Consumer Behavior Regarding Refurbished and Pre-Owned Electronic Products in Kazakhstan

Master of Engineering Management
2023 – 2025

Submitted in partial fulfillment of the requirements for the degree of
Master of Engineering Management

NAZARBAYEV UNIVERSITY

School of Engineering and Digital Sciences

In partnership with

Graduate School of Business

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May, 2025

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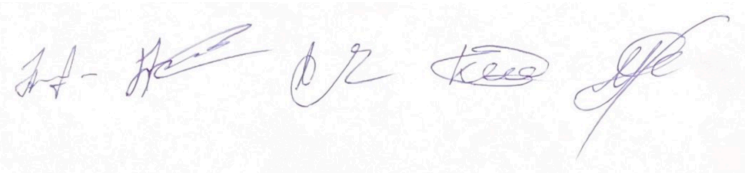
Declaration

We, Azhar Adilkyzy, Bekzat Kuvanchbay, Nurmukhamed Zhanibek, Ulan Kashkimbayev, and Yerzhan Mukhanov, declare that the research contained in this thesis, unless otherwise formally indicated within the text, is the author's original work. The thesis has not been previously submitted to this or any other university for a degree and does not incorporate any material already submitted for a degree.

Signature (s): 

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Abstract

This study explores consumer behavior toward refurbished and pre-owned electronic products in Kazakhstan, focusing on the challenges and opportunities surrounding e-waste and sustainability goals. The research uses a combination of literature analysis, market data, and survey responses to understand the factors influencing consumer decisions on purchasing refurbished electronics. The primary barriers identified include concerns about product quality, trust in sellers, and inadequate warranty options. However, price advantages and manufacturer certifications serve as motivating factors for consumer acceptance.

The findings indicate that, while the adoption of refurbished products is on the rise among younger technologically adept professionals, there remains significant hesitation due to widespread skepticism regarding the reliability of these products. To address these concerns, the study suggests that trust-building strategies, including clear manufacturer endorsements, warranties, and trade-in discounts, can significantly increase the adoption rate of refurbished electronics. Furthermore, the study offers practical recommendations for retailers, manufacturers, and policymakers to foster a circular economy and improve e-waste management practices in Kazakhstan.

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Acknowledgments

We would like to express our sincere gratitude to all our professors for their valuable guidance and support throughout our academic journey. In particular, we extend our heartfelt thanks to our supervisor, Professor Narendra Singh, whose expertise, encouragement, and continuous support were instrumental in the successful completion of our capstone project.

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1. Introduction

Refurbished and pre-owned electronic products saw their worldwide market grow substantially throughout recent years because customers sought affordable sustainable alternatives to fresh devices. According to industry projections the global refurbished electronics market will grow substantially to reach $94.10 billion by 2030 from its current value of $48.29 billion in year 2023 because of professional refurbishment initiatives and consumer understanding of sustainability and cost-savings benefits (Coherent Market Insights, 2025).

Emerging economies are witnessing this trend since their economic development requires addressing environmental issues simultaneously. The growing popularity of electronic and electrical equipment in Kazakhstan has produced a similar growth pattern of electronic waste (e-waste) which scientific models indicate will generate double e-waste across the population by 2050 depending on current usage rates (UNITAR SCYCLE Programme, 2023). Effective e-waste management together with circular economy practices including refurbished electronics promotion constitutes the solution for resolving this challenge. Addressing this issue requires not only effective management of e-waste, but also promotion of circular economy practices such as the acceptance of refurbished electronics.

Kazakhstan faces significant barriers that reduce the likelihood of consumer acceptance of used electronic products. A combination of product quality concerns, low awareness, and traditional social practices deter consumers from purchasing refurbished electronics. According to research the purchasing decision for refurbished electronics depends on retailer reputation together with warranty offers price level and how the consumer perceives value but cultural backgrounds and geographic location influence the decision-making strategy (Barkhi et al., 2024). Kazakhstan witnesses an emerging sustainability opportunity because younger shoppers, especially millennials are increasingly embracing environmentally friendly consumer behavior. Widespread awareness about refurbished products together with skepticism about their reliability represent key barriers for the broader acceptance of these goods.

This study aims to assess the attitude of Kazakhstani consumers towards refurbished electronic devices and study their purchasing preferences, as well as the barriers that prevent them from accepting this purchase option. The study analyzes such dynamics to generate practical guidance for retailers as well as policymakers and

manufacturers who want to promote sustainable consumer actions and better e-waste control in Kazakhstan. The conducted research advances the development of successful circular economy promotion strategies that drive environmental sustainability in Kazakhstan (Rybina et al., 2024).

2. Literature Review

Refurbished and pre-owned electronic products saw their worldwide market grow substantially throughout recent years because customers sought affordable, sustainable alternatives to new devices. According to industry projections, the global refurbished electronics market will grow substantially to reach $94.10 billion by 2030 from its current value of $48.29 billion in 2023 because of professional refurbishment initiatives and consumer understanding of sustainability and cost-savings benefits (Coherent Market Insights, 2025). This literature review examines how Kazakhstani consumers interact with refurbished and used electronic devices amid growing concerns about e-waste and sustainable development goals.

Research in this field reveals three consistent themes: (1) theoretical frameworks explaining consumer decision-making for refurbished products, (2) global market trends and barriers to acceptance, and (3) Kazakhstan-specific contextual factors. Multiple research methods are used in studies that involve surveys and market analyses, together with behavioral modeling to illustrate trust as well as risk perception and value assessment as key determinants for consumer decisions.

2.1. Global Market Trends and Consumer Behaviors

2.1.1. Market Growth and Economic Factors

According to Transparency Market Research (2023), the refurbished electronics market will demonstrate an annual growth rate of 12.1% between 2022 and 2031 until it reaches $272.91 billion. The research showed that market expansion occurs from escalating consumer attention to prices and growing dedication to environmental issues.

Suaverdez (2022) studied electronics industry refurbishment procedures, which require performing inspections to test components and fix faulty sections, and replace broken parts for product performance quality standards. The study performed documentary research with semi-structured interviews of U.S. and U.K. refurbishing, remanufacturing, and retailing companies to show that high-quality refurbishment practices extend product lifecycles and reduce electronic waste.

Wallner et al. (2021) conducted an analysis of e-waste shows that refurbished electronics make a significant contribution to waste minimization, so standardized international standards, along with a consumer trust infrastructure, are needed.

The market for refurbished electronics operates with both promising possibilities and several obstacles in developing nations. Customers in this market accept refurbished goods instead of new items because of their extreme price sensitivity. The purchasing choices made by people remain heavily influenced by financial restrictions, which include reduced personal income alongside currency exchange shifts. According to Bhattacherjee and Adhikari (2018), economic variables coupled with growing consumer awareness and changing value perceptions, have a significant role in shaping consumer behavior when it comes to buying in developing economies.

Retailers and manufacturers must primarily adapt to the rapid expansion of these markets, impacted by diversifying consumer demand and technological advances. Furthermore, consumers now have more accessible and affordable shopping options thanks to the development of digital shopping platforms and the availability of financing options, which has increased demand for less expensive options such as refurbished gadgets.

Developing region customers depend on brand reputation to build trust since many people choose established brand names to minimize their concerns about reconditioned items. Masud et al. (2024) note that by lowering uncertainty and increasing perceived dependability, brand trust is crucial in promoting customer loyalty. The study highlights how consumer loyalty and service quality are affected by brand trust, supporting the idea that well-known companies perform as a psychological safety net for customers making riskier purchases. Moreover, it is difficult to overestimate how important e-commerce platforms are in encouraging confidence with user investigations and safe payment methods. These platforms increase consumer confidence by offering clear feedback channels and guaranteeing the security of transactions, which further affects consumer behavior when making purchases in developing economies.

The market for reconditioned electronics experienced significant expansion because customers became more aware of the advantages of reconditioned electronics alongside rising digital demand and lower prices. Cost-conscious consumers seek alternative options to new gadgets because of the worldwide expansion of the middle class, combined with the development of internet penetration. The study establishes that economic situation, together with global connectivity and digitalization, strongly influences electronic equipment demand (PwC, 2023). The observed factors can boost customer behavior, which supports the growing market for refurbished devices in Kazakhstan.

Through understanding these global trends, we can dig deeper into the context of exploring whether Kazakhstani citizens are similarly influenced by affordability, sustainability concerns, and preferences, or if there are some unique reasons that are deeply rooted in the traditional, cultural, and ethnic peculiar qualities of the nation. In contrast, in many emerging markets, like Kazakhstan's, while affordability remains a key factor in purchasing decisions, consumer awareness of refurbished products is often limited. In these regions, concerns about a lack of warranties and trust in retailers further constrain market growth. The challenges faced by Kazakhstan mirror similar barriers in other emerging markets, where education and trust-building initiatives are critical to encouraging the adoption of refurbished electronics (Barkhi et al., 2024).

These global trends provide useful guidance for understanding the Kazakhstan context, highlighting both the opportunities and challenges that exist in this growing market. Thus, we can conclude that Kazakhstan, as an emerging market, shares characteristics such as price sensitivity and relatively low consumer awareness about refurbished goods.

2.1.2. Consumer Barriers and Motivations in Emerging Markets

The UNITAR study (2023) used predictive modeling techniques that combined regression analysis and machine learning algorithms to forecast future e-waste generation by examining usage patterns. The study analyzed waste streams of 200 households, which showed that e-waste could potentially double in Kazakhstan by 2050, necessitating the immediate implementation of circular economy practices with a particular focus on refurbished electronics.

2.1.3. Synthesis of Global Market Findings

An analysis of international market patterns shows the growth of refurbished electronic products across regions, with notable geographic differences. A literature review reveals three main barriers, which include concerns about product quality, information asymmetry, and unclear warranties. Emerging markets remain in tension between their need to save money on products and their desire to demonstrate status by purchasing newly manufactured goods. Kazakhstan is in line with emerging economies in its situation, but faces particular barriers due to its weak e-waste regulatory systems.

2.2. Kazakhstan's Market for Refurbished and Pre-Owned Electronics

2.2.1. Market Status and Consumer Attitudes in Kazakhstan

UNITAR (2023) collected data through comprehensive waste audits and found that Kazakhstan generated 7.3 kg of e-waste per person in 2019, totaling 136.1 kilotonnes, with only 8.8% collected and recycled. Their longitudinal analysis of collection systems demonstrated significant gaps in the infrastructure for proper e-waste handling.

