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## UNVEILING GREEN FINANCE IN KAZAKHSTAN: A STUDY ON AWARENESS AND BARRIERS TO SUSTAINABLE INVESTMENTS

Green finance has emerged as a global trend in the advancement of financial systems and Kazakhstan is not an exception. Existing literature highlights the lack of awareness as one of the impediments to fostering green growth. The purpose of article is to examine the extent of familiarity and understanding of green finance among the populace of major cities Kazakhstan, Almaty and Astana. To achieve this, we conducted a comprehensive survey among residents of Kazakhstan. Through various channels, a detailed questionnaire focusing on green finance awareness was disseminated, yielding a dataset comprising 82 responses. Main results: the level of green awareness remains low among the populace of Kazakhstan. Perceived barriers to green investments result from low level of green awareness. Findings support the hypothesis that individuals' decision to invest is affected not only by financial, but also environmental benefits. While the current body of literature primarily concentrates on the theoretical underpinnings of green finance, practical studies are often confined to interviews with green finance professionals within financial institutions or businesses engaged in green financing. The article's contribution is that it presents the perspectives of the general public, thus providing a novel dimension to the ongoing discourse.

**Key words:** Green finance, awareness, green bonds, green economy, sustainable finance, Kazakhstan.

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### Қазақстандағы жасыл қаржыландыру: тұрақты инвестициялар жолында хабардарлық деңгейі мен кедергілерді зерттеу

«Жасыл қаржыландыру» қаржы жүйелерін дамытудың жаһандық трендіне айналды және Қазақстан да одан тыс қалмайды. Қолданыстағы әдебиеттерде хабардарлықтың жоқтығы жасыл өсуді ынталандырудағы кедергілердің бірі ретінде қарастырылады. Мақаланың мақсаты – Қазақстан тұрғындарының жасыл қаржыландыру туралы хабардар болу және түсіну дәрежесін зерттеу. Ол үшін біз Қазақстан тұрғындары арасында жан-жақты сауалнама жүргіздік. Жасыл қаржыландыру туралы хабардар болу туралы егжей-тегжейлі сауалнама әртүрлі арналар арқылы таратылды, нәтижесінде 82 жауаптан тұратын деректер жинағы алынды. Негізгі нәтижелер: Қазақстан халқының экологиялық сана-сезімінің деңгейі төмен болып қалуда. Адамдардың инвестициялау туралы шешім қабылдауына тек қаржылық емес, сонымен қатар экологиялық пайда да әсер етеді. Жасыл инвестицияға кедергілер экологиялық хабардарлықтың төмен деңгейінен туындайды. Ағымдағы әдебиеттер негізінен жасыл қаржыландырудың теориялық негіздеріне шоғырланғанымен, практикалық зерттеулер көбінесе қаржылық институттардағы немесе жасыл қаржыландырумен айналысатын бизнестегі жасыл қаржы мамандарымен сұхбаттармен шектеледі. Мақаланың практикалық маңыздылығы – ол жалпы жұртшылықтың көзқарасын ұсынып, осылайша жалғасып жатқан әңгімеге жаңаша мән береді.

**Түйін сөздер:** жасыл қаржы, хабардарлық, жасыл облигациялар, жасыл экономика, тұрақты қаржы, Қазақстан.

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**«Зеленые» финансы в Казахстане:  
исследование осведомленности и барьеров  
на пути устойчивых инвестиций**

Зеленые финансы стали глобальной тенденцией в развитии финансовых систем, и Казахстан не является исключением. В существующей литературе недостаток осведомленности рассматривается как одно из препятствий на пути содействия «зеленому» росту. Цель статьи – изучить степень осведомленности и понимания зеленых финансов среди населения Казахстана. Для этого мы провели комплексный опрос среди жителей Казахстана. По различным каналам был распространен подробный вопросник, посвященный осведомленности о «зеленых» финансах, в результате чего был получен набор данных, содержащий 82 ответа. Основные результаты: уровень экологического сознания среди населения Казахстана остается низким. На решение людей инвестировать влияют не только финансовые, но и экологические выгоды. Предполагаемые препятствия для зеленых инвестиций возникают из-за низкого уровня экологической осведомленности. Хотя нынешняя литература в основном концентрируется на теоретических основах «зеленых» финансов, практические исследования часто ограничиваются интервью со специалистами по «зеленым» финансам в финансовых учреждениях или предприятиях, занимающихся «зеленым» финансированием. Практическое значение статьи состоит в том, что она представляет точку зрения широкой общественности, тем самым придавая новое измерение продолжающемуся дискурсу.

