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Circular shifts: insights into kazakhstan's circular business ecosystem

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ABSTRACT

This study explores the role of circular entrepreneurship in advancing sustainable development within Kazakhstan, an emerging market traditionally reliant on resource-intensive economic practices. The circular economy, with principles of reduce, reuse, recycle, and recover, offers a transformative alternative to the linear 'take-make-waste' model by promoting resource efficiency and waste minimization. Circular entrepreneurs are pivotal in this transition, particularly in emerging economies, where they address environmental challenges while creating new market opportunities. Despite its potential, circular entrepreneurship in Kazakhstan faces significant challenges, particularly for small and medium-sized enterprises (SMEs). These challenges include limited policy support, inadequate infrastructure, and a lack of public awareness about sustainable practices. This study employs a qualitative approach, including interviews and netnography, to investigate the motivations, operational dynamics, and challenges faced by SMEs in Kazakhstan that have integrated circular economy principles into their business models. The findings reveal that while Kazakhstan has made strides in promoting sustainable development through initiatives like the 'Green Economy' Plan, there are still substantial gaps in policy and institutional support for circular entrepreneurship. The study underscores the need for targeted strategies to enhance public awareness, provide financial incentives, strengthen regulatory frameworks, and foster collaboration among stakeholders. This research contributes to the broader understanding of circular entrepreneurship in emerging markets, offering policy recommendations that aim to support the growth of circular businesses and accelerate Kazakhstan's transition to a circular economy. By highlighting the unique challenges and opportunities in this context, the study provides valuable insights for policymakers, entrepreneurs, and other stakeholders committed to sustainable development.

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1. Introduction

The pressing global challenges of environmental degradation, resource depletion, and unsustainable consumption patterns have necessitated a reevaluation of traditional economic models. The circular economy has emerged as a transformative framework that offers a sustainable alternative to the linear 'take-make-waste' paradigm. By promoting the continuous use of resources through the principles of reduce, reuse, recycle, and recover, the circular economy aims to create a regenerative system that decouples economic growth from resource consumption and waste generation. This innovative model is particularly crucial in the context of emerging economies, where the transition to sustainable practices can significantly contribute to both environmental preservation and economic resilience.

The concept of circular entrepreneurship plays a pivotal role within the circular economy framework. Circular entrepreneurs are at the forefront of this transition, driving the adoption of business models that prioritize sustainability, resource efficiency, and waste reduction. These entrepreneurs not only address environmental challenges but also unlock new economic opportunities by innovating products, services,

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and processes that align with circular principles. In emerging markets like Kazakhstan, circular entrepreneurship has the potential to address economic disparities and foster inclusive growth by promoting affordable, sustainable business practices.

This research explores the theoretical and institutional frameworks that underpin circular entrepreneurship, with a particular focus on small and medium-sized enterprises (SMEs) in Kazakhstan. SMEs are vital to Kazakhstan's economy, yet they face significant challenges in adopting circular economy principles due to limited resources, infrastructure, and policy support. Understanding the motivations, challenges, and operational dynamics of these businesses is essential for developing strategies that can facilitate their transition to circular models.

In summary, this research provides a comprehensive examination of circular entrepreneurship in Kazakhstan, exploring the theoretical and institutional frameworks that support it, the challenges and opportunities faced by SMEs, and the policy recommendations needed to foster a thriving circular economy. By addressing these issues, the research contributes to the broader understanding of how emerging markets can leverage circular economy principles to achieve sustainable economic growth and environmental preservation.

This paper is structured into four sections. Following this introduction, [Section 2](#) outlines a theoretical framework and Kazakhstan's circular economy policy, and in [Section 3](#) we discuss the research methodology. [Section 4](#) presents the interview findings and analysis, linking it to the existing literature, and suggesting potential policy and research implications. [Section 5](#) offers concluding remarks, highlighting the scope of our research and its limitations.

2. Theoretical and institutional frameworks

2.1. Theoretical framework

The circular economy is an innovative model that transcends the 'take-make-waste' approach of traditional linear economies by advocating for a regenerative system aimed at minimizing dependency on resources and waste generation. This transformative model is anchored in the core principles known as the 4Rs: reduce, reuse, recycle, and recover, each playing a unique role in ensuring sustainable resource management (Kirchherr et al., 2017; Murray et al., 2017). The principles of 'reduce' and 'reuse' emphasize durable product designs to extend lifespan, while 'recycling' reintroduces materials to the economy, and 'recovery' extracts energy from non-recyclables to mitigate waste (Rovanto & Bask, 2022). This strategic focus on resource efficiency and the separation of economic growth from excessive resource consumption and waste distinguishes a circular economy as a sustainable model.