Potluri Zulpaydar and Kurmangazin (2024) conducted a survey of 300 consumers from Kazakhstani regions regarding their knowledge and confidence about buying refurbished electronics as well as their buying intentions. The researchers employed structured questionnaires backed by stratified and random sampling methods for data collection. The survey revealed that 37% of respondents were familiar with refurbished electronics, while only 14% had made such purchases. A significant portion of respondents expressed concerns about the authenticity of the refurbishment process, with 62% fearing that the overhaul claims were not genuine, and 55% doubting the reliability of after-sale service support systems. A major finding from the study described younger technology supporters who held college degrees and lived in urban areas as strong customers for refurbished goods because they pursued savings and green initiatives. Wider public adoption of refurbished products was limited because of insufficient certification standards together with unclear return protocols.

Retailers and third-party sellers are vital for establishing consumer trust and educating the public about the advantages of reconditioned equipment. Research indicates that features like clear product information, warranties, and trustworthy customer assistance are necessary to address consumer concerns and promote the usage of refurbished devices (Alyahya et al., 2023). Research findings match existing literature that shows trust issues and information unbalancedness as key barriers within emerging market environments (Barkhi et al., 2024; Rybina et al., 2024). To increase confidence and market demand, the authors endorse both public awareness initiatives and forced certification standards.

Taken together, these studies show that the Kazakhstani refurbished and used electronics market is characterized by low awareness, high perceived risk, and limited institutional trust. However, there is a clear opportunity to leverage growing

environmental awareness among young consumers by introducing robust trust-building mechanisms such as manufacturer-backed warranties and transparent refurbishment stand.

2.3. Kazakhstan's Legislative Landscape on E-Waste and Refurbished Electronics

2.3.1. Regulatory Framework and Policy Approaches

Kazakhstan's legislative framework related to e-waste management and refurbished electronics is still evolving, reflecting the country's growing awareness of environmental sustainability and circular economy principles. The "Concept of Kazakhstan's Transition to a Green Economy" sets targets that include achieving specific targets for MSW recycling rates along with full population coverage of waste collection and compliance with environmental and sanitary standards of landfills by 2030 (Partnership for Action on Green Economy, 2020). The Environmental Code of Kazakhstan operates as the primary legal instrument for e-waste under its provisions which came into effect in July 2021. The Environmental Code requires specific collection practices for electronic waste alongside hazardous substances because disposal of e-waste violates the code and drives waste toward recycling companies under authorization. The Environmental Code applies waste classification rules through its extended producer responsibility provisions regarding waste management (Parliament of the Republic of Kazakhstan, 2021). These targets function as transformation tools to support systematic changes that encourage sustainable practices such as reuse and recycling of electronic items. However, specific regulations targeting the refurbishment, resale, and certification of pre-owned electronics remain underdeveloped, which contributes to consumer skepticism regarding product quality and warranty assurance (Rybina et al., 2024).

2.4. Global Approaches to E-Waste and Refurbishment

The European Union supports the circular economy through extensive legislation while offering protection to consumers in the market of refurbished electronics. The EU Waste Electrical and Electronic Equipment Directive (WEEE Directive 2012/19/EU) includes measures for e-waste collection and treatment and recycling which boosts resource efficiency and environmental sustainability (European Commission, 2024). The Right to Repair Directive (2021/0213(COD)) enables consumers through provisions for repair access together with spare part availability that helps increase product durability and promotes refurbishment practice (Collini et al., 2022).

EU consumer protection laws provide strict rules regarding warranties and product safety standards in refurbished goods are contributing to the growth of the market by increasing consumer confidence (European Consumer Organization, 2022). According to Wallner et al (2021), EU markets show higher acceptability of refurbished electronics as they show higher adoption trends compared to emerging markets. This regulatory clarity reduces consumer concerns and fosters more positive attitudes.

Regional examples from Japan and South Korea demonstrate valuable methods for both waste electronic management improvements and refurbished product acceptance by consumers. Since the implementation of Japan's Home Appliance Recycling Law in 1998 the country has created a strong system for collecting end-of-life electronic waste which includes recycling and proper waste management and device refurbishment support through mandatory manufacturer standards and certification protocols (National Institute for Environmental Studies, 2020). South Korea established strict extended producer responsibility framework through the Act on Resource Circulation of Electrical and Electronic Equipment and Vehicles to ensure producers and importers handle electronic equipment from collection to recycling and refurbishing (Korea Legislation Research Institute, 2020). Consumer trust would increase in Kazakhstan by implementing manufacturer participation and certification programs following the practices of these countries.

2.5. Synthesis of Kazakhstan-Specific Findings

A case study of Kazakhstan highlights key barriers to e-waste management while providing new perspectives in the refurbished electronics sector. The study finds that infrastructure limitations along with regulatory shortcomings are the main

obstacles, but points to the growing level of environmental awareness among Kazakhstani youth as a catalyst for future development.

This review examines consumer behavior towards refurbished and used electronics with a particular focus on the market context of Kazakhstan. The literature makes several important contributions: establishing a theoretical framework for understanding consumer decision making, documenting global market trends, and identifying specific challenges in emerging markets such as Kazakhstan.

Future research should examine how trust-building mechanisms specific to the cultural context of Kazakhstan can increase the acceptance of refurbished electronics. In addition, research examining the effectiveness of manufacturer certification programs and trade-in rebates would provide valuable information for retailers and policymakers seeking to advance circular economy initiatives. The aim of this study is to Kazakhstani consumer perspectives on refurbished electronics to create strategic market plans and policy rules that address identified barriers.

3. Methodology

3.1. Primary Data Collection

3.1.1. Interview with Electronics Retailers

The focus of this research in the early phases involved interviewing company representatives of major electronics retailers to gain an understanding of their e-waste management and recycling practices for electronics and determine the reasons for this behavior. The aim was to understand the retailers' actions in terms of refurbished and pre-owned electronics, in terms of a sustainable practice and the degree to which they support the circular economy. However, despite numerous attempts to contact these retailers, no positive responses were received, preventing the planned interviews from taking place. As such, the research focus shifted from the retailer end to the consumer end, focusing on consumer behavior of used and pre-owned electronic products in Kazakhstan.

3.1.2. Survey

The following stage involved the development and distribution of a survey aimed at investigating the behavior of consumers about refurbished and pre-owned electronics. The initial pilot of the survey was first conducted with a small group of participants to test the clarity and relevance of the questions. The pilot group consisted of only Nazarbayev University 2-year Master of Engineering students. The survey was then expanded after advocating feedback and distributed to a greater sample. The respondents are Bachelors and Masters students at NU. The survey was designed by Google Forms and distributed through Telegram Chats and university emails.The survey questions are given in Appendix A. 16 questions were designed for the survey to examine on some factors of consumer attitude towards refurbished products such as pricing, trust and perceived risk. These data were crucial towards understanding barriers and drivers for purchase of refurbished electronics in Kazakhstan.

3.2. Secondary Data Collection

3.2.1. Data Collection from Retailers Websites

This step included detailed investigation of websites of the largest retailers operating in Kazakhstan with electronics products – Sulpak, Technodom, Alser, Belyi

Veter, Mechta, Pulser, DNS Shop, Evrika, Freedom Mobile. This analysis was to compile information about availability of refurbished offered devices, what devices and other services (i.e. trade in, repair, e-waste recycling or collection program) are offered. The purpose of conducting this website investigation was to act as the preliminary part of understanding the market dynamics of refurbished electronics in the country. The following table contains findings from websites of the biggest electronics retailers in Kazakhstan.

Table 1. Findings from retailers websites.

Retail company	Do they sell refurbished products?	Do they have trade-in options?	Do they offer repair services?	Do they offer e-waste recycling or collection programs?
Sulpak	No explicit mention	Yes, for Apple and Samsung products. Customers can exchange their old gadgets for a discount on new purchases.	Sulpak provides repair services through their "Express-Service" program and "Hitechnic" service centers. These services are designed to assist customers with the installation and maintenance of their electronic devices.	No explicit info
Technodom	No explicit mention	Technodom offers a Trade-In program that allows customers to exchange their old gadgets for discounts on new purchases. Customers can bring their old devices to any Technodom store, select a new device participating in the promotion, and receive a discount of up to 70% after evaluation. Additionally, there is an online Trade-In option where customers can exchange their old smartphones for new ones with instant benefits.	No specific information	No specific information

Alser	No explicit mention	Yes. Customers can get an evaluation from a specialist in Alser stores and receive a corresponding discount on their purchase.	Alser provides repair services in following cases: The warranty service period for the product has not expired. There are no physical or mechanical damages. The product was used for its intended purpose. There was no external interference with the device, including unauthorized disassembly or repairs performed in non-authorized service centers.	No specific information
Belyi Veter	No explicit mention	The company offers trade in options for specific items	Bely Veter has its own service centers for repairing devices purchased in their stores. It's recommended to check with the specific store or their official website.	No specific information
Mechta	No explicit mention	Yes They assess Appearance, display condition, functionality of all features, and presence of the original accessories. And eventually provide a discount	"Mechta" typically does not have its own service centers. Repairs are usually handled through partners or the manufacturers of the devices.	No specific information
Pulser	No explicit mention	No explicit mention	Pulser specializes in selling electronics but does not provide repair services.	No specific information
DNS Shop	No explicit mention	No explicit mention	DNS has its own service centers for repairing devices purchased in their stores.	No specific information
Evrika	No explicit mention	Up to 90% discount	Evrica typically does not provide repair services. Repairs are handled through the manufacturers'	No specific information

			warranty services.	
Freedom Mobile	No explicit mention	"A discount on a new one! You can trade in multiple old devices to get a bigger discount. Devices must be in working condition (able to turn on/off). Devices eligible for Trade-In discount: - Samsung - Android smartphones from 2018 and newer. - iPhone 7 and newer - iPad from 2016 and newer - AirPods - Apple Watch Series 3 and newer - MacBook from 2017 and newer 📱 **Xiaomi, Honor, Oppo, Vivo, and Realme** – Android smartphones from 2018 and newer."	Freedom Mobile may offer repair or replacement services for devices purchased from them.	No specific information

Overview of Tech Retailers and Their Offerings of Refurbished and Pre-Owned Products in Kazakhstan

The biggest tech retailers in Kazakhstan such as Sulpak, Technodom, Alser, and so on do not specifically mention the sale of refurbished products on their websites. On the other hand, this means that there is a limited utilization of these major retailers to refurbish or market pre owned electronics.