**Ключевые слова:** Зеленые финансы, осведомленность, зеленые облигации, зеленая экономика, устойчивое финансирование, Казахстан.

## Introduction

Over the past decade, green finance has emerged as a global trend in the advancement of financial systems and a necessary step towards greening the national economies. According to the United Nations Environmental program, a “green economy” is an economy that simultaneously improves social equity and human welfare, by reducing environmental dangers and preserving environmental resources (UNEP, n.d.). “Green economy” is closely related to “sustainable economy”, which is a broader concept encompassing economic, social, and environmental dimensions. UNEP (n.d.) defines Green finance as aimed “to increase the level of financial flows (from banking, micro-credit, insurance, and investment) from the public, private and not-for-profit sectors to sustainable development priorities”. Although there is no universal definition, green finance can generally be defined as financial flows aimed to provide environmental benefits in the context of sustainable development. Green finance encompasses a range of financial products, including but not limited to green bonds, green loans, sustainable banking, green insurance, etc.

The Republic of Kazakhstan has proactively adopted green finance as a pivotal stride towards achieving a sustainable economy. Despite notable

progress made, such as the establishment of the Astana International Financial Centre’s Green Finance Centre and issuances of green bonds, certain obstacles still impede further advancements.

Green finance awareness among the population refers to the level of knowledge and understanding that individuals have about green finance and its benefits. It involves understanding the concept of green finance, its potential to promote environmentally-positive activities, and how it can be used to mitigate climate change. The lack of awareness can be attributed to ambiguous definitions, lack of coherence, low capacity, and inadequate knowledge about green finance.

Existing literature highlights the lack of awareness as one of the impediments to fostering green growth. For example, Mathur (2022) reveals that there is a significant impact of awareness and customer’s perception about the benefits of green financing. Kumar et al. (2023) argue that a lack of knowledge and understanding about green finance and economy can hinder the adoption of sustainable practices.

This article aims to examine the extent of familiarity and understanding of green finance among the populace of Kazakhstan. It aims to identify the key impediments and propose strategies to overcome these barriers and promote green finance. To achieve

this, we conducted a comprehensive survey among residents of Kazakhstan. Through various channels, a detailed questionnaire focusing on green finance awareness was disseminated, yielding a dataset comprising 82 responses.

While the current body of literature primarily concentrates on the theoretical underpinnings of green finance, practical studies are often confined to interviews with green finance professionals within financial institutions or businesses engaged in green financing. Thus, studies on individual perceptions and understanding of green finance are mostly ignored in the literature. This article differentiates itself by centering on the perspectives of the general public, thus providing a novel dimension to the ongoing discourse.

### Literature review

The growing literature on green finance, presented by Flammer (2021), Hacıömeroğlu et al. (2022) and Zhang et al. (2021), mainly studies green bonds and green banking in the markets of Europe, the USA, China and Bangladesh. The studies examine green market development, the existence of “greenium” and relation to corporate ESG policy. Popescu & Popescu (2019) examined the comprehension levels of both Romanian organizations and the local community concerning the paradigms of green finance, CSR, and intellectual capital. According to Zerbib (2019), in green bond market investors are willing to accept lower yields in return for environmental benefits. The findings of Prajapati et al. (2021) support this claim by showing the importance of issuer’s ESG rating for individual retail investors in Indian green bond market.

Several previous studies aimed to identify key impediments to the adoption of green finance in different regions. Abuzeinab et al. (2017) and Mumtaz and Smith (2019) explored main demand and supply-side issues in green finance developments. In their paper, Khan et al. (2022) pinpoint lack of education and awareness as the key obstacle in the development of green finance. Among other barriers to green finance, the author cites poor organizational structures, riskiness, low returns, high costs, complexity, etc.