Circular entrepreneurship, highlighting sustainable ventures, promotes shifts from linear business models to environmentally sustainable ones, with particular emphasis on emerging economies that address economic disparities through affordable circular businesses (Ananthram & Chan, 2021; Dantas et al., 2022; Kumar et al., 2019; Staaf & Sundström, 2021). The EU's circularity mandates challenge multinational companies, especially in emerging contexts, to adapt amid policy and infrastructural limitations (Patwa et al., 2021; Singh & Giacosa, 2019; Zamfir et al., 2017). Central to this are circular entrepreneurs who, in aligning with circular tenets, innovate to enhance resource productivity, extend product life, establish sharing platforms, and convert waste into valuable resources (Lauten-Weiss & Ramesohl, 2021; Rovanto & Bask, 2022). Such transformative approaches not only mitigate environmental issues but also unlock new market opportunities and customer bases, fortifying a competitive edge.

Despite the critical role of circular entrepreneurship in sustainable development, existing research is notably sparse and skewed toward large, industrial companies in developed nations, often overlooking the nuances of small and medium-sized enterprises (SMEs) in emerging markets like Kazakhstan (Ghisellini et al., 2016; Heshmati, 2017; Kirchherr et al., 2017; Kuzma & et al., 2021). In particular, there is a discernible knowledge gap regarding the motivations, challenges, and operational dynamics of SMEs in these markets when adopting circular models (Lawal et al., 2016; Zamfir et al., 2017).

Furthermore, current research adopts an instrumental logic, narrowly concentrating on economic gains from eco-friendly initiatives and neglecting wider social and environmental ramifications. This perspective

favors minor circular adaptations over fundamental systemic changes, with a disproportionate focus on recycling because of its ease of implementation, thereby side-lining other critical elements of circularity (Corvellec et al., 2022; Geissdoerfer et al., 2017; Ghisellini et al., 2016; Kirchherr et al., 2017; Montabon et al., 2016; Rovanto & Bask, 2022). For the thriving circular entrepreneurship in the community, the collaboration among various stakeholders, including businesses, governments, consumers, and communities plays an important role (Suchek et al., 2022). Entrepreneurs can actively engage with suppliers, customers, and other partners to establish circular supply chains, sharing platforms, and collaborative networks. Such collaborations foster knowledge sharing, resource optimization, and collective action toward a circular economy (Droege et al., 2021).

2.1. Kazakhstan's context: policy framework on entrepreneurship and circular economy principles

Kazakhstan, a Central Asian country rich in natural resources, has historically operated under a resource-intensive economic model. This approach has led to significant environmental challenges, prompting nations to consider more sustainable economic systems. The country acknowledges the instrumental role of entrepreneurship in stimulating economic expansion, generating employment and fostering innovation. In response, Kazakhstan embarked on substantial initiatives to cultivate a conducive entrepreneurial ecosystem and stimulate business ventures.

The 'Green Economy' Plan, introduced in 2013, is one of the cornerstone policies of this transformative journey. This strategy accentuates ecological consciousness and efficient water utilization, underscoring the country's commitment to sustainable development. It sets specific targets for water, energy, and carbon emission reduction, which are crucial elements in a circular economy. The plan aims to substantially decrease carbon emissions and a significant portion of the power generated from renewable sources by 2050. In a pioneering urban initiative, Almaty, Kazakhstan's largest city, engaged in exhaustive research and consultation to transition toward a circular economy. This ambitious project has led to the formulation of an all-encompassing array of circular economy tactics tailored to key industries such as construction, agriculture, metal recycling, and mineral resources (Hoogzaad et al., 2019). Despite these promising developments, waste management remains a major concern. Data from 2015 to 2020 reveal that only approximately 15-18% of industrial and municipal solid waste is recycled (Bureau of National Statistics of Kazakhstan, 2022). Although there has been an uptick in industrial waste processing, now accounting for over 30% of the waste handled, the rate of waste sorting has stagnated. This stagnation persists despite an increase in enterprises participating in waste management, posing difficulties in monitoring the full spectrum of waste treatment and its incorporation into circular systems (Sagiyeva, 2023).