There are also trade-in programs from Sulpak and Technodom, which allows their customers to exchange their old electronics for discounts on their new products. For example, this is available for Apple and Samsung. Freedom Mobile also gives a trade-in discount allowing the customers to exchange their older models (such as iPhones, Androids) for better offers on new ones. Customers can get an evaluation and a discount depending on the condition of the device through trade-in with Alser and

Mechta, and they even have options to replace the device with trade-in. But other retailers do not mention as widely that Evrika will offer up to a 90% discount on trade-ins.

The fact that the retailers have not provided clear information on these refurbished products across their websites might hint that these retailers do not have a segment fully focused on refurbished products. But retailers seem to be more concerned about selling newer products and trade in discounts than advertising or even selling many refurbished inventory.

4. Survey results

To better understand public awareness and attitudes towards electronic refurbished products in Kazakhstan, we conducted a survey among 109 participants. The questions aimed to assess participants' familiarity with refurbished electronics, their purchasing behavior, perceptions of quality and trust, as well as environmental considerations.

The first question focused on general awareness: "How familiar are you with electronic refurbished products?" The responses varied, reflecting different levels of knowledge and exposure to the concept.

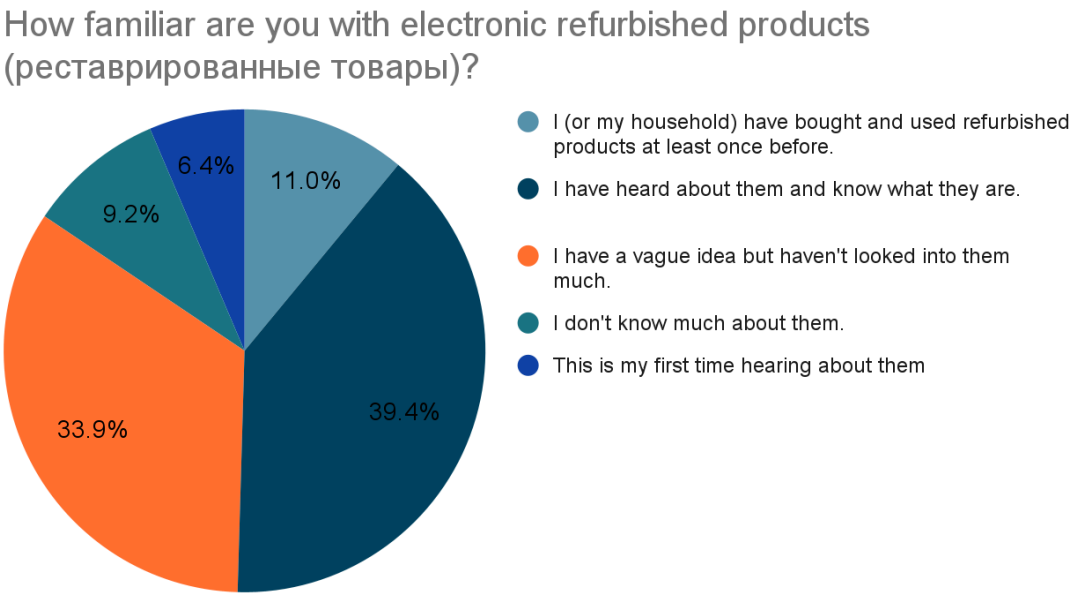

Figure 1. Awareness of refurbished products among respondents

A total of 109 respondents participated in the study showing that almost 40% of participants were familiar with refurbished products while 33.9% had a loose understanding of them. Among the study participants only 11% mentioned acquiring and utilizing refurbished products either for themselves or their family members. A significant number of 9.3% respondents expressed limited knowledge about refurbished products although 5.8% participants were encountering them for the first time.

Public awareness about refurbished electronics stands high but people seldom make purchases or use these products. Refurbished products need more consumer education and trust building in order to expand their market share.

On the next graph the portion of the survey measured which product features respondents considered better between refurbished goods and fresh items.

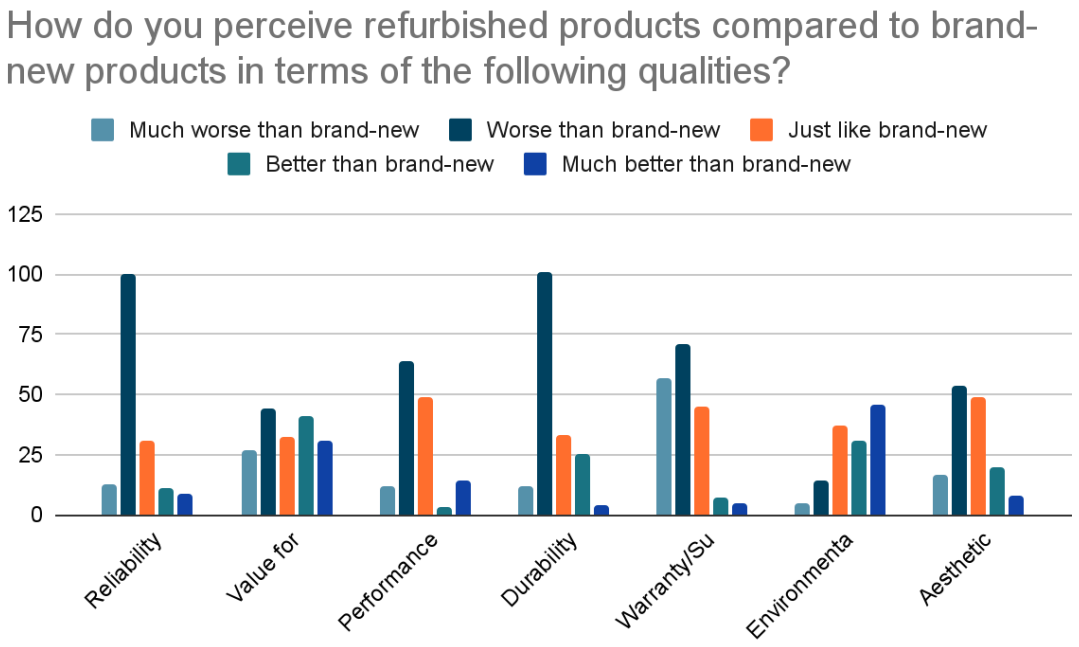

Figure 2. Comparison of brand-new and refurbished products among respondents

Refurbished items were generally rated poorly against new models for all quality aspects including reliability and performance and durability according to the majority of respondents. Most survey participants gave unfavorable ratings to the warranties and upfront support received. Refurbished items received positive assessments for their value proposition since consumers regarded them on par or above new items. Public perception presents refurbished products in a positive light when it comes to their effect on the environment. Comments regarding the beauty of refurbished goods lacked particular influence in one direction or another.

Consumer appreciation of refurbished products increases because they are seen as environmentally friendly and cost-effective while some reservations remain about their quality and durability.

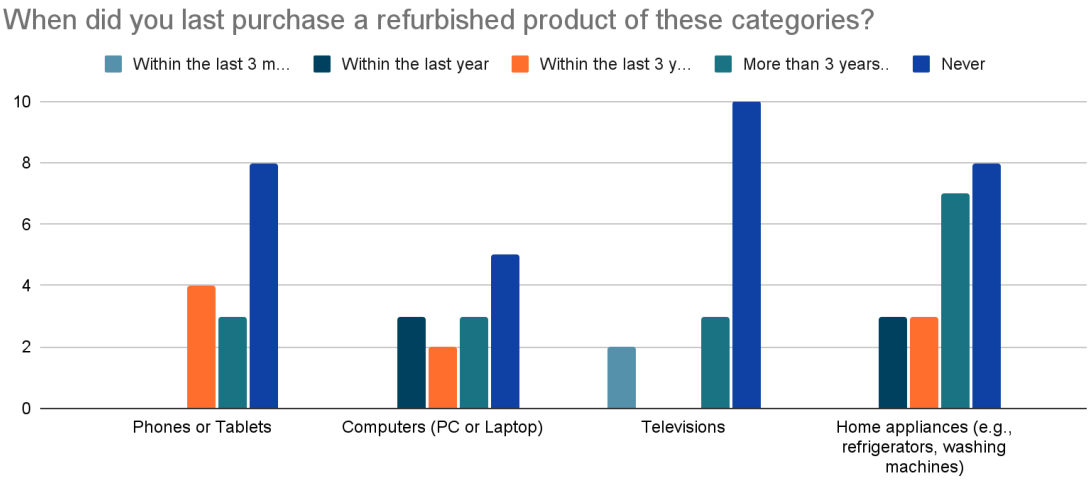

Figure 3. Frequency of buying refurbished products.

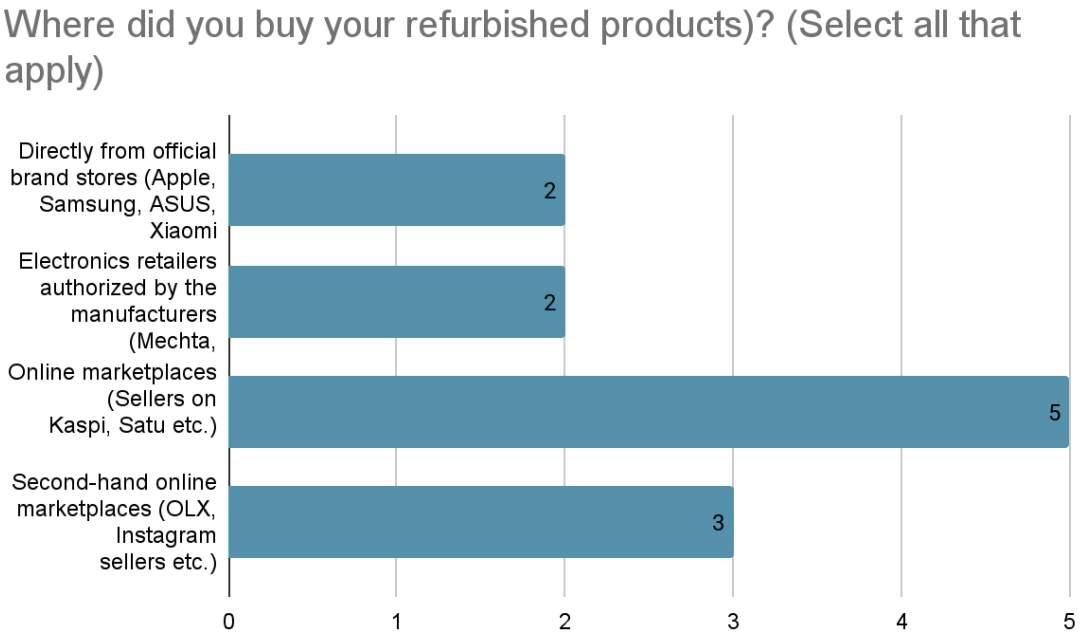

Figure 4. Place of buying refurbished products.

