kazakhstan? How do behavioral tools such as nudges, framing, and choice architecture influence decision-making? Can these tools lead to more optimal financial outcomes? The main objective is to analyze how behavioral finance tools can correct or mitigate irrational financial behavior in Kazakhstan.

The study is limited to qualitative analysis based on secondary data and documented case studies. While behavioral patterns are universal, this research narrows the scope to Kazakhstan to provide culturally and economically specific insights.

2. Object and subject of research

The object of the research is financial decision-making behavior of individuals in Kazakhstan. The subject of the research is the application and effectiveness of behavioral finance tools (e.g., nudges, framing, and choice architecture) in influencing and improving financial decisions among Kazakhstani individuals.

3. Target of research

The target of the research is to analyze how behavioral finance tools can correct or mitigate irrational financial behavior and lead to more optimal financial outcomes in Kazakhstan.

4. Literature analysis

This section reviews existing literature on behavioral biases in financial decision-making and the use of behavioral tools to improve decisions. The focus is on empirical evidence and studies relevant to the themes of this paper, with a particular look at findings in Kazakhstan or comparable settings. We also identify gaps in the literature that the current study aims to address.

Empirical Evidence of Behavioral Biases: A substantial body of research worldwide has documented that investors and consumers exhibit predictable biases. Barber and Odean's series of studies, for example, provided clear evidence of overconfidence among retail stock investors – finding that those who traded stocks most actively earned significantly lower net returns, and that male investors underperformed female investors due to excessive trading. This aligns with the idea that overconfidence (especially among men) leads to too much trading and thus poorer performance, a robust result that has been confirmed in various markets. Similarly, studies on the disposition effect (Shefrin & Statman, 1985; Odean, 1998) show that investors tend to hold losing investments too long and sell winners too early, consistent with loss aversion and mental accounting of gains vs. losses. These behaviors are suboptimal – for instance, Odean (1998) found that the stocks individual investors sold (winners) subsequently outperformed the ones they held on to (losers), indicating a decision mistake.

Beyond trading, behavioral biases affect many financial domains:

- Investment Choices and Portfolios: Investors often fail to diversify properly (home bias, familiarity bias), chase past performance (representativeness heuristic thinking that past winners will keep winning), or exhibit herd behavior, especially in times of uncertainty. For example, herding can lead to asset bubbles in emerging markets; a study on investor behavior in frontier markets noted that psychological factors like herding and overconfidence can significantly influence trading volumes and volatility. In emerging markets somewhat analogous to Kazakhstan, research has shown demographic factors (age, gender, wealth) also correlate with susceptibility to biases, suggesting that certain investor groups (e.g., younger or less experienced investors) may be more prone to heuristic-driven decisions.
- Savings and Retirement Decisions: Many individuals under-save for retirement due to present bias (placing disproportionate weight on immediate consumption over future needs) and inertia. Studies in behavioral economics have found that tools like automatic enrollment in pension plans or default contribution escalations dramatically increase participation and contribution rates (Thaler & Benartzi's "Save More Tomorrow" program is an example). While these specific interventions have been primarily studied in the US or Western Europe, their principles are globally relevant. In Sweden, research on the national pension scheme found that once default fund options ("nudges") were set,

the majority stuck to those defaults, indicating status quo bias and inertia but also the power of a well-chosen default. There is evidence that these behaviors exist in Kazakhstan as well – for instance, only a small minority of Kazakhstani employees actively choose to contribute to voluntary private pension plans when not required, indicating inertia and possibly low awareness (to be discussed in Section 5).

- Consumer Credit and Borrowing: Behavioral biases like over-optimism (underestimating the likelihood of future financial distress), lack of self-control, and framing by lenders can lead consumers to take on more debt than is optimal or to choose high-cost credit options. A World Bank assessment noted that in Kazakhstan, digital consumer lending platforms often exploit behavioral biases by emphasizing easy access and quick approval, which can lure consumers into borrowing without full consideration of terms. Consumers might focus on the immediate loan availability and low initial hurdles (salience of getting cash now) and downplay the long-term cost or risk, a manifestation of present bias and myopia. Indeed, until regulatory changes in 2019, many Kazakhstani borrowers accumulated multiple high-interest loans, suggesting that behavioral factors (and perhaps aggressive marketing) led to over-borrowing.

- Financial Literacy and Biases: Several studies have explored the relationship between financial literacy and susceptibility to biases. In general, higher financial literacy is associated with better financial decisions, though not a complete inoculation against biases. A recent study on Kazakhstan by Bayakhmetova et al. (2023) found a significant positive correlation ($r > 0.75$) between individuals' financial literacy levels and the efficiency of their investment decision-making. In their survey of Kazakhstani adults, those with greater knowledge of finance were more likely to make sound investment decisions (such as having clear investment goals, understanding risk, avoiding frauds), whereas those with low literacy often made inefficient decisions or none at all. This supports the view that education can mitigate some biases – for example, an informed person might be less prone to fall for a get-rich-quick scheme or might better diversify their portfolio. However, the literature also notes limitations: biases can persist even among knowledgeable individuals. For instance, overconfidence might actually increase with some knowledge – an intermediate level of knowledge might embolden individuals to think they know more than they do (a Dunning-Kruger type effect). One study cited in a behavioral finance review indicated that overconfidence was correlated with investor sophistication to some extent (Gerth et al., 2021), implying that as people learn more, they must be cautious not to become too sure of their skill.