According to Von Neumann and Morgenstern’s (1947) traditional utility theory, consumers purchase products by optimizing their expected utility. Levitt and List (2007) incorporated ethical considerations into this model, suggesting that responsible investors weigh both financial and moral outcomes. When considering investments, it’s understood that they

should yield returns for the investor. Thus, Lia & Natswa (2023) argue that informing about utility is crucial to foster green investments.

The survey of German and French citizens by Finance for tomorrow (2021), about 80% of individual investors are concerned about sustainability of their investments. Peattie (2001) contends that, all else being equal, consumers prefer environmentally friendly products if they understand their attributes and possess complete knowledge.

Marwan (2020) studied the level of awareness and understanding of green financing among Jordanian commercial banks, using a qualitative research methodology. The authors concluded that green finance awareness and understanding are at acceptable level among bank personnel in Jordan, mainly due to high governmental support.

Ellahi et al. (2021) examined customer awareness of green banking in Pakistan. This exploratory research utilized the Structural Equation Model (SEM) to analyze data from 400 respondents garnered through convenience sampling. The findings are illuminating: the customer base appears to be generally supportive of the eco-conscious changes implemented by banks. Furthermore, educational attainment emerged as a salient factor positively correlating with awareness of green banking. The study also revealed that such awareness is contingent upon demographic variables like age, gender, and occupation. According to Ellahi et al. (2021), there is a gender difference in perception of green finance, with women more likely to support green development.

The study by Raju (2022) evaluates public understanding of green finance initiatives across the world, with a special focus on India. It assesses the level of awareness and knowledge of green finance among the youth of Hyderabad city. According to Raju (2022), there exists a research gap on the awareness of green finance.

The research by Sunil and Durgalashmi (2022) examines customer awareness and perceptions of green banking in India. The authors found that unawareness and lack of knowledge are main reasons for individuals in India not using green banking.

Bethlendi et al. (2022) in their study of household demand for green financial products asserted a positive relationship between financial literacy and green awareness. This suggests that individuals equipped with financial knowledge and a keen awareness of environmental concerns are more inclined towards green financial products. Furthermore, the research offers an insightful

correlation between personal eco-conscious attitudes and preferences in finance. Specifically, those who demonstrate a pronounced proclivity for sustainability in their everyday consumption decisions tend to mirror this sentiment in their financial choices. Bethlendi et al. (2022) argue that a demographic consisting of younger, predominantly male, well-educated individuals with favorable living conditions in larger urban areas is indicative of the potential clientele for green financial products.

Since green finance is at its nascent stage in Kazakhstan, local studies related to the topic are limited. The existing studies usually discuss the current course of development in green market (Mazina et al., 2022). Up to our knowledge, there are no empirical studies aimed to assess the level of understanding and green finance awareness in Kazakhstan. Individual investors potentially constitute a large source of, thus understanding their preferences and inclination towards green finance is essential to overcome barriers to green finance development.

## Methodology

The present study adopts an exploratory survey approach to accomplish its research objectives. The population of interest is citizens of major cities of Kazakhstan, namely Almaty and Astana. The limitation to two cities is explained by two factors: 1. green finance is a relatively new phenomenon; 2. existing green finance practices are more prevalent in these cities, thus level of public awareness can be measured among the populace of these regions.

The sample for the article was done using convenience sample technique. Convenience sampling is a non-probability sampling method where units are selected for inclusion in the sample because they are the easiest and most convenient for the researcher to access. This sampling method is often used when other types of sampling methods are hard or impossible to use because of time, cost, etc. It is imperative to acknowledge that our sample, while facilitating insights for analysis, may lack the representativeness required to generalize findings to the broader population. This potential limitation stems from inherent biases attributable to self-selection and the possibility of non-response bias.

A comprehensive questionnaire, comprising 26 questions encompassing both open-ended and closed-ended formats, was disseminated through a range of online channels, including email, social media platforms, and messaging applications. The

selection of the online survey methodology was predicated primarily upon its capacity to engage a diverse and extensive audience, its cost-effectiveness, and its user-friendly nature for respondents.