Among respondents who had experience purchasing refurbished electronics, most indicated that their purchases occurred more than three years ago, regardless of product category (phones, computers, TVs, or appliances). This suggests that refurbished purchases are relatively infrequent.

When asked where they bought these products, the most common sources were online marketplaces (e.g., Kaspi, Satu) and second-hand online platforms (e.g., OLX, Instagram sellers), selected by 50% and 40% of respondents, respectively. Fewer people bought from official brand stores or authorized electronics retailers, each chosen by

only 20% of participants.

These results highlight that while refurbished purchases do happen, they are rare and often made through informal or peer-to-peer channels.

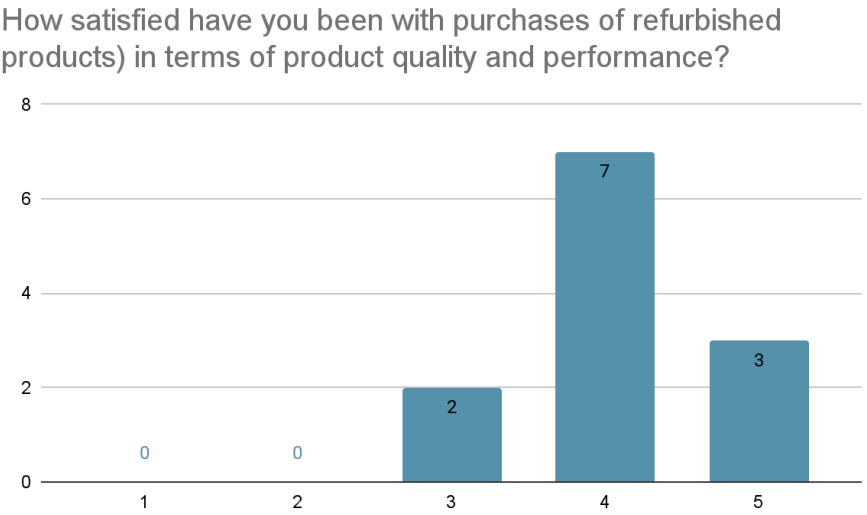

Figure 5. Satisfaction of buying refurbished products.

Figure 6. Open question on respondents' experience.

Under the survey participants evaluated their satisfaction with the performance quality standards of refurbished goods. Out of 12 respondents:

- Among the respondents 3 out of 12 maintained moderate satisfaction rates by providing a score of 5 out of 10.
- The survey participants evaluated their satisfaction at 7 out of 12 by 58% indicating they were generally dissatisfied.
- Only one person out of ten participants indicated dissatisfaction by giving their refurbished products a rating of 1 out of 10. None of the respondents rated their satisfaction at 8–10.

Soon after their purchase most consumers find refurbished products satisfactory but product quality and performance need improvement.

Survey participants were asked about any encountered problems with their purchased refurbished items. Key findings include:

The respondent stated that the product did not survive for an adequate amount of time. The product uses up its life span more quickly than people initially anticipated. Many refurbished products achieve customer satisfaction levels but selected consumers doubt the longevity of these items.

Overall, the survey data shows that most customers find satisfaction with refurbished items although problems with inconsistent quality and durability might affect their overall contentment. The resolution of these problems will strengthen customer trust thus driving them to buy from you again.

The survey questions analyzed which factors would motivate customers to buy refurbished items. The survey revealed that 71 respondents picked lower product prices compared to new products as their main influence (65%). Refurbished products with manufacturer certification stood as the second vital factor for respondents who made up 48% (52 participants).

More trusted sellers providing refurbished products together with a larger selection of refurbished items (34% and 27% respectively) were seen as critical (37 respondents and 29 respondents). The better warranty and return policies of refurbished products proved appealing to 28 customers and accounted for 26% of respondents. A minimal number of participants declared that they totally reject purchasing refurbished items at any time.

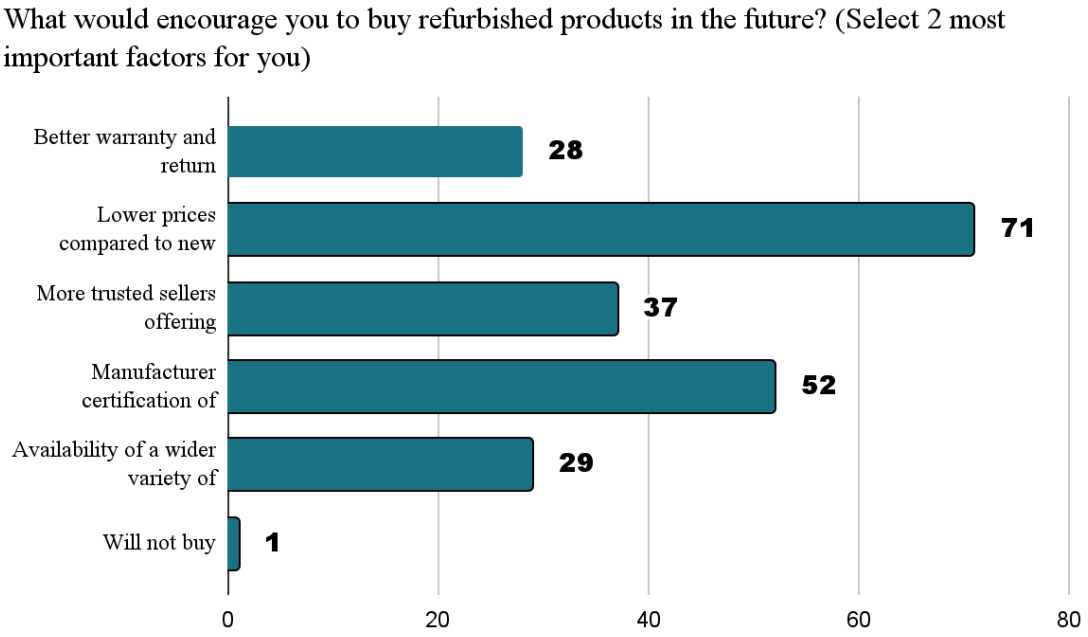

Figure 7. Factors Encouraging the Purchase of Refurbished Products.

Next, the survey asked participants about their intention to acquire refurbished goods from various categories. Survey results show that customers exhibit different behaviors when it comes to refurbished electronic devices.

People showed an unwillingness to shop for refurbished phones or tablets in large numbers. Respondents from a large segment of 44 people (40%) responded that they would not purchase refurbished phone or tablet devices. They rated their willingness as highly unlikely to purchase refurbished phones or tablets. Just 10% were very likely to buy refurbished products. 14 respondents (12.8%) were neutral in their choice. The negative perception toward refurbished mobile devices shows that customers worry about technology becoming obsolete in this sector quickly.

The respondents evaluated used computers (PC or Laptop) with a different willingness proportion. Approximately 60% indicated highly unlikely interest in purchase yet 25% showed neutrality towards buying such items. A total of 15 respondents (14%) expressed strong probability of buying refurbished computers while other 15 respondents (14%) admitted they would definitely purchase such products. Potential customers tend to welcome refurbished computers at higher levels than mobile devices because computers remain usable for longer periods and technological advancements move more slowly in this section.

Televisions demonstrated average interest in refurbished products among the survey participants as 36 people (33%) indicated avoidance of purchase whereas 38 (35%) remained neutral. Refurbished television models were considered attractive to purchase by 15 respondents (13.7%) who reported likelihood while 20 respondents (18.3%) declared strong intentions to buy. The willingness to purchase refurbished televisions exceeds the interest in phones and tablets because televisions typically have longer lifespans and higher prices that drive consumers toward used options.

The responses regarding refurbished home appliances remained divided with 43 respondents (39.4%) strongly refusing to buy such products and 33 respondents (30.2%) selecting neutral options while 20 respondents (18.3%) showed interest along with another 13 respondents (12%) who strongly expressed their desire to purchase. While the interest in refurbished appliances seemed moderate respondents demonstrated substantial opposition due to questions about how well such products would perform over time.

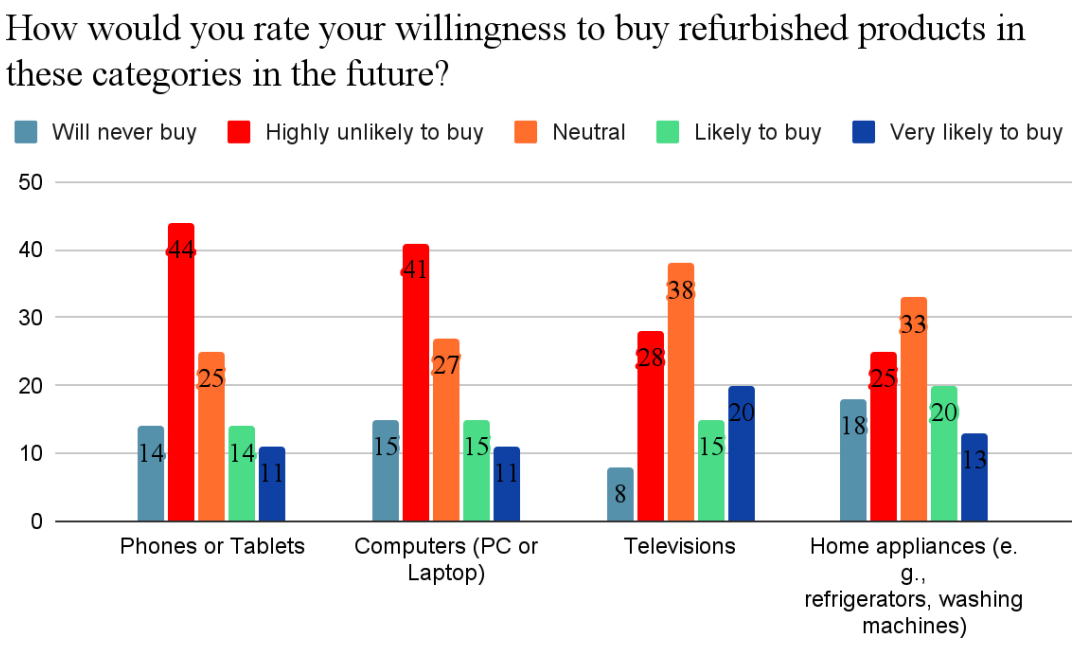

Figure 8. Willingness to Buy Refurbished Products in Different Categories.