Behavioral Finance Tools and Interventions: The literature has identified and tested numerous tools grounded in behavioral science aimed at improving financial decision outcomes. Key among these are nudges, as popularized by Thaler and Sunstein (2008). Nudges are subtle changes in the choice architecture that encourage better choices without restricting freedom. Examples include default options (as in pension auto-enrollment), simplified decision interfaces, reminders, or setting desirable behavior as the path of least resistance. Empirical results have been very promising in certain areas: automatic enrollment and default contribution rates in retirement plans massively increased participation across various countries (e.g., the UK saw participation in occupational pensions jump after introducing auto-enrollment). In personal finance apps, prompts and personalized messages have been used to encourage budgeting or saving. A study on "mental accounting" interventions showed that labeling savings accounts for specific goals can increase savings for those goals, effectively leveraging people's mental accounting tendency in a positive way.

Another tool is framing and disclosure improvements. Research has shown that re-framing how information is presented can mitigate biases. For instance, credit card statements that clearly show how long it would take to pay off a balance with only minimum payments (versus highlighting just the minimum due) can nudge consumers to pay more sooner, reducing interest costs – essentially reframing the decision from "pay a small amount now" to "this is the consequence if you do so." In Kazakhstan, the financial regulator and institutions have started to consider improved disclosure to combat biases: after 2019, regulations required lenders to more prominently display the annual percentage rate (APR) and total cost of loans to borrowers, an attempt to prevent framing bias where borrowers might focus only on monthly payment affordability and ignore the interest rate.

Behavioral Finance in Kazakhstan – Studies and Cases: The literature specifically focusing on Kazakhstan is relatively limited but growing. Some notable contributions include:

- Financial Literacy and Investment Behavior: Bayakhmetova et al. (2023) as mentioned, conducted a case study of Kazakhstan and confirmed international findings that financial literacy is linked to better financial behaviors. They noted, however, that certain age groups in Kazakhstan behave differently: younger people (18–29) had the lowest correlation between literacy and decision efficiency, possibly because even if they know what is right, they may be driven by other influences (e.g., peer behavior, trendy investments). Older groups showed higher correlation, suggesting experience and knowledge align more in decision-making. They also pointed out that very few respondents (only 30% of young adults) had a non-state pension plan, indicating a gap in long-term financial planning.
- Consumer Finance and Behavioral Biases: A World Bank (2023) technical note on Kazakhstan's consumer lending market identified practices that take advantage of consumer behavior. For example, some loan products in Kazakhstan were being marketed with "teaser" low installments or bundled offers using anchoring and salience – quoting a low weekly payment to make it sound affordable (anchoring on a small number) but hiding the true cost in fine print. The report also mentions the need for "behavioral supervision," implying that regulators should monitor and curb business practices that exploit biases. It highlights that Kazakhstani consumers, like many others, can be prone to present bias (taking high-cost short-term loans without assessing future impact) and overestimating their repayment ability, leading to over-indebtedness.
- Public Perception and Financial Scams: A study on public perceptions of investment fraud in Kazakhstan (Turekulova et al., 2020) found that many Kazakhstani individuals struggle to distinguish between legitimate investment opportunities (like stock market investing) and fraudulent schemes (Amanzholova, 2021). This confusion and lack of trust discourage the public from investing in capital markets (Amanzholova, 2021). Essentially, past experiences with Ponzi schemes or the general unfamiliarity with stock investments have led to a bias where people equate "investing" with "risk of being scammed." This is a behavioral barrier (mistrust bias) that partially explains why participation in the local stock market and other formal investment channels is low in Kazakhstan. As literature from the post-Soviet context points out, the collapse of the USSR and subsequent loss of savings in the 1990s created a lasting mistrust in financial institutions. Many older Kazakhs remember losing their bank savings to hyperinflation or bank failures in the early 90s, which has led to cautious or cash-based financial behaviors. This is an example where historical context becomes a collective psychological bias affecting financial decisions.

Usefulness, Limitations, and Applications of Behavioral Tools: Overall, literature suggests behavioral finance tools can be very useful in nudging individuals toward optimal decisions, but they are not panacea. Nudges are typically low-cost and preserve freedom of choice, which makes them attractive. However, they must be well-designed for the context. One limitation noted is that what works in one culture or market may not directly translate to another due to differences in attitudes and institutional structures. For instance, auto-enrollment presumes a formal employment and pension system to plug into – in Kazakhstan, a significant portion of the workforce is self-employed or informally employed, so such nudges might miss a large population. Another consideration raised in literature (Sunstein, 2015) is the ethical aspect: nudges can be seen as paternalistic. Policymakers must balance helping individuals with respecting autonomy and ensuring transparency about these interventions.

A gap identified in the existing literature is specific case studies in emerging markets like Kazakhstan on how behavioral interventions have changed outcomes. Much evidence comes from Western economies; there is less documentation on local experiments or programs in Central Asia. The current study contributes by compiling and analyzing the instances we do see in Kazakhstan – for example, examining Kazakhstan's experience with debt relief and tightening of lending rules (which, while a policy measure, has behavioral reasoning behind it: to curb reckless borrowing driven

by biases), and by considering how global behavioral insights could apply to Kazakh-specific issues (like pension under-participation or low stock market involvement).

Critical Evaluation of Behavioral Tools: Scholars have also pointed out limitations of relying on behavioral tools. For one, education (a traditional tool to address biases by making people more informed) has mixed results. While financial education improves knowledge, some studies (e.g., Carpena et al., 2019 as cited in Gerth et al., 2021) find that education alone doesn't always translate to better long-term behavior (Gerth et al., 2021). People may learn concepts but still fall prey to emotional biases in the moment. Combining education with actionable interventions (like decision aids or default options) seems more effective (Gerth et al., 2021). Another limitation is that biases often interact – for example, an intervention to address one bias might be nullified by another bias. If you nudge someone to save (addressing present bias), overconfidence might lead them to simultaneously take on more risk in investment thinking they are now "doing well." Thus, an integrated approach is necessary.