Kazakhstan's existing policies for entrepreneurship largely address the broad needs, with no explicit directives or support systems for those adopting sustainable or circular methodologies. Recognizing this deficiency, the government has forged partnerships with international bodies such as the United Nations Economic Commission for Europe (UNECE). These collaborations aim to propel the circular economy agenda forward, concentrating on sustainable commerce, water conservation, and food security (UNECE, 2022). This strategic partnership signifies Kazakhstan's broader commitment to embedding circularity at the heart of its economic and environmental policies, although practical challenges remain. The key challenges are the overexploitation of natural resources, high energy consumption, low productivity, and a technological gap that requires bridging through innovative solutions and international cooperation.

The path forward for Kazakhstan requires a systemic shift that encompasses comprehensive legal reforms, technological innovation, public awareness campaigns, and educational programmes. To fully realize the circular economy's potential, it is imperative that future strategies also address enhancing waste management infrastructure, providing incentives for SMEs to adopt circular principles, and fostering education and awareness among businesses and consumers. With the aforementioned policy context and challenges in mind, it is crucial to delve deeper into the operational dynamics of SMEs within Kazakhstan's circular entrepreneurship landscape.

3. Methodology

3.1. Data collection

In this study, we employed an inductive qualitative approach to establish connections between our research objectives and findings derived from raw data. Our study draws on the following sources of data: interviews and netnography. The primary source comprised 20 open-ended interviews with owners of SMEs in Kazakhstan that incorporated elements of the circular economy into their operations from the beginning.

The interview guide was composed of open-ended questions informed by the objectives of this study and the literature review (see [Appendix 1](#)). In particular, to understand the circular entrepreneurship environment in Kazakhstan, we aimed to uncover the intrinsic motivations and operational dynamics of our respondents' businesses. Participants were informed and signed consent forms about ethical issues related to their business information and political opinions. Ethical approval for this study was obtained from the Nazarbayev University Institutional Research Ethics Committee (NU IREC) with approval no. 829/20122023. Moreover, the data were anonymized, and participants were referred to pseudonyms. Participants for the semi-structured interviews were identified through an analysis of eco-business and eco-activism accounts on the social media network of Instagram within Kazakhstan. The selection process was shaped mostly by the general SMEs environment in Kazakhstan, where the vast majority were from big cities, such as Almaty and Astana (Bureau of National Statistics of Kazakhstan, 2022). We selected SMEs ranging from newly established startups to more established enterprises to capture a range of perspectives and experiences within practices with circular principles. As Kazakhstan, an emerging economy, has started to incorporate circular principles into its economic framework, the participants' relatively young age range reflects the notion that younger entrepreneurs tend to be more forward-thinking and receptive to embracing sustainable business strategies. This demographic choice is expected to offer significant insights into the obstacles and prospects of SMEs operating in a circular economy context. Data saturation was reached by the 17th interview, and beyond that no new substantial insights were noted in the following interviews. Details of the participants are provided in [Table 1](#) based on the official description and category of their registered business, and the categorization of the circular economy principles by authors based on the literature (Kirchherr et al., 2017; Murray et al., 2017).

Additionally, we gathered information from the participants' social media networks and public interviews using netnography (Bartl et al., 2016). Furthermore, we conducted an analysis of Kazakhstani official state policy documents, reports, and statistics to explain the contextual background and understand the results of data analysis through interviews.

Interview protocol. The lead and second authors of this study, natives of Kazakhstan, conducted all the interviews in Russian. The duration of these interviews varied from 30 to 60 minutes, with some

Table 1. Participant's details.

No	Pseudonym (Age group)	Type of business (Type of circularity)	Previous experience	Eco background
1.	Askar (30–35)	Fashion industry (Redesign, Recover)	Managerial	Yes
2.	Diana (35–40)	Retail (Reduce)	Business	Yes
3.	Medina (30–35)	Fashion industry (Reduce, Renew)	Business	Yes
4.	Ivan (35–40)	Recycling, mentoring (Recycle, Renew)	Managerial	Yes
5.	Assem (35–40)	Fashion industry (Reduce)	Business	Yes
6.	Saule (35–40)	Eco-initiative, consulting (Recycle, Recover)	neither	Yes
7.	Anar(30–35)	Eco-initiative, consulting (Recycle, Recover)	Managerial	Yes
8.	Dauren (20–25)	Fashion industry (Redesign, Recover)	neither	Yes
9.	Aibol (40–45)	Recycling (Recycle)	Business	Yes
10.	Vadim (35–40)	Recycling (Recycle, Renew)	Business	Yes
11.	Nazym (35–40)	Consulting, mentoring (Recycle, Recover)	Managerial	Yes
12.	Olga (35–40)	Recycling (Recycle, Renew)	Managerial	No
13.	Akerke (35–40)	Consulting, mentoring (Recycle, Recover)	Managerial	Yes
14.	Dina (30–35)	Consulting, education (Recycle, Recover)	neither	Yes
15.	Maksat (25–30)	Eco-initiative (Recycle, Recover)	neither	No
16.	Aidar (40–45)	Recycling (Recycle)	Managerial	Yes
17.	Saniya (30–35)	Eco-initiative (Recycle, Recover)	Managerial	Yes
18.	Raushan (30–35)	Eco-initiative (Recycle, Recover)	neither	Yes
19.	Aknur (35–40)	Retail (Reduce)	Business	No
20.	Aidos (40–45)	Recycling (Recycle)	neither	No