The survey also assessed the comfort levels of people who purchase refurbished products by different sellers. Official brand stores emerged as the preferred location for buying refurbished products since 99 respondents or 90.8% would buy only from known brands such as Apple and Samsung and other well-received manufacturers.

Brand reputation serves as a vital factor which affects customers' trustworthiness and drives them toward the purchase of refurbished products.

The majority of individuals chose electronics retailers endorsed by manufacturers with 79 participants (72.5%) selecting this source. The choice highlights why consumers should trust authorizing refurbished product channels through well-known brands since these channels are perceived as more reliable than other options.

Online marketplaces Kaspi and Satu attracted 28 respondents (25.7%) as customers while general online platforms experienced a lower level of comfort from buyers. The research showed that second-hand online marketplaces including OLX and Instagram sellers were rejected by most participants since they made up only 9 of the 109 respondents (8.3%).

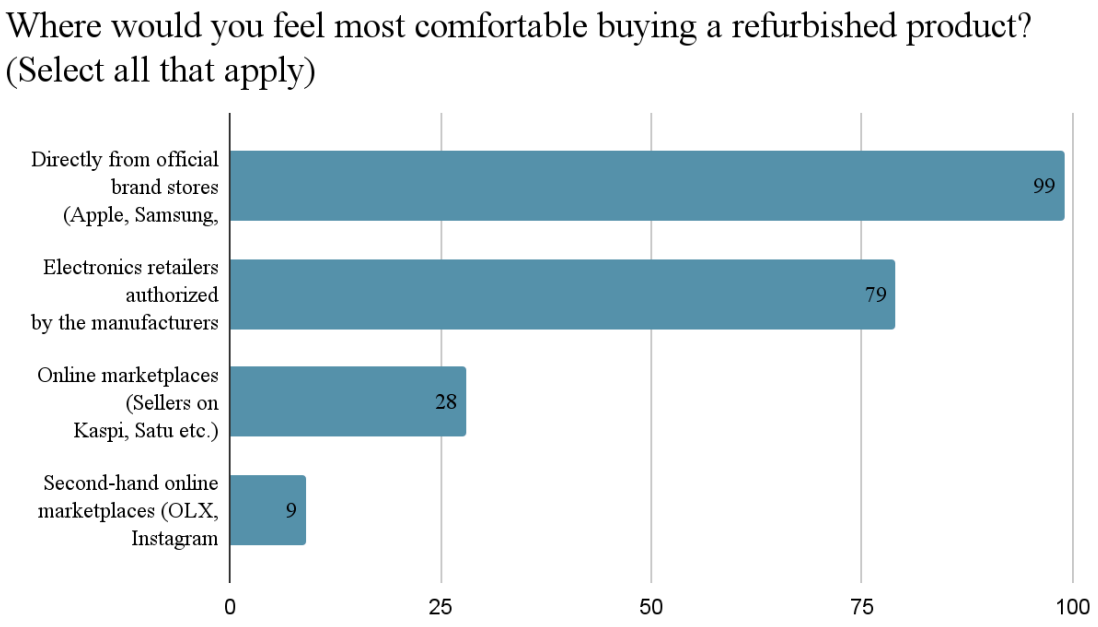

Figure 9. Preferred Sources for Purchasing Refurbished Products.

Next question of survey examined which obstacle presented the major challenge for consumers interested in buying refurbished products. Most consumers lack confidence either in the sellers or their product refurbishing methods according to the survey data where 62 respondents (57.4%) shared this finding. The survey demonstrates trust stands as a primary influence on customer buying decisions thus suppliers must provide clear evidence about refurbished items' quality and authenticity.

The third place in identified challenges was the lack of warranties combined with few return options which 24 participants selected or 22.2% of the total respondents. Although trust takes priority customers still want robust warranties together with generous return policies because these elements help reduce the risks they perceive with refurbished products.

Respondents who detected excessive pricing in their purchases amounted to just 5 individuals (4.6%) which implies price concerns take a backseat behind trust and stringent guarantee supply. The limited availability of desired brands/models presented a challenge to two respondents which amounted to 1.9% of the total respondents.

Negative perceptions regarding second-hand products (social stigma related to used items) functioned as a major obstacle according to 15 survey respondents (approximately 13.9% of participants) while this proved to be the least selected response among participants.

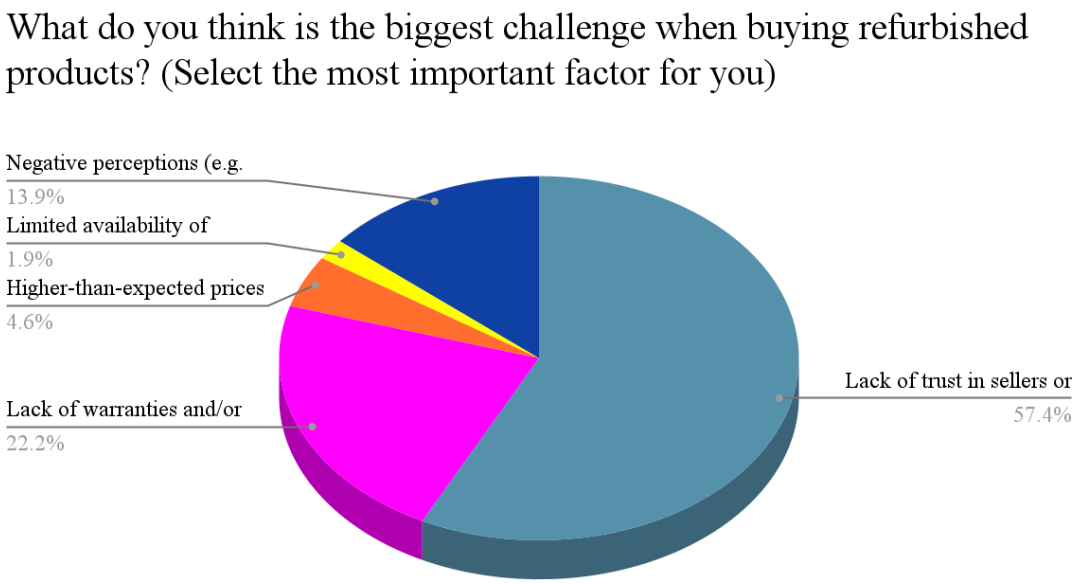

Figure 10. Biggest Challenge When Buying Refurbished Products.

The next section of the survey starts with the frequency with which respondents replace different types of electronic devices, categorized into four timeframes: every year, every 2-3 years, every 4-6 years, and less frequently than 6 years. This question included phones/tablets, computers (PCs or laptops), home appliances (e.g., fridges, washing machines), and televisions.

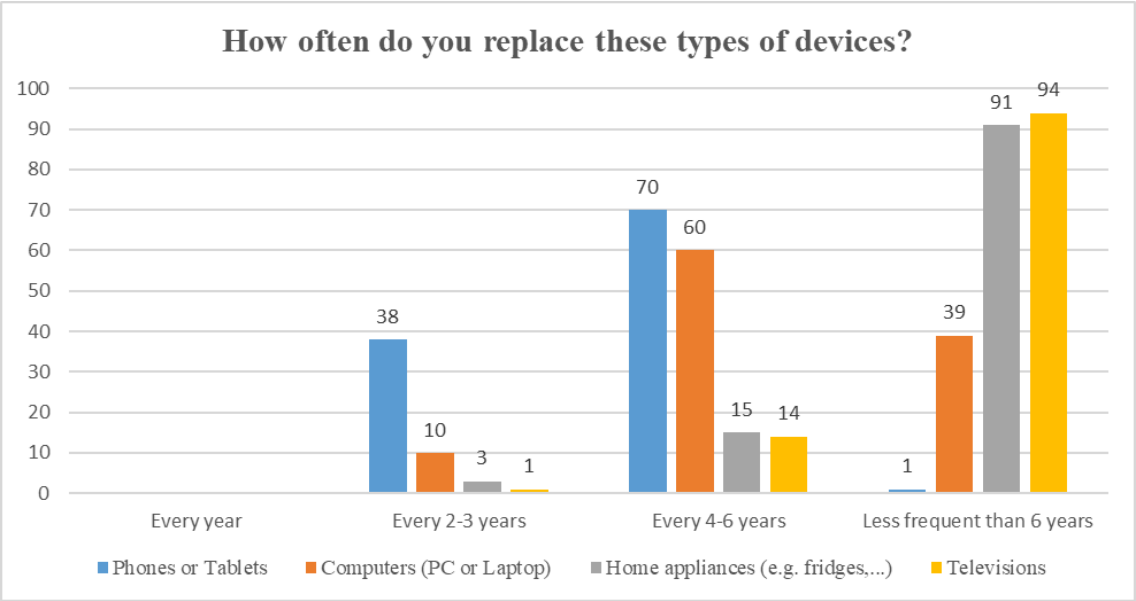

Figure 11. Frequency of Device Replacement Among Respondents

Figure 11 shows that the most common replacement period for phones/tablets is every 4-6 years (70 respondents), followed by 2-3 years and a small percentage of respondents keep their devices for more than 6 years. For computers (PCs or laptops), a significant portion of respondents replace their computers every 4-6 years (60 respondents), while a notable percentage prefers to replace their computers less frequently than 6 years. Only 10 respondents update their PCs and laptops every 2-3 years. As shown in Figure 11, larger household electronics are overwhelmingly replaced less frequently than every 6 years (91 respondents for each category).