The questionnaire was divided into 4 sections. The first set of questions were aimed to understand the demographics of respondents in our sample, such as gender, age, education and employment. The next two sections explored levels of green finance awareness and environmental awareness in the sample. The last section was designed to identify key barriers to sustainable investments. Over a span of two weeks, a total of 82 fully completed responses were garnered and subsequently utilized for analyses.

There are several hypotheses proposed by authors:

H1: The level of green awareness remains low among the populace of Kazakhstan.

H2: Individuals' decision to invest is affected not only by financial, but also environmental benefits.

H3: Perceived barriers to green investments result from low level of green awareness.

## Results and discussion

### Section 1: Demographics

The first set of questions were aimed to understand the demographic characteristics (Gender, age, educational background and employment status) of the study participants. The results are presented in Graphs 1-4.

The respondents' gender distribution revealed a slight disparity, with 37 (45.1%) identifying as male, and 45 (54.9%) as female. There were no responses indicating 'Other' as a gender identity.

The age distribution of participants reflected diverse representation across various age groups. Notably, 21 (25.6%) respondents were in the 18-24 age bracket, while 47 (57.3%) fell within the 25-34 age range. Smaller proportions of respondents were categorized as follows: 9 (11.0%) in the 35-44 bracket, 4 (4.9%) in the 45-54 range, 1 (1.2%) aged 55-64, and no responses from those under 18 or aged 65 and above.

The educational attainment of respondents exhibited a range of levels. A minority of respondents, 3 (3.7%), indicated a high school education or lower, while 5 (6.1%) reported having attended some college. The majority of participants held a Bachelor's degree, with 59 (72.0%) falling into this category. 14 (17.1%) respondents possessed a Master's degree, and only 1 (1.2%) reported having a Doctorate or higher level of education.

The employment status of participants highlighted varied professional engagements. A significant proportion, 55 (67.1%), identified as employed on a full-time basis, while 6 (7.3%) were employed part-time. A smaller number, 2 (2.4%), reported being unemployed, and 18 (22.0%) indicated their status as students. A solitary respondent identified as retired, and no specific 'Other' employment statuses were specified.

The demographic portrait drawn from this survey encompassed a diverse cross-section of participants in terms of gender, age, educational background, and employment status, which serves as a foundational context for interpreting subsequent findings.

#### Section 2: Green Finance Awareness

In this section, the study investigates the extent of familiarity among respondents with the concept of "Green Finance."

Question 5 sought to determine respondents' prior awareness of the term "Green Finance". The findings reveal that a majority of the participants, 51 (62.2%), had encountered the term before engaging with the survey. In contrast, a substantial subset of respondents, 31 (37.8%), indicated having no prior acquaintance with the term.

The outcome of this inquiry underscores a mixed level of awareness concerning "Green Finance" among the survey participants. The sizeable

proportion of respondents who were previously unfamiliar with the term suggests a potential gap in the dissemination and visibility of the concept within the public sphere. It is noteworthy that a notable portion of the respondents, constituting over 60% of the sample, had some level of familiarity with "Green Finance." This finding signifies a basic foundation upon which to build further exploration and understanding of green financial concepts in subsequent sections of the survey. The data also prompts consideration of how to bridge the gap for those respondents who lack awareness, potentially through targeted educational initiatives to enhance overall comprehension of eco-centric financial concepts.

An open-ended question 6 aimed at understanding participants' personal definitions of "Green Finance" was included in the survey (Table 1). Although a significant share (57%) did not respond, proposed definitions provided a range of insights into how individuals conceptualize this term. The responses reflect a collective understanding of "Green Finance" as encompassing investments, practices, and decisions that prioritize environmental well-being, sustainability, and responsible resource management. The variety of interpretations emphasizes the multifaceted nature of this concept within the context of personal perspectives and values.