informal discussions extending for up to two hours. Before each interview, the participants were briefed on the purpose of the study, assured of confidentiality, and informed about the use of the data. They were also told that they could terminate the interview at any time without any negative consequences or judgment. In line with the research objectives, participants were asked open-ended questions about their experience with entrepreneurial activities related to the circular economy. Specifically, questions pertained to their motivations for and objectives in starting a circular business, the primary challenges and barriers they encountered, how they defined their brand and communicated it to customers and the broader community, and their collaboration with other eco-businesses both domestically and internationally. Each interview was tailored to the participants with questions adapted based on their industry type and specific business due to the absence of the official categorization of 'eco-business type' while opening and registering the enterprise.

Data analysis and coding. The interview data were transcribed verbatim and the coding process was informed by the authors' comprehension and interpretative analysis (Thornberg & Charmaz, 2014). Initial codes, or first-order codes, were derived directly from participants' verbatim responses, whereas second-order codes emerged through an iterative process of reviewing and interpreting the existing dataset. Our analysis followed a bottom-up approach, consistent with inductive qualitative methods, allowing themes to surface organically from participants' experiences and narratives (Charmaz, 2006; Lindlöf & Olsson 2002). This process culminated in the identification of five distinct themes that encapsulated the core aspects of the participants' experiences. The initial examination of the transcripts provided insights into circular business models and key challenges faced by circular entrepreneurs. A second reading identified common patterns among entrepreneurs, particularly in their social and business objectives. A third reading revealed a lack of legislative and institutional support for circular entrepreneurs, who were found to be primarily intrinsically motivated. Finally, the themes were refined to identify circular entrepreneurs and their business models.

Figures 1 and 2 visually represent the coding structure and research model, respectively, providing a detailed view of the analytic hierarchy and evolution of themes from the initial coding stages to the final thematic framework.

4. Results and discussion

With the aim of understanding circular entrepreneurship and business models in Kazakhstan, our analysis emerged incrementally and was derived from the depth and breadth of the interview transcripts. The foundational level centered on entrepreneurial and ecological underpinnings is essential for establishing the context and grounding subsequent findings. By examining the backgrounds of the company founders, we unraveled the motivations that influenced their inclination toward circular practices.

We further explore the motivations behind circular businesses. These motivations, characterized by a mix of opportunity-driven ambitions and influenced by societal and community dynamics, elucidated the reasons entrepreneurs ventured into circular practices, particularly in an environment where supportive legal and policy frameworks might be absent or underdeveloped. Emerging from this understanding of motivation, our analysis identifies the core elements and objectives of business models. This layer provided clarity on how entrepreneurs aimed to incorporate circular principles, navigate potential external challenges, and the existing landscape of support. The subsequent level emphasized the importance of cooperation and networking. Anchored by shared commitments to environmental and social imperatives, this phase underscored the natural alliances and collaborations that materialized among entrepreneurs with aligned values and visions. In conclusion, we synthesized actionable policy recommendations. This final phase was an aggregation of insights from the preceding levels, presenting the collective perspectives and suggestions of circular entrepreneurs.

4.1. Motivations behind circular entrepreneurship

Circular entrepreneurs are influenced by a combination of personal journeys, professional backgrounds, and cultural traditions. Among our respondents, some held influential roles in businesses, gaining insights into integrating sustainability at the core of operations. Training in eco-consulting and experience in the

environmental sector further shape their perspectives. Personal narratives, ranging from childhood passions to overseas experiences, underscore their commitment to eco-consciousness. Pressing environmental challenges often act as immediate catalysts, driving them to take action and assume responsibility. In addition, they identify market gaps in response to societal demand for sustainable solutions. Kazakhstan's deeply embedded cultural traditions, especially the *Asar* tradition, serve as a historical compass that guides their sustainable entrepreneurial vision.