Identified Gaps: As noted, a specific gap is the scarcity of localized behavioral research in Kazakhstan – which this paper addresses by focusing on Kazakhstan's case. Another gap is understanding policy-level behavioral applications in Kazakhstan: while many countries have established "nudge units" or behavioral insights teams for public policy, Kazakhstan is in early stages. The literature has yet to cover the effectiveness of any such initiatives in Kazakhstan extensively. Additionally, the literature often calls for more research on how cultural factors moderate behavioral biases. The current study, through its focus on one country, contributes by contextualizing behavioral finance in Kazakhstan's socio-economic environment, potentially laying groundwork for more nuanced future research (for example, future surveys could measure specific biases among Kazakhstani investors or experiments could test certain nudges in Kazakh banks).

In summary, the literature affirms that behavioral biases are real and impactful, and that various tools (nudges, framing, education, etc.) show promise in steering decisions toward optimal outcomes. There is strong empirical support globally, and emerging evidence locally in Kazakhstan, that these biases need to be considered to fully understand financial decision-making. The present study builds on this literature by examining concrete cases and data from Kazakhstan to illustrate these concepts in practice, and by synthesizing recommendations suited for Kazakhstan's unique context.

5. Research methods

This study uses a qualitative approach based on secondary data and case analysis. Sources include peer-reviewed journals, government and NGO reports, and media articles. No primary data is collected.

Behavioral finance tools analyzed include:

- Nudges: Default options, reminders, simplification
- Framing: Presentation of financial information
- Prompts: Encouraging goal-setting or action

Optimal financial decisions are defined as those that improve long-term financial stability, such as saving regularly, avoiding high-interest debt, and investing prudently. The study uses content analysis to identify behavioral patterns and compares outcomes before and after specific interventions.

In this section, we examine specific case studies and practical scenarios in Kazakhstan to illustrate the influence of behavioral finance tools (or the lack thereof) on financial decision-making. The analysis is organized around key domains: investment behavior, retirement savings, and consumer credit, which cover a broad range of financial decisions for individuals. For each domain, we discuss the observed behaviors (often suboptimal), analyze the role of behavioral biases, and evaluate interventions or tools that have been applied or could be applied to guide decisions toward optimal outcomes.

Investment Behavior in Kazakhstan

Case Study 1: Low Stock Market Participation and Impact of Trust – Kazakhstan's stock market (the KASE) has historically seen low participation from retail (individual) investors. Even as the economy grew, the culture of equity investing did not take strong root among the public. One reason, as identified by research, is the lingering mistrust and lack of familiarity with market investing. After the Soviet era, many citizens were unfamiliar with capitalist financial markets, and early experiences (like the loss of savings during the 90s or witnessing scams) created a cautious attitude. A study on get-rich-quick schemes in Kazakhstan highlights that the public often confuses legitimate stock investments with fraudulent schemes, which in turn discourages people from investing in the stock market (Amanzholova, 2021). The behavioral concept at play here is availability heuristic and fear – people have heard more stories about financial fraud or failure (often sensational in media) than success in the stock market, so those salient memories guide their decisions. The result is a suboptimal financial outcome: under-investment in productive assets. Many Kazakhstani savers prefer to keep money in bank deposits or cash (sometimes even U.S. dollars stored at home) rather than risk investing in stocks or mutual funds. While holding cash might feel "safe," in reality it often loses value to inflation and misses out on potential growth. Thus, an optimal decision from a rational perspective (for those with long-term horizons and tolerance) would be to invest a portion of savings in diversified assets including equities; however, the bias-induced mistrust leads to an overly conservative stance.

Behavioral tools or interventions: To address this, educational initiatives and improved investor protection are essential. The Kazakhstan Stock Exchange and financial authorities have started public awareness campaigns to distinguish investing from gambling or fraud. For example, seminars explaining how stock investing works and highlighting regulatory oversight can slowly rebuild trust. Another needed tool is a simplified investment platform with nudges for novices – e.g., a default diversified fund that new investors get enrolled into when they open an investment account (similar to how a default works in pensions). If people are given a simple, low-cost default investment option (like an index fund) when they decide to save, it could overcome inertia and fear of choosing wrong. Additionally, endorsement by trusted institutions (like the state offering a people's IPO as was attempted in 2012, where Kazakhstani citizens were invited to buy shares of national companies at IPO) can frame investing as safe and normative. The 2012 "People's IPO" program itself met with mixed results (many still hesitated, possibly due to limited understanding and some distrust), suggesting that trust-building is gradual. A potential behavioral insight here is to use social proof: showing that more and more Kazakhs (especially from similar social circles) are investing successfully might encourage others (herd behavior leveraged positively). To date, one can argue this domain in Kazakhstan is still lacking strong behavioral interventions, which is a gap that needs addressing.

Case Study 2: Cryptocurrency Boom among Young Investors – In the last few years, Kazakhstan has seen a surge in interest in cryptocurrencies. By 2024, an estimated 8% of Kazakhstan's population owned some form of cryptocurrency, double the share from 2022. The majority of these crypto investors are young (83% were aged 18–34) and predominantly middle-income earners. This trend can be analyzed through a behavioral lens: it exhibits herd behavior and overconfidence/optimism bias. During the global crypto boom of 2020–2021, stories of quick riches were common. Young people, often more tech-savvy, were influenced by peer behavior and the fear of missing out (FOMO), a powerful emotional driver. The allure of extraordinarily high returns from Bitcoin or other coins overshadowed the high volatility and risk (an example of optimism bias, assuming one will be on the winning side, and perhaps availability bias, as success stories were more broadcast than stories of loss). Even as a "crypto winter" set in globally in 2022, Kazakh investors' love for Bitcoin remained relatively undimmed, indicating a degree of belief perseverance – once convinced, they downplayed new negative information.

From an optimal decision standpoint, an allocation to such a high-risk asset should be cautious and only a small portion of a diversified portfolio for those who understand the risk. However,

anecdotal evidence suggests some individuals in Kazakhstan poured significant savings into crypto or engaged in mining investments without fully grasping the risks (some even took loans to invest – a clearly suboptimal and risky decision).