**Table 1** – Respondents' understanding of Green Finance

6. How would you define "Green Finance"?	
Theme	Representative responses
Environmentally Conscious Investments	"Green finance involves investing in projects that have a positive impact on the environment, like renewable energy and sustainable infrastructure." "It's about using money to support initiatives that are good for the planet, like clean energy."
Sustainability and Responsibility	"Green finance means making financial decisions that consider both financial returns and their impact on the environment."
Climate Change Mitigation	"It's financial support for actions that address climate change, like reducing emissions " "Green finance is funding solutions to combat global warming and its effects." Ethical Investments:
Ethical Investments	"Investments that align with my values, supporting companies that are environmentally responsible." "Choosing where to invest money based on ethical considerations, particularly environmental ones."
Renewable Energy Focus	"Financing renewable energy projects like solar and wind power."
Carbon Reduction and Emission Control	"Financing projects that aim to lower carbon footprints and limit greenhouse gas emissions."
Long-Term Vision	"Investments and financial decisions that are geared toward ensuring a sustainable future for next generations."

Note: Compiled by authors based on survey results

In response to question 7 concerning which financial products or services can be classified as "Green Finance," respondents exhibited varied

understanding and awareness (Graph 1). A majority equated Green Finance with "Green bonds" and "Green savings accounts," both garnering

approval from 60% (49 respondents) of those surveyed. On the other hand, “Renewable energy investment funds” and “Sustainable investment portfolios” received acknowledgment from only 34% (28 respondents) and 39% (32 respondents) respectively. It is noteworthy to mention that “Eco-friendly mortgages” were recognized by over half of the respondents, precisely 51% (42 individuals), as falling under the umbrella of Green Finance. Meanwhile, “Carbon offset programs” were identified by 43% (35 respondents). A small percentage, 6% (5 respondents), believed that none of the options provided were classified as Green Finance, while 34% (30 respondents) remained uncertain about the correct classification, underscoring the need for more widespread education and clarity on the subject in Kazakhstan.

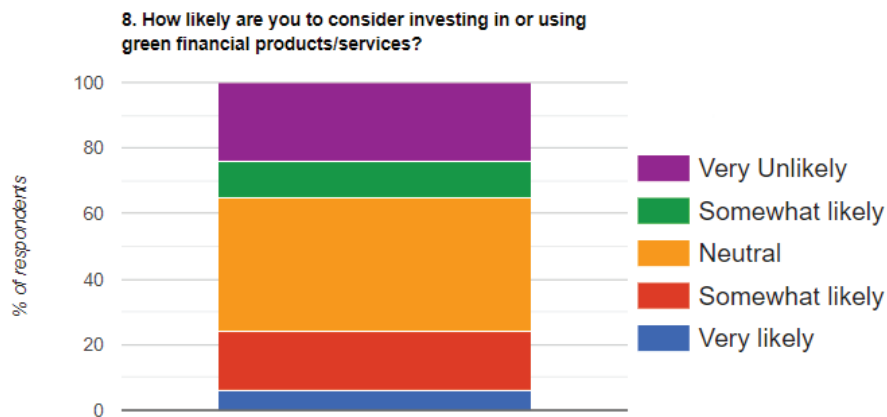
When respondents were queried regarding their likelihood to invest in or use green financial products/services, the results provided a comprehensive insight into the inclinations and reservations of the surveyed population (Graph 1). A promising 25% expressed that they were “Very likely” to consider such eco-conscious financial avenues. An additional 10% showcased interest by indicating they were “Somewhat likely” to explore green financial products/services. The largest proportion, however, sat on the fence with 38% being “Neutral” on the matter. On the more hesitant side, 21% felt

“Somewhat unlikely” to delve into green finance, and a minor 6% were decidedly against it, indicating they were “Very unlikely” to consider such options. The data suggests a mix of enthusiasm, ambivalence, and resistance towards green finance among respondents, emphasizing the need for targeted awareness campaigns and education to move the scales towards more sustainable financial decisions.