Next, the second survey question in this section delves into the specific reasons behind smartphone replacements.

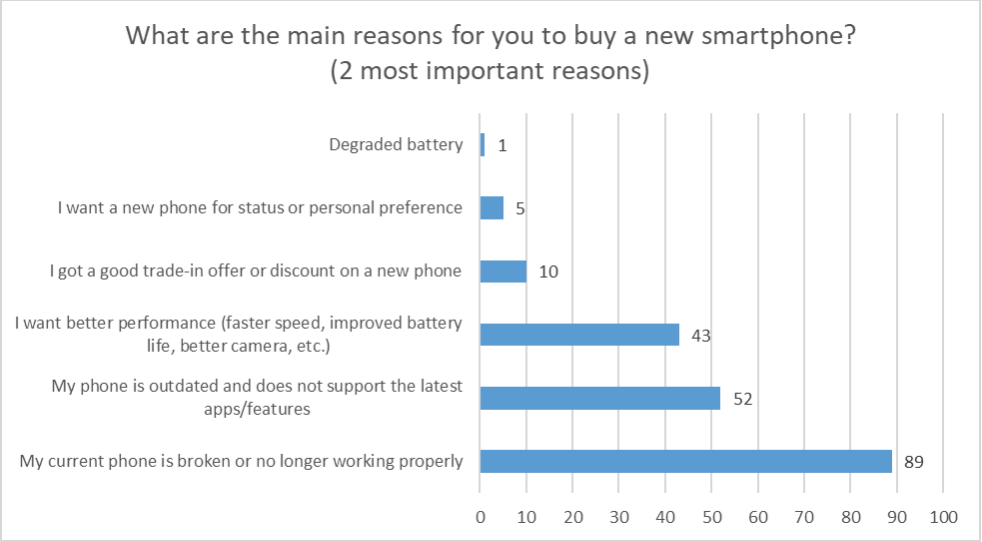

Figure 12. Primary Reasons for Purchasing a New Smartphone

The survey asked respondents to identify primary reasons for purchasing a new smartphone, with each participant selecting up to two reasons. A total of 109 responses were recorded.

Figure 12 shows that the most common reason is that their current phone is broken or no longer functioning properly and it accounts for 81.4% (89 respondents). The second most frequent reason is that the phone is outdated and does not support the latest apps or features. This answer is chosen by 47.7% (52 respondents). 39.5% (43 respondents) purchase a new phone for better performance, such as improved speed, battery life, or camera quality. A much smaller proportion of respondents (10 respondents) chose a good trade-in offer or discount. Only 4.7% (5 respondents) purchase a smartphone for status or personal preference. The least common reason is a degraded battery, cited by just 1 respondent.

The next question of the survey is focused on disposal methods for non-functioning smartphones. The survey asked respondents about various actions that respondents take when dealing with broken or non-functioning smartphones. Participants were allowed to select multiple responses.

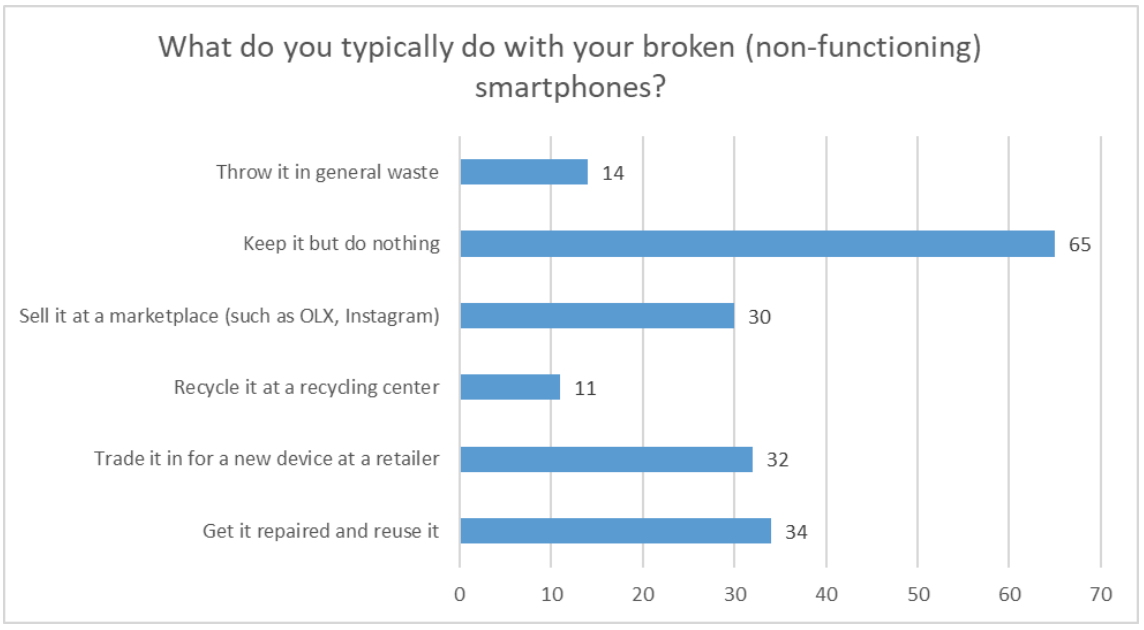

Figure 13. Actions Taken with Non-Functioning Smartphones

Figure 13 shows that the most common response, chosen by 59.3% (65 respondents), is to keep the broken phone without doing anything while 31.4% (34 respondents) prefer to get their phone repaired and continue using it. Almost the same

percentage of respondents (30 respondents) chose to sell the device on a marketplace (such as OLX or Instagram). Only 12.8% (14 respondents) dispose of their broken smartphones in general waste and just 10.5% (11 respondents) recycle their smartphones at specific recycling centers.

The next question of the survey also focused on various disposal methods chosen by respondents to handle their old but still working smartphones. Participants were allowed to select multiple responses.

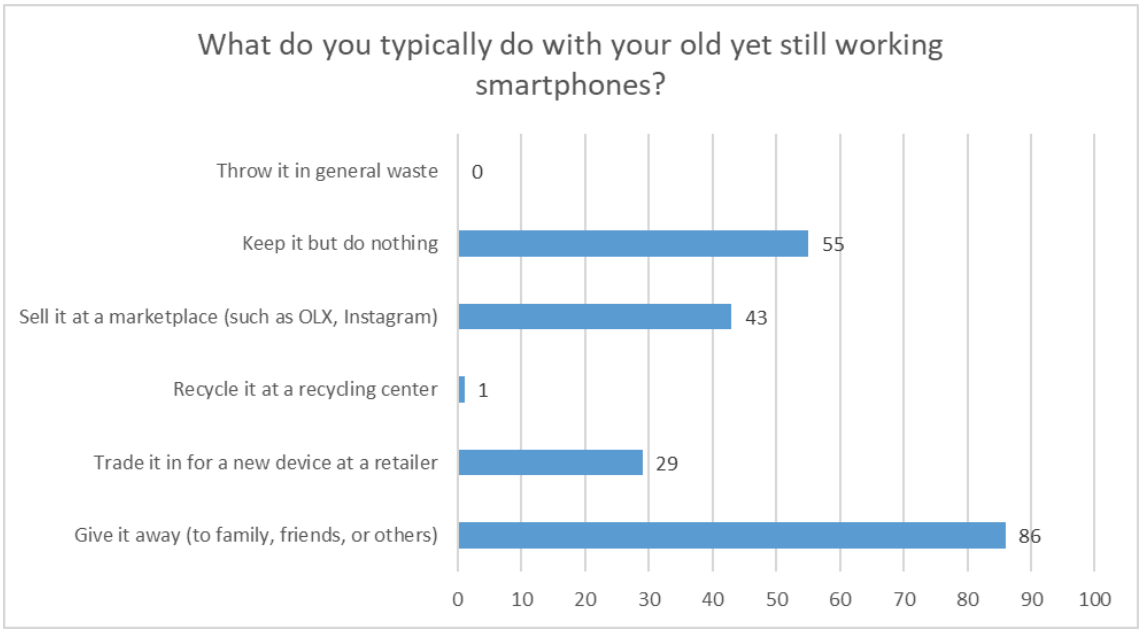

Figure 14. Actions Taken with Old but Functioning Smartphones

As shown in Figure 14, the most common action, chosen by 79.1% (86 respondents), is to give the device away to family, friends, or others. The other three choices were approximately closely distributed. 50% (55 respondents) prefer to keep their old phone without using it and 39.5% (43 respondents) sell their device on marketplaces such as OLX or Instagram. Recycling is extremely rare, with only 1.2% (1 respondent) taking their phone to a recycling center. In addition, from Figure 14, it can be seen that none of the respondents reported throwing their old but functional smartphones in general waste.

The last question of this section is about the motivation of respondents to recycle or trade in their old electronics. The survey asked respondents to identify key factors that would encourage them to recycle or trade in, with each participant selecting up to two reasons.