Behavioral tools or interventions: One approach to mitigate reckless speculation is improving financial literacy specifically around new assets, ensuring potential investors understand volatility and the concept of risk-adjusted returns. The National Bank of Kazakhstan and AIFC (Astana International Financial Centre) have started issuing warnings and guidelines about crypto. Another tool is implementing friction or cooling-off periods for speculative investments – for instance, a platform could ask users to complete a brief risk quiz or wait 24 hours after initiating a large crypto purchase, to inject some System 2 thinking into what is often a System 1 impulsive act. Additionally, regulators can use defaults in the sense of guiding people to safer options first: e.g., making less risky, regulated investment products more accessible and the "default" suggestion when someone has money to invest (so that crypto appears as a second step only after basics are covered). This case also shows an interesting interplay: while behavioral finance often tries to correct biases, here we see biases leading to action (investing in crypto) whereas the inertia or conservatism bias kept many away from stocks. It suggests that when a new asset class appears exciting and narrative-rich, it can overcome inertia, but possibly not in a balanced way. The lesson for policymakers is to provide balanced framing – neither outright discouraging innovation (which might drive it underground) nor allowing irrational exuberance. For example, highlighting the loss possibilities (not just gains) in any marketing or news about crypto can activate loss aversion to counter over-optimism.

Case Study 3: Personality Traits and Investor Behavior (Survey Evidence) – While not Kazakhstan-specific, a multi-country study including a sample from Kazakhstan examined how personality traits correlate with investment intentions. It found that traits like extraversion and conscientiousness were positively linked to investment activity, whereas agreeableness had a slight negative effect (possibly because very agreeable people avoid the conflict or risk associated with tough financial choices). This highlights that behavioral biases do not operate in isolation but interact with individual differences. For instance, an overconfident extrovert might be especially prone to frequent trading or following hot tips, whereas an anxious, neurotic person might exhibit loss aversion more strongly and avoid investing altogether. While the scope of this study is limited to noting such findings, it suggests that any behavioral interventions may need tailoring. A bold nudge that works for one group might backfire for another. In Kazakhstan's case, young, confident investors might need nudges that encourage prudence (like clear feedback and data on their trading performance vs. a passive benchmark to confront overconfidence), whereas very risk-averse individuals might need encouragement and guarantees to even participate (like capital-protected products or government guarantees to build trust).

Retirement Savings and Pension Decisions

Context: Kazakhstan's pension system has a mandatory component (workers contribute to a national pension fund system), but voluntary retirement savings and supplementary pensions are very limited. Many citizens rely primarily on the state pension and do not have substantial personal retirement investments. This is concerning given an optimal scenario would have individuals saving sufficiently to maintain their living standards in old age. Behavioral factors like myopia (short-sightedness), procrastination, and reliance on the status quo contribute to under-saving.

Case Study 4: Non-state Pension Plan Participation – A revealing statistic from a survey: only about 30% of Kazakhs aged 18–29 reported having any non-state (private) pension savings plan, and even among older groups (30–59), it was just 37%. This means the majority are not making voluntary provisions beyond the mandatory system. The mandatory system itself has faced challenges (for example, the unification of pension funds into a single state-run fund in 2013 was meant to improve management, but it also arguably reduced competition and innovation in pension products). The low participation is classic status quo bias – if people are not automatically enrolled or prompted, many will simply not take action. Also, a lack of immediate reward for saving (the benefit is decades away)

makes it susceptible to present bias: people prefer money in hand now over setting it aside for a distant future.

Behavioral tools: As seen internationally, auto-enrollment is the key nudge for retirement savings. Kazakhstan could consider introducing auto-enrollment for voluntary employer-sponsored pension plans (if such plans are developed), where employees are by default contributing say 5% extra to a private pension unless they opt out. Given human tendencies, opt-out rates might be low, dramatically increasing participation. Another tool is matching contributions or bonuses framed attractively – for example, a government match or tax incentive for voluntary pension contributions can be framed as "free money" to tap into people's aversion to missing out on a gain. The UK's experience suggests that presenting the pension contribution as the default and highlighting the match ("if you opt out, you lose the employer match") leverages loss aversion (nobody wants to lose an employer's free 5% match). In Kazakhstan's current system, tax deductions exist for voluntary contributions, but awareness is low and it's not tangible to many; a direct match might be more salient.

Additionally, simplifying choices is critical. If one has to choose from many pension funds or investment options, it can lead to choice overload and inaction. When Sweden reformed its pension, it initially offered a wide array of fund choices and saw that many people stuck to the default anyway or made arbitrary choices. Over time, they have adjusted by offering a well-diversified default fund. Kazakhstan could similarly ensure that the default in the mandatory system is well-managed (which it tries, via the unified fund) and, for any supplementary system, offer a clear default. The framing of information in annual pension statements can also act as a behavioral tool: showing people not just a lump sum accrued but what income that might translate to in retirement, and whether they are on track or not, can spur action by making the future consequences vivid.

Case Study 5: Withdrawal of Pension Assets and Immediate Bias – In 2021, Kazakhstan implemented a policy allowing citizens to withdraw part of their pension assets early to use for housing or medical treatment (if their savings exceeded certain thresholds). This was a popular measure with hundreds of thousands rushing to withdraw funds. While it had valid economic rationale (to improve living conditions), from a behavioral perspective it was interesting: given the option, many preferred an immediate tangible benefit (owning a home or funding needs now) over letting that money grow for retirement. This underscores hyperbolic discounting – the tendency to heavily discount future benefits for a smaller near-term benefit. An optimal lifetime financial plan might suggest not draining retirement funds in mid-life, but the policy's uptake shows people's preference for present rewards.