**Table 2** – Classification of green finance.

Which of the following financial products or services do you think can be classified as "Green Finance"? (Select all that apply)		% or respondents
1	Green bonds	60
2	Green savings accounts	60
3	Renewable energy investment funds	34
4	Sustainable investment portfolios	39
5	Carbon offset programs	43
6	Eco-friendly mortgages	51
7	None of the above	6
8	Not sure	34

Note: Compiled by authors based on survey results



**Graph 1** – Likelihood of considering green financial products.

Note: Compiled by authors based on survey results

When inquired about the primary advantages of investing in green financial products or services, respondents highlighted a variety of perceived benefits (Graph 3). Topping the list was the “Positive environmental impact,” recognized by a notable

55% of participants, suggesting an acute awareness of the ecological advantages tied to green finance. The notion of “Aligning with personal values” also resonated strongly with respondents, as 46% acknowledged this aspect, emphasizing a growing

personal ethos surrounding sustainability. On the economic front, 26% believed in the “Potential for higher returns” from green investments. Simultaneously, “Support for sustainable businesses and initiatives” was noted by 37% of respondents, hinting at a broader societal and economic interest. Interestingly, “Government incentives or tax benefits” were cited by 33%, indicating some awareness of potential policy-driven financial incentives in the green finance space. A mere 7% saw green investments as having a “Lower risk compared to traditional investments.” Meanwhile, a substantial 43% were “Not sure” about the benefits, suggesting a significant segment still remains unsure or uninformed about the potential advantages of green finance.

When posed with the question of whether green finance is accessible to everyone irrespective of their income or financial status, the respondents offered varied perspectives (Table 3). A majority, represented by 49 individuals, expressed the belief that green finance is indeed universally accessible. Conversely, 25 respondents held the opposing view, indicating that they perceive green finance as potentially exclusive or restrictive based on financial standings. A smaller subset, consisting of 8 participants, remained uncertain on the matter. These findings shed light on prevailing perceptions about green finance’s inclusivity, with a significant portion feeling optimistic about its accessibility, yet a considerable number still holding reservations. The uncertainty among a section of respondents further underscores the need for enhanced clarity and awareness campaigns around the inclusiveness of green finance.

**Table 3** – Respondents’ view of benefits from green finance.

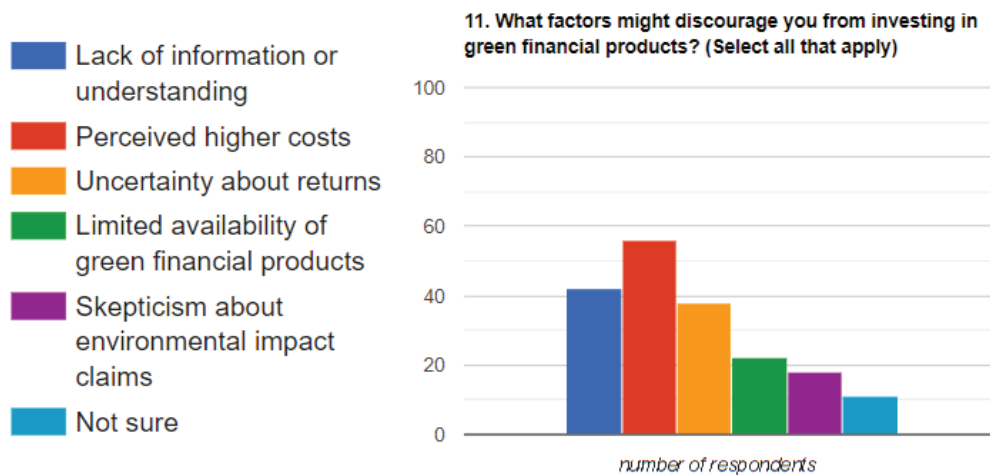
9. What are the main benefits of investing in green financial products or services? (Select all that apply)		% of respondents
1	Positive environmental impact	55
2	Potential for higher returns	26
3	Lower risk compared to traditional investments	7
4	Support for sustainable businesses and initiatives	37
5	Aligns with personal values	46
6	Government incentives or tax benefits	33
7	Not sure	43

Note: Compiled by authors based on survey results

In response to the question probing deterrents to investing in green financial products, multiple concerns emerged among the participants (Graph 2). The most prominent concern revolved around “Perceived higher costs,” as cited by 56 respondents, suggesting that many view green finance as potentially more expensive or financially burdensome. Following closely, “Lack of information or understanding” was identified by 41 individuals, highlighting an informational gap in the arena of green finance. “Uncertainty about returns” was another significant deterrent, with 38 respondents expressing reservations about the profitability or financial outcomes of such investments. The “Limited availability of green financial products” and “Skepticism about environmental impact claims” were raised as concerns by 22 and 18 participants, respectively, pointing to accessibility issues and trust-related challenges. A smaller subset, represented by 11 respondents, remained unsure about what might deter them, suggesting either limited familiarity with the topic or ambivalence about potential concerns. These findings emphasize the importance of transparent communication, enhanced accessibility, and broader educational initiatives to foster confidence in green financial products and services.