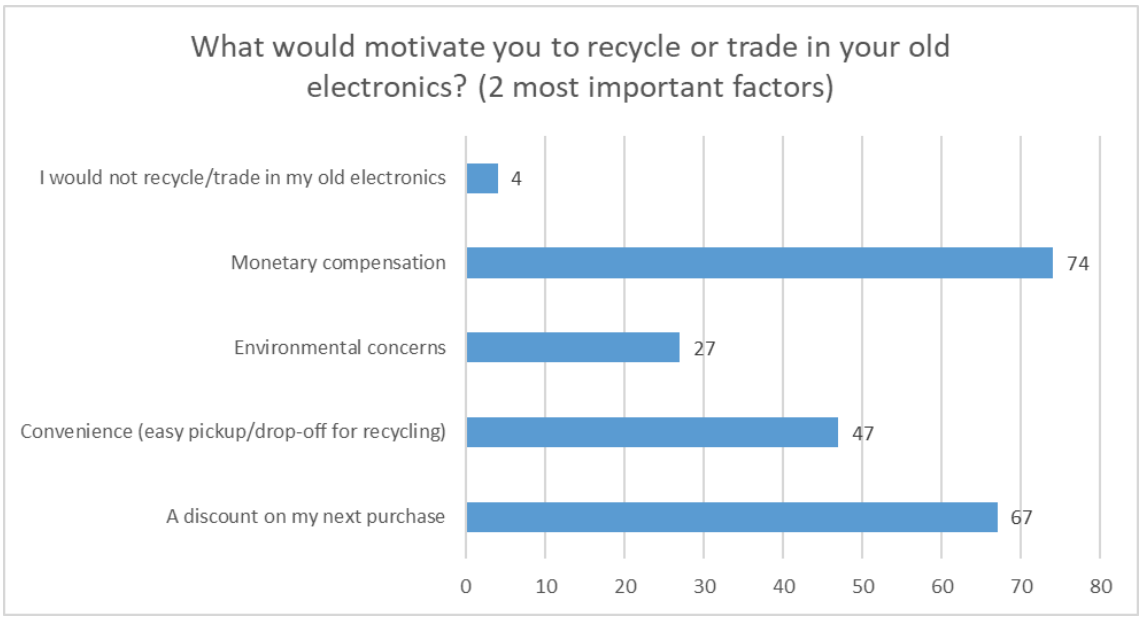

Figure 15. Factors Motivating Recycling or Trade-In of Old Electronics

From Figure 15, it can be seen that the most influential factor is monetary compensation, chosen by 67.4% (74 respondents). The next popular choice is a discount on their next purchase, which accounted for 61.6% (67 respondents). 43% (47 respondents) consider convenience, such as easy pickup or drop-off, as a significant motivator. 24.4% (27 respondents) cited environmental concerns as a reason for recycling or trading in their devices. Lastly, only 4 respondents indicated that they would not recycle or trade in their old electronics under any circumstances.

5. Discussion

This section presents the results of the survey that provide important information on general awareness and early experience of rebuilt electronic products among Kazakhstani consumers. Refurbished electronics aren't new, with nearly 40 percent of respondents that they were not familiar with refurbished electronics and 33.9 percent saying they were familiar with them but were not sure, but actual adoption is low, with only 11 percent indicating that they or their household had ever purchased such products. Awareness of the problem does not equate with action - in fact, it indicates a large intention–behavior gap. The younger, digitally literate group among whom it was expected that awareness would positively correlate with adoption. Nevertheless, the results show that awareness, which still too often fails, cannot conquer the skeptical instinct regarding refurbished items.

Further clarity is provided by the perception data itself. Across key performance indicators – reliability, durability, and support services – refurbished products were consistently evaluated to be poorer than new products. On the other hand, refurbished products scored well on value for money as well as environmental impact. This contrast brings out a fundamental tension: consumers appreciate on economic and ecological terms, but adopt decisions based on the relative unknowability of quality and life. These results confirm previous work on the use of perceived risk in refurbished markets. But even among the students and young professionals—usually the earliest adopters in these situations—simply the skepticism still seemed so strong. This implies that market immaturity and absence of institutional trust (no observed manufacturer backed refurbishment ecosystem) are important here as well.

Another quite unexpected result was the frequency of refurbished purchases, as most of the respondents indicated they had never done such purchases and the second most popular choice was "more than 3 years ago". This suggests there is a strong possibility that even those who attempt to use refurbished products fail to come back to the category because of negative experience or no repeat marketing. The informal platforms like OLX and Instagram were the most widely used means of procuring most of the refurbished products. This fact is even more worrying given that informal sources lack, among other things, quality guarantees, certification and return policies that may contribute to the distrust observed by respondents in other questions within the survey. Systemic Kazakhstan market issue is that of the lack of visible certified refurbishment

options in the formal retail space.

The most surprising part though is, there's very little trust in the current ecosystem. At least, many consumers do not seem aware of any certified refurbishment process existing at all. Respondents used the language of the statement that 'certified refurbished are more reliable' but the meaning wasn't specified—more reliable than what? It should be noted though, that one of our key pieces of data indicating the comparison against which our data is supposed to compare, is against non-certified refurbished products sold through informal channels, which indicate a more significant problem in understanding what in the Kazakhstani sense "certified refurbished" means, or is offered or promoted at all.

Therefore, this section suggests that although issues of environmental benefit are relatively well known and appreciated, consumption behavior is influenced mainly by risk aversion and previous adverse experiences. The key problems include: sellers and refurbishment and lack of trust in the system; infrequent and inconsistent consumer experiences; absence of certified or manufacturer-backed options; reliance on informal platforms without quality control; issues with terminology like "certified refurbished".

These findings indicate that building consumer trust through transparency, regulation, and certification is essential if refurbished electronics are to gain wider acceptance in Kazakhstan. Unless addressed, these foundational issues will continue to block the development of a viable circular electronics market.

The survey asked respondents to identify the most important factors encouraging them to buy refurbished products in the future. The most significant factor was lower prices compared to new products, selected by 66.2% of respondents. This finding aligns with the general perception that refurbished items offer substantial cost savings over new products, making them more attractive to budget-conscious consumers. Price sensitivity is expected, particularly in markets where consumers may seek alternatives that provide good value for money.

The second most important factor was manufacturer certification of refurbished products, chosen by 45.6% of respondents. This indicates that consumers highly value the assurance of quality provided by manufacturer-backed refurbishing processes. Certified refurbished items are perceived as reliable and safe compared to products without any certification, which helps alleviate concerns over the potential risks

associated with buying pre-owned goods. This is a critical insight for retailers and refurbishers, as they can differentiate their products by offering certification and emphasizing the testing and reconditioning processes involved.

Following this, more trusted sellers offering refurbished products was selected by 32.4% of respondents, further emphasizing the importance of trust. Consumers prefer purchasing from established retailers or well-known platforms that offer guarantees, certifications, and after-sales support. Sellers who can build a reputation for trustworthiness will likely see higher consumer interest.

Interestingly, better warranty and return policies were less frequently cited, with 25% of respondents selecting it as a key motivator. While warranties are important, they appear to be secondary to price and certification, suggesting that consumers may prioritize financial considerations and product authenticity over the assurance of return policies.

The survey also explored consumer willingness to buy refurbished products in different categories. The results indicate significant variation in consumer willingness across product types. Phones or Tablets were the least favored category, with many respondents choosing “1 – Will never buy” or other negative responses. This is likely due to the rapid pace of technological innovation in mobile devices, with consumers potentially perceiving refurbished phones or tablets as outdated or too risky compared to new models. Consumers may also feel that mobile devices, which are often used for high-stakes personal tasks, need to be as reliable as possible, making them less inclined to opt for refurbished versions.

In contrast, Computers (PC or Laptop) received more favorable responses, with a significant number of respondents selecting “3” and “4”, indicating moderate to strong interest in refurbished computers. This reflects the fact that computers generally have a longer lifespan than mobile devices and experience slower technological changes, making refurbished options more appealing.

Televisions also garnered a relatively higher willingness to purchase refurbished products, with more respondents selecting “3” and “4” ratings, suggesting moderate interest in this category. This could be due to the higher cost of new televisions, where consumers may perceive refurbished models as a good way to save money on a product that still meets their entertainment needs.

Lastly, home appliances such as refrigerators and washing machines were among the least favored categories for refurbished purchases. Many respondents selected “1 – Will never buy”, indicating a lack of interest in refurbished home appliances. This likely reflects concerns about durability, reliability, and potential performance issues with essential household items. Consumers may prioritize new, guaranteed products when it comes to large and crucial appliances.

When asked about the biggest challenges consumers face when purchasing refurbished products, 58.8% of respondents indicated that lack of trust in sellers or their refurbishing processes was the primary issue. This emphasizes the importance of transparency and quality assurance in the refurbished products market. To increase sales, sellers must address this concern by ensuring that their refurbishment processes are clear, reliable, and backed by certifications.

The second biggest challenge, selected by 22.1% of respondents, was lack of warranties and/or lack of generous return policies. This finding supports the idea that, while trust in the seller is paramount, consumers also seek reassurance through solid warranty offers. Offering robust warranties and return policies can reduce the perceived risk of buying refurbished products, particularly for first-time buyers.

Other challenges cited by respondents include higher-than-expected prices for refurbished items (11.8%) and limited availability of desired brands/models (5.9%). These factors suggest that some consumers feel that refurbished products may still be priced too high relative to new ones, and that they may not always find the specific models or brands they are looking for.

Negative perceptions (e.g., social stigma) about second-hand electronics were the least frequently chosen challenge, with only 2.9% of respondents selecting this option. This suggests that concerns about the social stigma surrounding second-hand products may not be as significant in Kazakhstan as in some other markets, possibly due to a growing acceptance of refurbished goods as a legitimate alternative to new items.

When it comes to where consumers feel most comfortable purchasing refurbished products, 88.2% of respondents chose official brand stores (e.g., Apple, Samsung, ASUS). This underscores the strong consumer preference for buying refurbished products from well-established and trusted sources. Additionally, 69.1% of respondents indicated they would be comfortable purchasing from electronics retailers authorized by manufacturers (e.g., Mechta, Technodom, Sulpak), reinforcing the idea

that trust and certification are critical.

On the other hand, online marketplaces (e.g., Kaspi, Satu) were selected by 23.5% of respondents, and second-hand online marketplaces (e.g., OLX, Instagram sellers) were the least preferred, with only 7.4% indicating comfort with these platforms. This highlights the importance of purchasing from verified, reputable sellers rather than unregulated or peer-to-peer platforms.

It was found that respondents replace their phones and tablets relatively frequently, with many doing so every 2–6 years while home appliances and televisions tend to be replaced far less often. It usually takes more than 6 years or more. These results align with the general global trend that people tend to update their small personal electronics like smartphones or tablets more frequently than larger appliances and televisions. The main reason for that could be due to the rapid technological advancements of these devices. In addition, home appliances and televisions cost more and can be used for longer periods before being replaced.

When examining the motivations behind purchasing a new smartphone, the primary reasons include device malfunction (81.4%), lack of software support for new apps and features (47.7%), and the desire for better performance (39.5%). These results suggest that functionality remains the key driver of smartphone upgrades and aesthetic part or status-driven purchases play a minor role because only 4.7% of respondents indicated they buy a new phone for personal preference. Meaning that consumers of Kazakhstan have a more practical mindset and economic factors may play a key role in their purchasing decisions.