This case is more about how policy design needs to consider behavior: if such early access is allowed, it may need complementary policies (like ensuring those who withdraw still contribute more later, or financial counseling to those who withdraw about adjusting their future plans). There is no one-size-fits-all answer, but it reveals a tension: people might say they want secure retirement, but when given a choice, many will deviate for short-term reasons.

Consumer Credit and Borrowing Decisions

Case Study 6: Consumer Lending Boom and Over-Indebtedness – In the late 2010s, Kazakhstan experienced a boom in unsecured consumer lending. From 2019 to 2023, consumer lending by banks and microfinance organizations more than doubled. The proliferation of quick loans, including "buy now, pay later" schemes, led to many households taking on multiple loans beyond their repayment capacity. By early 2019, before regulatory intervention, it was noted that a significant number of borrowers had debt-service-to-income (DSTI) ratios exceeding 50% (World Bank, 2024), meaning more than half of their income went to debt payments – a level considered unsustainable.

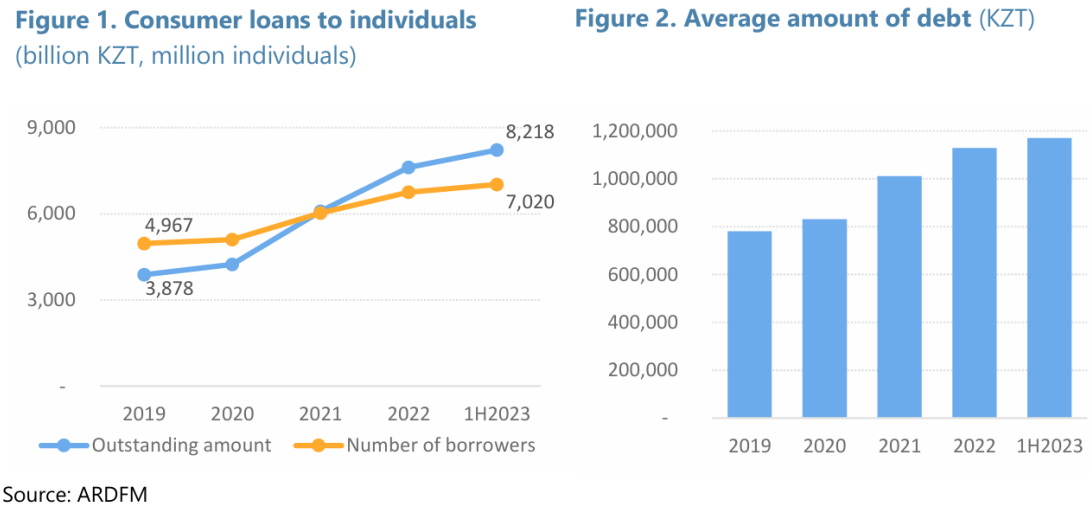

Figure 1 & 2. Growth in consumer loan volumes and average debt per individual in Kazakhstan (2019–2023).

Source: World Bank, 2024.

Behavioral analysis: Lenders often market loans emphasizing speed and ease, tapping into consumers' desire for instant gratification. The process to get a loan became so frictionless (some fintech apps approved loans in minutes) that it removed the natural pauses for deliberation. This ease exploits impulse behavior. Moreover, marketing messages sometimes framed loans not as debt but as enabling purchases ("Get your smartphone today, pay only 20,000 KZT a month!"), which can downplay the perception of borrowing. This framing leverages cognitive biases by anchoring on the affordable-sounding installment rather than the total cost, and by perhaps invoking social proof (everyone is getting the latest phone, why not you?). Consumers, especially with limited financial literacy, may not calculate that many such commitments accumulate to a financial burden. There is also an optimism or overconfidence bias where borrowers assume they will manage somehow, or that their income will grow, hence underestimating the risk of default or future hardship.

The outcome of these biases was clearly suboptimal for many: by mid-2019, the situation was severe enough that the government stepped in with a debt relief program. President Tokayev's decree in June 2019 resulted in the state paying off up to KZT 300,000 (≈ $790) per borrower for about 500,000 struggling borrowers and writing off all interest/penalties on overdue loans. This one-time "amnesty" covered the most vulnerable (large families, disabled, etc.) and acknowledged that many had fallen into a debt trap. Essentially, many individuals had not made optimal borrowing decisions; they over-borrowed relative to their capacity, often from multiple sources.

Behavioral tools and regulatory responses: Following the 2019 crisis, authorities implemented stricter creditworthiness assessments and limits: for example, a ban on lending to individuals whose income is below the minimum living wage (to prevent loans to those clearly unable to afford any), and a requirement for banks to calculate DSTI and adhere to maximum thresholds in granting loans. These are traditional regulatory tools, but they have a behavioral rationale – essentially acting as circuit breakers to what was an environment of unchecked borrowing driven by both provider incentives and consumer biases. Additionally, certain fees and penalties were capped or forgiven to prevent loans from ballooning unpayably.

From a behavioral perspective, one could argue for more nudges on the consumer side: for instance, requiring a standardized disclosure box on loan offers that uses visual cues (red flags) if the loan would put the borrower above a safe debt ratio, or even interactive borrowing calculators that show "Taking this loan means you will have X% of your income left after repayments, which is considered risky" as a prompt. Some countries have experimented with such disclosures, akin to health warnings, to engage the reflective thinking of borrowers. Also, promoting the use of cooling-

off periods (e.g., allowing a borrower to cancel a loan within 48 hours without penalty) can help those who impulsively borrow and then reconsider.

The uptake of buy now, pay later (BNPL) in Kazakhstan also warrants mention – these offers (often zero-interest if paid in a few installments) exploit mental accounting; people treat the installment as separate small expenses and might take multiple BNPL deals not realizing the combined burden. Retailers effectively nudge sales through this. A potential counter-nudge could be personal finance apps aggregating all such installment obligations to show the user their total commitment.