### Section 3: Environmental Awareness

Addressing the degree of concern regarding pressing environmental issues like climate change, pollution, and biodiversity loss, the respondents exhibited varying levels of environmental consciousness. A significant 22% voiced that they were “Very concerned” about these issues, indicating a heightened sense of urgency and recognition of the profound challenges posed by environmental degradation. An additional 29% were “Somewhat concerned”, suggesting that while they acknowledge the importance of such issues, their degree of concern might be tempered by various factors. The largest proportion of respondents, 39%, maintained a “Neutral” stance, which could reflect either a limited understanding of these issues, ambivalence, or possibly other priorities overshadowing environmental concerns. Meanwhile, a smaller segment of the respondents appeared less alarmed, with 7% being “Not very concerned” and a minimal 3% expressing that they were “Not concerned at all”. The data presents a nuanced landscape of environmental awareness, hinting at the need for robust advocacy and education to elevate the gravity of environmental challenges in the public consciousness.

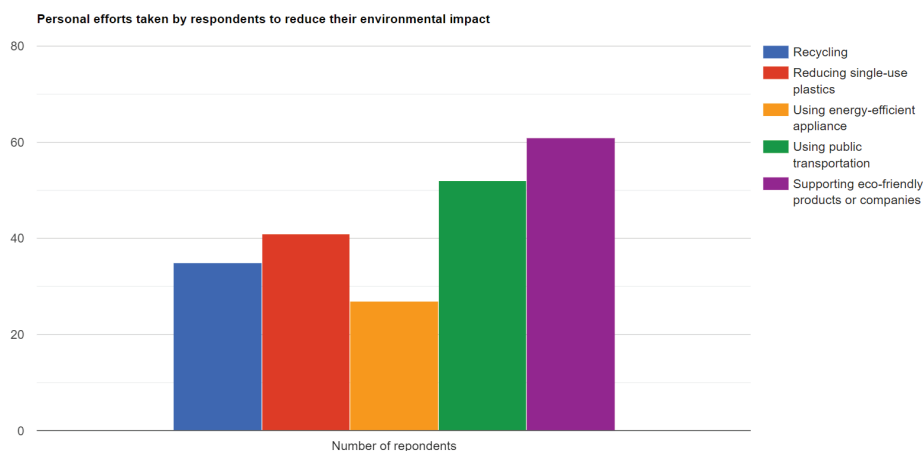


**Graph 2** – Respondents’ concerns on green investing.  
 Note: Compiled by authors based on survey results

Question 13 delved into the participants’ proactive engagements concerning environmental sustainability. A substantial 82% of respondents, accounting for 67 individuals, affirmed having made personal efforts to diminish their environmental footprint. This signifies a notable trend toward environmentally-conscious behavior and individual responsibility. Conversely, 18% of respondents (15 individuals) have not made such efforts, suggesting there are potential barriers, lack of awareness, or other reasons inhibiting their engagement.

For those who have taken positive action, Question 14 aimed to uncover the specific activities they adopted (Graph 3). The leading action was “Supporting eco-friendly products or companies” with 61 respondents endorsing this measure, reflecting a consumer-driven push for sustainability.

A close second, “Using public transportation or carpooling” was cited by 52 individuals, indicating a significant emphasis on reducing carbon footprints through transportation choices. The effort of “Reducing single-use plastics” was taken up by 41 participants, highlighting the growing awareness about plastic pollution and its detrimental effects. “Recycling”, a traditional eco-friendly practice, was adopted by 35 respondents. Meanwhile, “Using energy-efficient appliances” was noted by 27 participants, suggesting an increasing emphasis on energy conservation in daily life. The “Other” category would capture a range of varied environmental initiatives that respondents might have undertaken beyond the provided options, reflecting the multifaceted nature of individual efforts in the face of environmental challenges.