However, when a device becomes non-functional, most respondents do not actively dispose of it. Instead, 59.3% keep their broken smartphones without doing anything, while only 10.5% take them to recycling centers. It is possible to notice a similar trend for old but still functional smartphones, where 50% of respondents keep them without use. Nevertheless, many of the respondents prefer to give them away to family or friends (79.1%). These results show that electronic waste accumulation at home is a serious problem. It is possible to explain such behavior from a lack of awareness about recycling programs and the low availability of recycling facilities in the country. It is worth noting that only 1.2% of respondents take their functioning devices to a recycling center. This shows that there is a major gap in Kazakhstan’s e-waste management system and most of the modern recycling initiatives remain

underdeveloped.

On the other hand, these results illustrate that consumers in Kazakhstan would be more likely to recycle or trade in their old electronics if they received a certain amount of compensation. The strongest motivators include monetary compensation (67.4%) and discounts on future purchases (61.6%), followed by convenience (43%), such as easy pickup/drop-off options. This information demonstrates that if large companies and retailers introduce well-structured trade-in programs with financial benefits for consumers, the e-waste management system in Kazakhstan can be significantly improved. Apart from that, there is a low level of awareness of environmental concerns as a motivation for recycling is relatively low, with only 24.4% citing this as a key factor. These findings suggest that the government can provide certain incentives such as education campaigns to promote recycling and proper e-waste disposal in the country.

6. Conclusion

This research showed the consumers behavior towards pre-owned and reconditioned electronic products at present in Kazakhstan. Taking into consideration the clear trend of global sustainability and cost saving options, the local market is not virtual to these. Findings show that while lower prices and manufacturer certification are good motivators for the consideration of refurbished products, there is no widespread adoption not only because of lack of trust, quality, and absence of a warranty and return policies.

A key contributor to consumer comfort in purchasing refurbished goods was the trust in reputable sellers such as official store chains and authorized retailers. It also pointed out different variants in consumer's readiness to buy items in different product categories where mobile gadgets greet the least consumer's eagerness compared to computers and televisions which carry the most eagerness.

The research found that more literature should be written on the management of electronic waste, mainly as consumers tend to save broken or unused devices in their homes and not to recycle or properly discard them. Yet, while consumers are interested in recycling if financially incentivized through discounted payments or given monetary incentives, they are not yet motivated by environmental concerns alone.

There are clear opportunities for policy makers and companies based on these findings. Providing certified refurbished products, refracturing tolerance, and guaranteeing refurbished products keeps building trust with retailers. To make e-waste management better, attractive trade-in programs with financial benefits as well as convenient recycling options can be introduced. On the other hand, government efforts to raise awareness over environmental impacts would result in a more gradual transformation of consumer attitudes towards more sustainable manners.

This study has several limitations: lack of access to data obtained from the electronics retailers. For the supply side, we were not able to speak to the major electronics retailers, as many attempts were made but none agreed to be interviewed. Therefore, the present study aimed exclusively at the consumer side exclusively, without any insight into the retailers' point of view on refurbishment, trade in, and e–waste in Kazakhstan. Also, the sample of survey respondents consisted primarily of university students and may not give an accurate picture of the general population of consumers based on a diversity of age, income, and region.

Several policy interventions are recommended in order to build consumer trust in refurbished electronics and the development of a sustainable market. To address the issue of product quality and fraud, first national refurbishment standards should be developed. This entails putting in place grading systems (A/B/C), setting out clear labeling rules and requiring sellers to reveal condition of products, warranty, and history of repairs. Second, the industry growth can be stimulated by reducing VAT or by providing subsidies for certified refurbishers and grants or soft loans for startups in the circular electronics economy. Next, is to strengthen e-waste collection and recycling programs by installing public drop off points and introducing device lifecycle tracking systems by using QR code so that a steady supply of refurbishing devices can be done. The final approach consists of incorporating circular economy principles into continuing education through the inclusion of sustainability topics at the level of educational institutions (school and university curricula), as well as in innovation labs aimed at electronics reuse at universities.

Future research should address engagement with retailers and manufacturers as a means to obtain a more complete picture of the refurbishment ecosystem in Kazakhstan. Quality interviews with key industry stakeholders could yield information about supply side problems and potential opportunities. Furthermore, future research should investigate how national legislation, which loans support refurbishment while standardising certification and enhancing consumer rights for refurbished products, might be developed. Such an approach would bring Kazakhstan closer to international best practices and enhance public trust. Measuring changes in consumer behavior over time as awareness and infrastructure improve can be done through longitudinal studies.

Overall, the refurbished and the pre-used electronics market in Kazakhstan has a good potential for development although removing barriers of trust, awareness, and accessibility should first be done. Acquiring refurbished products offers a way for businesses and policymakers to encourage accelerated acceptance of such products, develop a circular economy, and help achieve Kazakhstan’s sustainability goals.

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Appendix A: The Survey

"Thank you for participating in this survey. Your responses will help us understand consumer awareness and attitudes toward electronic refurbished products. The survey will take approximately 10 minutes to complete.

All responses are anonymous. If you have any questions you may email nurmukhamed.zhanibek@nu.edu.kz"

1. How familiar are you with electronic refurbished products (реставрированные товары)?
   a. I (or my household) have bought and used refurbished products at least once before.
   b. I have heard about them and know what they are.
   c. I have a vague idea but haven't looked into them much.
   d. I don't know much about them.
   e. This is my first time hearing about them.
2. How do you perceive refurbished products compared to brand-new products in terms of the following qualities? (Choose one per row)

	1. Much worse than brand-new	2. Worse than brand-new	3. Just like brand-new	4. Better than brand-new	5. Much better than brand-new
Reliability	O	O	O	O	O
Value for money	O	O	O	O	O
Performance	O	O	O	O	O
Durability	O	O	O	O	O
Warranty / Support	O	O	O	O	O
Environmental impact	O	O	O	O	O
Aesthetic condition (appearance)	O	O	O	O	O

Questions 3-6 are only asked from respondents that chose "a" in Question 1.

3. When did you last purchase a refurbished product of these categories? (Choose one per row)

	Within the last 3 months	Within the last year	Within the last 3 years	More than 3 years ago	Never
Phones or Tablets	O	O	O	O	O
Computers (PC or Laptop)	O	O	O	O	O
Televisions	O	O	O	O	O
Home appliances (e.g., refrigerators, washing machines)	O	O	O	O	O

4. Where did you buy your refurbished product(s)? (Select all that apply)
   a. Directly from official brand stores (Apple, Samsung, ASUS, Xiaomi etc.)
   b. Electronics retailers authorized by the manufacturers (Mechta, Technodom, Sulpak etc.)
   c. Online marketplaces (Sellers on Kaspi, Satu etc.)
   d. Second-hand online marketplaces (OLX, Instagram sellers etc.)
   e. Other: _____
5. How satisfied have you been with purchases of refurbished product(s) in terms of product quality and performance?
   a. 1 – Very dissatisfied
   b. 2
   c. 3
   d. 4
   e. 5 – Very satisfied
6. Did you experience any issues with your refurbished product? If yes, what kind of issues did you face?

   _____

Questions 7-10 are only asked from respondents that did not choose "a" in Question 1.

7. What would encourage you to buy refurbished products in the future? (Select 2 most important factors for you)
   a. Better warranty and return policies
   b. Lower prices compared to new products
   c. More trusted sellers offering refurbished products
   d. Manufacturer certification of refurbished products
   e. Availability of a wider variety of refurbished products
   f. Other: _____
8. How would you rate your willingness to buy refurbished products in these categories in the future? (Choose one per row)

	1 – Will never buy	2	3	4	5 – Very likely to buy
Phones or Tablets	O	O	O	O	O
Computers (PC or Laptop)	O	O	O	O	O
Televisions	O	O	O	O	O
Home appliances (e.g., refrigerators, washing machines)	O	O	O	O	O

9. Where would you feel most comfortable buying a refurbished product? (Select all that apply)
   a. Directly from official brand stores (Apple, Samsung, ASUS, Xiaomi etc.)
   b. Electronics retailers authorized by the manufacturers (Mechta, Technodom, Sulpak etc.)
   c. Online marketplaces (Sellers on Kaspi, Satu etc.)
   d. Second-hand online marketplaces (OLX, Instagram sellers etc.)
   e. Other: _____
10. What do you think is the biggest challenge when buying refurbished products? (Select the most important factor for you)

a. Lack of trust in sellers or their refurbishing processes
b. Lack of warranties and/or lack of generous return policies
c. Higher-than-expected prices for refurbished items
d. Limited availability of desired brands/models
e. Negative perceptions (e.g. social stigma) about using second-hand electronics

11. How often do you replace these types of devices? (Choose one per row)

	Every year	Every 2-3 years	Every 4-6 years	Less frequent than 6 years
Phones or Tablets	O	O	O	O
Computers (PC or Laptop)	O	O	O	O
Televisions	O	O	O	O
Home appliances (e.g., refrigerators, washing machines)	O	O	O	O

12. What are the main reasons for you to buy a new smartphone? (Select up to 2 most important reasons)
    a. My current phone is broken or no longer working properly
    b. My phone is outdated and does not support the latest apps/features
    c. I want better performance (faster speed, improved battery life, better camera, etc.)
    d. I got a good trade-in offer or discount on a new phone
    e. I want a new phone for status or personal preference
    f. Other: _____
13. What do you typically do with your broken (non-functioning) smartphones? (Select all that apply)
    a. Get it repaired and reuse it
    b. Trade it in for a new device at a retailer
    c. Recycle it at a recycling center
    d. Sell it at marketplace (such as OLX, Instagram)
    e. Keep it but do nothing
    f. Throw it in general waste
14. What do you typically do with your old yet still working smartphones? (Select all

that apply)

a. Give it away (to family, friends, or others)
b. Trade it in for a new device at a retailer
c. Recycle it at a recycling center
d. Sell it at marketplace (such as OLX, Instagram)
e. Keep it but do nothing
f. Throw it in general waste

15. What would motivate you to recycle or trade in your old electronics? (Select 2 most important factors)
    a. A discount on my next purchase
    b. Convenience (easy pickup/drop-off for recycling)
    c. Environmental concerns
    d. Monetary compensation
    e. I would not recycle/trade in my old electronics
16. Any additional comments or suggestions regarding refurbished products or recycling e-waste?

    _____

"Thank you for your time! Your feedback is valuable in understanding how refurbished products can be improved and made more appealing to consumers."