Case Study 7: Microfinance and Payday Loans – The presence of microfinance institutions (MFIs) that give payday loans at very high interest rates (often to individuals who can't borrow from banks) is another area where behavioral issues are evident. In Kazakhstan, before recent regulations, some MFIs offered loans with effective annual rates in the triple digits, relying on urgent need and lack of comparison shopping by consumers. Often these are taken by people in financial distress or with lower financial literacy. Behavioral finance suggests that in desperate situations, immediate need trumps long-term considerations (a form of hot-cold empathy gap – when in urgent need, one underestimates how bad the future burden will feel). Efforts to regulate MFIs (such as interest caps, better disclosure, or requiring installment options rather than a lump sum due to rollovers) were implemented to protect consumers from the worst outcomes. The Financial Consumer Protection framework is being strengthened: e.g., as of 2020, Kazakhstan's law required all lending institutions to check a credit bureau and consider existing debts before issuing new ones – a systematic check that indirectly forces a bit of rational assessment into the process.

It's worth noting that not all behavioral interventions come from regulators – sometimes NGOs or employers step in. For example, some companies in Kazakhstan have started financial wellness programs for employees, offering counseling on managing debts and budgeting (a form of debiasing training, trying to counteract tendencies like overspending or borrowing for non-essentials).

Decision Outcomes With vs. Without Interventions: Summarizing across these cases:

- Without behavioral interventions, many individuals in Kazakhstan have made financial decisions that, in hindsight or by normative standards, were not optimal (e.g., not investing at all, or speculating too wildly; not saving for retirement, or cashing out savings early; borrowing beyond means). We've seen outcomes like low wealth accumulation, last-minute financial scramblers, or even default and bankruptcy.
- With appropriate interventions, improvements are observed. For instance, in countries that have implemented automatic pension enrollment, participation skyrocketed – if Kazakhstan pursues this, one would expect a similar outcome given human similarities. Where Kazakhstan did act – as in tightening lending rules post-2019 – there has been a tempering of the unsecured lending boom and potentially fewer new cases of extreme over-indebtedness (though the pandemic in 2020 complicated the picture with new income shocks). According to the World Bank, by 2021–22 the growth of the riskiest loans had slowed, suggesting the measures (along with the debt relief) helped reset behavior to an extent. However, there is evidence that in absence of alternatives, some consumers simply shifted to informal borrowing if formal was restricted (behavior finds a way, which is why complementary measures like financial literacy and affordable small-dollar credit alternatives are needed).
- The crypto case is ongoing: without any intervention during 2021, some people lost money in 2022's crash. If the lesson is learned and perhaps if authorities issue clearer guidance (they introduced licensing for crypto exchanges, which might weed out scams and ensure people at least use safer platforms), then future decisions might be more informed.
- How Behavioral Tools Assist or Hinder: In general, well-designed behavioral tools assist by aligning actual behavior with what would be financially optimal (or at least prudent). For instance:
- Assist: Auto-enrollment in savings removes the hurdle of procrastination. Framing insurance as avoiding a loss (rather than a gamble that might not pay off) can increase uptake of insurance, which is often an optimal protective decision many skip. In Kazakhstan, micro-level nudges like

reminding people of bill due dates help them avoid late fees (which is financially optimal as it avoids wasteful fees).

- Hinder (if misused): On the other hand, the same principles can be used to exploit biases to the consumer's detriment. We saw that ease of borrowing (a kind of negative nudge) got people into trouble. Similarly, marketing that leverages scarcity or urgency ("Only 2 days left for this investment opportunity!") is a tactic that shuts down deliberation and pushes quick action, likely not in the customer's best interest. These are sometimes called "sludge" practices, the opposite of nudges, making it easier to do something potentially harmful or harder to do what's beneficial (like fine print making it hard to compare interest rates).

In Kazakhstan's context, financial consumer protection efforts are increasingly aware of these practices. The term "behavioral supervision" in a 2023 document suggests regulators intend to monitor and curb practices that prey on biases. This could include, for example, banning misleading framing (as they did by mandating clearer APR disclosure) and ensuring comparability of loan offers.

In conclusion for this section, the practical cases from Kazakhstan reaffirm that human psychology plays a significant role in financial decisions. When left unchecked, biases can lead to widespread issues like insufficient savings or debt crises. However, when behavioral tools are thoughtfully applied – whether by policymakers (through nudges and regulation) or by individuals themselves (through greater awareness and self-regulation) – they can make a meaningful difference, steering choices in a direction that improves financial well-being

6. Research results

The findings from the analysis underscore the profound impact of behavioral biases on financial decision-making and highlight the importance of using behavioral finance tools to guide decisions toward more rational outcomes. In this section, we interpret these findings within the theoretical framework established earlier, discuss implications for various stakeholders in Kazakhstan's financial landscape, and propose strategies to mitigate biases.

Theoretical Interpretation of Findings: The case studies demonstrated in practical terms that traditional assumptions of rationality often do not hold in Kazakhstan, much as elsewhere. Individuals deviated from what Expected Utility Theory or standard finance models would consider optimal – for example, not participating in beneficial financial opportunities (stock investing, pensions) or taking on too much high-cost debt. These deviations were not random; they were systematic, aligning with known biases:

- The reluctance to invest in formal markets ties to loss aversion and ambiguity aversion (people prefer the devil they know – cash or tangible assets – over the uncertain prospects of stocks, especially when they fear losses and lack trust).
- The crypto enthusiasm aligns with herding, overconfidence, and perhaps lottery-ticket mentality (overweighting small probability of huge gains).
- The under-saving for retirement is a clear case of present bias and inertia.
- Over-borrowing is influenced by myopia, optimism bias, and framing effects that made borrowing seem more harmless.