**Graph 3** – Respondents’ efforts to reduce environmental impact  
 Note: Compiled by authors based on survey results



#### Section 4: Barriers to Green Finance Development

In this section we identified several impediments to the broader uptake and advancement of green financial mechanisms (Graph 6). A notable 53% of participants pinpointed a lack of awareness and education about green finance as a primary barrier. This was closely followed by concerns over the profitability of green investments, with 52% expressing uncertainties. The limited availability of green financial products and services was identified by 45% of respondents, while skepticism regarding the actual environmental impact of green projects was noted by 43%. Financial considerations also

surfaced, with 38% perceiving higher initial costs as a deterrent, and 30% finding it challenging to pinpoint trustworthy green investment avenues. Interestingly, despite global discourses on the need for state-backed green finance policies, 41% of respondents felt the absence of governmental incentives or a supportive regulatory framework was a hurdle. However, resistance from traditional financial institutions, often seen as significant players in this transition, was the least of concerns, with only 18% seeing it as a barrier. This snapshot provides a comprehensive understanding of the multifaceted challenges faced by the nascent green finance sector in Kazakhstan.

**Table 4** – Respondents' perception of main barriers to Green finance development.

<b>Main barriers</b>	<b>% of respondents</b>
<b>Lack of awareness and education about green finance</b>	53
<b>Limited availability of green financial products and services</b>	45
<b>Perceived higher costs or initial investments</b>	38
<b>Uncertainty about the profitability of green investments</b>	52
<b>Lack of government incentives or regulatory support</b>	41
<b>Difficulty in identifying credible and reliable green investment opportunities</b>	30
<b>Skepticism about the effectiveness of green projects and their impact on the environment</b>	37
<b>Resistance from traditional financial institutions to adopt green finance practices</b>	18

Note: Compiled by authors based on survey results

In assessing the perceptions regarding the role of financial institutions in promoting green finance among the survey participants, a significant 51% believed that financial entities should indeed take a more proactive stance in endorsing green finance initiatives. In contrast, only 18% disagreed with the idea that these institutions should be at the forefront of the green finance movement. Notably, a substantial 31% of respondents were ambivalent, indicating that they were unsure about the role of financial institutions in this context. This data suggests a general inclination towards expecting financial institutions to champion green finance, but

it also underscores the need for more awareness and clarity on the topic, given the substantial proportion of respondents who remain undecided.

In the endeavor to understand potential remedies to the challenges plaguing the growth of green finance, respondents were questioned about the measures they believed would be most efficacious. A significant 56% highlighted the importance of offering financial incentives, such as tax breaks or subsidies, to bolster green investments. This was closely trailed by the 48% who believed that amplifying education and awareness campaigns around green finance could be pivotal in overcoming existing barriers. Regulatory

strengthening in favor of green finance initiatives was seen as a potential solution by 40% of participants. Encouraging synergies between financial institutions and environmental organizations was considered beneficial by 33%, while the creation of a standardized certification process for green financial products was backed by 27% of the respondents. Addressing these barriers seems vital, as 56% indicated they would be more inclined to invest in green financial products if such impediments were mitigated or eradicated. However, 20% stated they would remain unaffected by the removal of barriers, and 24% were uncertain, indicating that while alleviating challenges is essential, other factors also play a role in investment decisions.

### Conclusion

The article presents a survey study aimed to explore the extent of familiarity and understanding

of green finance among the populace of Kazakhstan. The findings show that overall respondents have some acquaintance with green agenda, however green finance awareness remains relatively low, supporting the hypothesis 1. Only limited number of participants could provide appropriate definitions and identify related green financial products and services. Nevertheless, respondents expressed environmental concern and showed some interest in green investing, supporting hypothesis 2. As expected, low green awareness, along with limited availability of green products and inadequate financial incentives suspend the growth of green finance in Kazakhstan. Strategies to promote development of green finance should include raising awareness through providing necessary information and education; implementing tax incentives to reduce costs associated with green investments and governmental support for green businesses and initiatives.

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