These behaviors validate core concepts of behavioral finance in the Kazakh context. As Kahneman & Tversky's prospect theory would predict, the pain of potential financial loss deterred many from risk-taking in investments beyond what rational models would suggest (where some risk is necessary for growth) (Gerth, 2021). Meanwhile, the lure of big gains (like crypto) saw risk-seeking behavior in another domain, consistent with prospect theory's prediction that people can be risk-seeking in the loss domain or when chasing unlikely big gains (like buying lottery tickets). The coexistence of cautious and risk-seeking behaviors in the same population, depending on context, is something traditional theory cannot explain but behavioral theory can.

We also observed that context and framing matter immensely: When loans were presented one way, people borrowed a lot; when rules changed and the context shifted (e.g., harder to borrow, or

loans framed more transparently), behavior shifted. This reinforces the idea that preferences are not fixed, but constructed in the moment and influenced by how choices are offered (the central thesis of behavioral decision theory).

Impact of Biases on Rational Decision-Making in Kazakhstan: The net impact of these biases in Kazakhstan has been significant on both individual and societal levels:

- At the individual level, many Kazakhs have likely experienced lower personal wealth accumulation, higher financial stress, or missed opportunities due to biased decisions. For instance, an individual who kept all savings in cash over the last decade (common for mistrust reasons) would have seen inflation erode their real value and missed out on the roughly 10-15% annual returns that a diversified stock portfolio (global) delivered over much of that period. Those who borrowed heavily faced stress, collection actions, or reliance on relatives or the government to bail them out.
- At the societal level, these patterns can influence economic development. Low participation in capital markets means less funding for businesses through equity and a shallower capital market, which Kazakhstan has been trying to deepen. Over-indebtedness of households can lead to macroeconomic risks and lower consumer spending in the long run (as more income goes to debt service). The government's need to intervene with debt relief or potentially support impoverished retirees in the future represents a fiscal risk partly driven by suboptimal private decisions.

However, it's not all bleak: recognition of these biases also opens avenues for improvement. Kazakhstan's policymakers have shown awareness by enacting certain protective measures post-2019. There's a growing discourse on financial literacy and even on behavioral public policy (the Astana Civil Service Hub report in 2023 indicates interest in applying behavioral insights for public good).

Policy Implications for Individuals and Institutions:

- For Individuals (Financial Decision-Makers): A key implication is that people should be aware of their own biases. Financial education programs should not only teach "finance 101" (like what is interest, what are stocks) but also "behavioral finance 101" – helping individuals recognize common pitfalls: knowing about loss aversion, overconfidence, etc., may help people pause and double-check their impulses. For example, if a retail investor knows about overconfidence, they might be more open to passive investing or seeking a second opinion before making a big trade. Individuals can also adopt personal "commitment devices" – such as automatic transfers to savings accounts (to counteract procrastination) or rules like "cool-off for 3 days before any major financial decision" to engage more rational thought. In Kazakhstan, where extended family ties are strong, families could collectively encourage good habits (for instance, siblings agreeing to discuss any new loans or investments openly, creating a small accountability group that can mitigate rash decisions).
- For Financial Advisors and Firms: Professionals in finance should integrate behavioral considerations into their advisory processes. A financial advisor in Kazakhstan guiding a client might explicitly ask questions to gauge if a client's choice is driven by a bias (e.g., "Why do you feel this stock is a good buy – could it be because it's been in the news a lot?" addressing availability bias). Advisors can use nudging tactics for their clients' benefit: setting default options that are in the client's interest (like automatically rebalancing portfolios, or defaulting to reinvest dividends). There is also an opportunity for financial services firms to design products that help mitigate biases – for instance, offering goal-based savings accounts (labelled for "home", "education", etc.) to leverage mental accounting positively, as some banks do. Firms that embrace behavioral finance may achieve better client outcomes and satisfaction.

For Regulators and Policymakers: The government and regulators in Kazakhstan have perhaps the biggest role. They can implement system-wide nudges that individuals alone cannot. Some recommendations include:

- Incorporate behavioral insights into financial consumer protection regulations. This means going beyond traditional disclosure to smart disclosure: information that is not only transparent but also understandable and salient. Possibly mandate that key facts (like total loan cost or worst-case investment scenario) be presented with visual cues (red/green symbols, etc.) and in plain language.

- Encourage or require financial institutions to adopt responsible default settings that benefit consumers. For example, banks could be nudged or mandated to offer automatic savings plans to their customers or to provide an opt-out rather than opt-in for certain protective features (like overdraft protection that prevents excessive fees).
- Use taxation and incentives cleverly: if too many people are trading short-term (perhaps hurting their finances), a small transaction tax could dampen impulsive day trading (though this is a double-edged sword as it could affect market liquidity; it's an idea some countries discuss to reduce noise trading).
- Continue strengthening credit regulations with a behavioral perspective – e.g., ensure marketing of credit products comes with balanced messaging (perhaps even a "health warning" style note about borrowing costs).
- On the public policy front, apply nudges to beneficial programs. For instance, if the government wants more people to participate in a subsidized home mortgage program, simplify the application and perhaps pre-notify those eligible (so inertia doesn't keep them out). Or in healthcare insurance uptake, frame it as avoiding catastrophic loss (loss aversion framing) rather than a regular expense.

For Educational Institutions: Universities and schools in Kazakhstan can incorporate personal finance with a behavioral angle into curricula. Young people should learn early about how emotions and cognitive biases can trick them in money matters. This could cultivate a generation more mindful of their financial habits.

- Strategies to Mitigate Negative Biases: Based on the analysis, here are some targeted strategies:
- Enhancing Deliberation: Introduce friction for big decisions. Whether by self-imposed rules or institutional design, ensure that there is a moment for System 2 (analytical thinking) to catch up with System 1 (gut reaction). A practical tip is the "sleep on it" rule for any non-routine financial decision (investments, loans, purchases). Some apps now have features like requiring a user to re-confirm after a day for very risky investments – this could be adopted widely.
- Visual Tools and Reminders: Human brains respond well to visuals. Budgeting apps that show a user's spending as a quickly depleting bar or future projections of their savings can trigger a realization that pure numbers might not. In Kazakhstan, fintech is growing; developers can incorporate behavioral design (for example, Kaspi.kz, a super-app widely used, could include nudges in its interface to encourage better financial management given its influence).
- Peer Comparison for Good: Provide benchmarks or peer comparisons to encourage better behavior. People often want to know how they're doing relative to others. For example, a message like "People like you (same income) usually save X% of their salary – you are saving Y%" can motivate under-savers to increase their saving rate, playing on competitiveness or at least providing a frame of reference.

Default and Automation: As repeatedly mentioned, if something is good for most people, make it the default. Automation turns good intentions into actions without relying on willpower each time. Automatic bill payments to avoid late fees, automatic escalation of savings when income rises, etc., all help bypass forgetting or temptations to skip.

Policy Implementation Consideration: One must also consider cultural receptivity. In Kazakhstan, a top-down government directive can be very effective (e.g., the debt relief was executed swiftly). So, if the government endorses behavioral programs (like a national savings drive with nudges), it could gain traction. However, trust in institutions is a factor – nudges work best when people trust the nudger. Building trust through transparency (for instance, clearly communicating how and why defaults are set a certain way) is crucial to ensure people don't feel manipulated.

It's also worth discussing that not all biases are bad in all circumstances. Sometimes, rules of thumb exist for a reason – for example, mistrust of something new in an environment where scams have happened isn't entirely irrational. So the goal is not to eliminate all bias, but to distinguish when

a bias is leading someone astray versus when it's a reasonable caution. This discernment can be achieved through improved financial advice channels or decision support tools.

7. Prospects for further research development

Future research should conduct empirical testing of these tools in Kazakhstan to measure their effectiveness. As the country continues its financial development, integrating behavioral insights will be crucial to ensuring inclusive, sustainable financial well-being.

8. Conclusions

This study explored how behavioral finance tools can improve financial decision-making in Kazakhstan. While classical models assume rationality, real-world behaviors are often driven by cognitive biases. In Kazakhstan, these biases manifest in low investment, inadequate saving, and risky borrowing.

Behavioral interventions such as nudges, framing, and automation can guide individuals toward better outcomes. The government and financial institutions should adopt these tools, supported by education and regulation.

References:

1) Amanzholova, G. (2021). Get-rich-quick schemes' impact on public perception of stock market investment in Kazakhstan. *Vostochnoyevropeyskiy nauchnyy zhurnal*, *(9-2(73))*, 36–43.

2) Astana Civil Service Hub. (2023). *Behavioral public policy: New opportunities and challenges for Kazakhstan and the Eurasia region*. Astana: ACSH.

3) Barber, B. M., & Odean, T. (2000). Trading is hazardous to your wealth: The common stock investment performance of individual investors. *The Journal of Finance*, *55*(2), 773–806. https://doi.org/10.1111/0022-1082.00226

4) Bayakhmetova, A., Bayakhmetova, L., & Bayakhmetova, L. (2023). Impact of financial literacy on investment decisions in developing countries: The example of Kazakhstan. *Asian Development Policy Review*, *11*(3), 167–181. https://doi.org/10.55493/5009.v11i3.4700

5) Chen, J. (2024). Prospect theory: What it is and how it works, with examples. *Investopedia*. https://www.investopedia.com/prospect-theory-4174798

6) Corporate Finance Institute. (n.d.). *Framing bias – How the way information is presented can influence decisions* (T. Vipond, Author). https://corporatefinanceinstitute.com/resources/behavioral-finance/framing-bias/

7) Gerth, F., Lopez, K., Reddy, K., Ramiah, V., Wallace, D., & Muschert, G. (2021). The behavioural aspects of financial literacy. *Journal of Risk and Financial Management*, *14*(9), 395. https://doi.org/10.3390/jrfm14090395

8) Investopedia. (2021). *Expected utility: Definition, calculation, and examples*. https://www.investopedia.com/terms/e/expected-utility.asp

9) Investopedia. (2024). *Efficient market hypothesis (EMH): Definition and critique*. https://www.investopedia.com/terms/e/efficientmarkethypothesis.asp

10) Kaplan Financial Education. (2021, July 23). *What is behavioral finance?* https://www.kaplanfinancial.com/resources/articles/investments/what-is-behavioral-finance

11) Kazakh Presidential Decree No. 34. (2019, June 26). *On measures to reduce the debt burden of citizens of the Republic of Kazakhstan*.

12) Mazorenko, D., Zheniskhan, D., & Kaisar, A. (2021, June 16). Kazakhstan is caught in a vicious cycle of debt. The pandemic has only made it worse. *openDemocracy*. https://www.opendemocracy.net/en/odr/kazakhstan-debt-crisis-covid19/

13) Satubaldina, A. (2024, December 5). Cryptocurrency ownership expanding in Central Asia, says latest report. *The Astana Times*. https://astanatimes.com/

14) Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science*, *185*(4157), 1124–1131. https://doi.org/10.1126/science.185.4157.1124

15) Tversky, A., & Kahneman, D. (1979). Prospect theory: An analysis of decision under risk. *Econometrica, 47*(2), 263–292. https://doi.org/10.2307/1914185

16) White & Case LLP. (2019, July 2). Kazakhstan president announces consumer loan debt relief. *Lexology*. https://www.lexology.com/library/detail.aspx?g=6aa99655-fc69-44b0-b8e7-6f531b2e0c32

17) World Bank. (2024). *Republic of Kazakhstan – Financial Sector Assessment Program: Technical note on financial consumer protection and consumer lending.* https://documents.worldbank.org