Founder's Identity and Background. The nexus of personal journeys, experiences, and backgrounds is often an underlying driver that propels founders toward the path of circular entrepreneurship. It is not merely the tangible skills they accumulate over the years; it is also about the innate motivations molded by their histories and individual identities.

A predominant theme that emerged from our interviews was the vast experience of these entrepreneurs. 70% of the circular entrepreneurs interviewed, and 70% engaged with had experience running

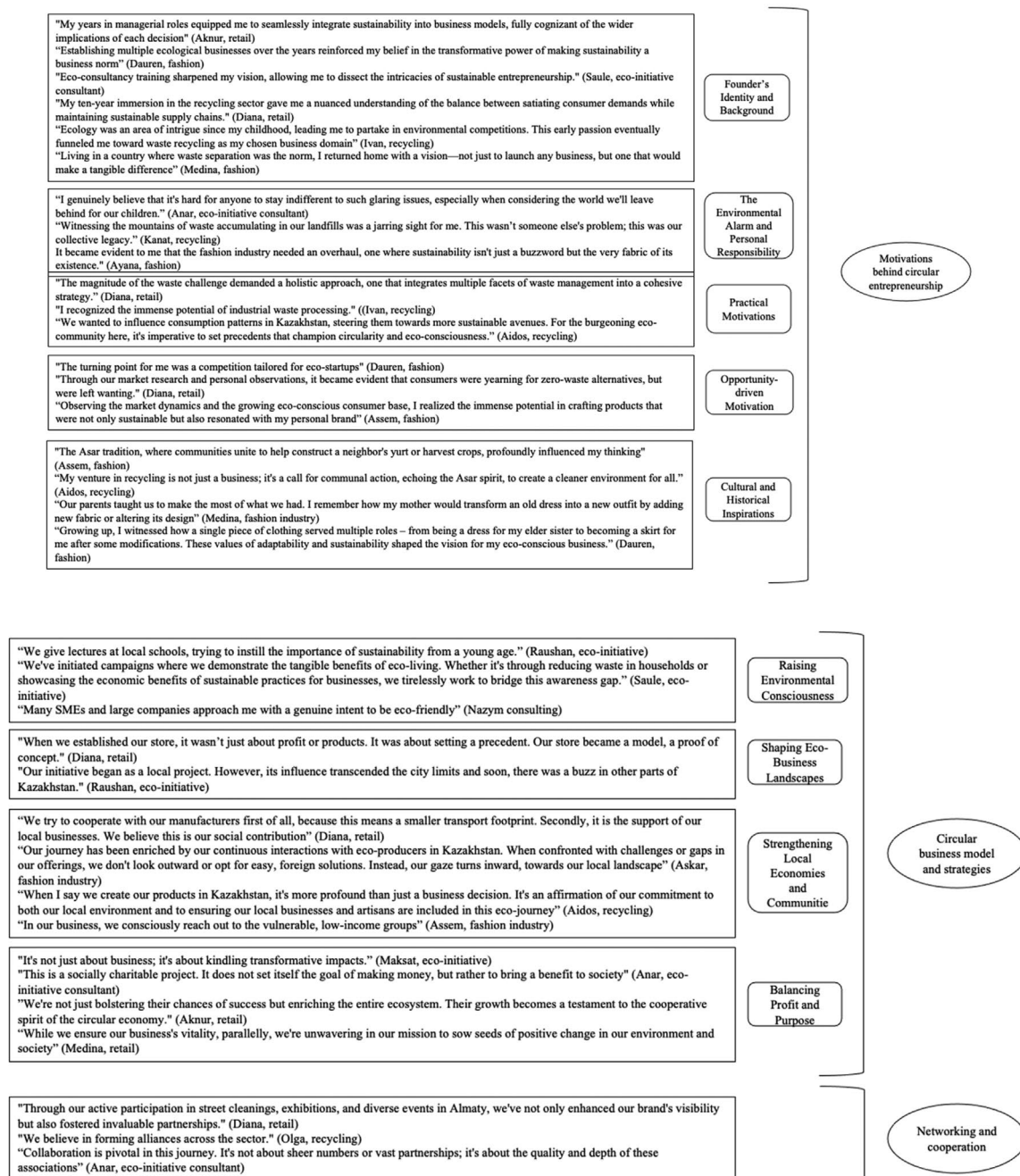


Figure 1. Coding structure.

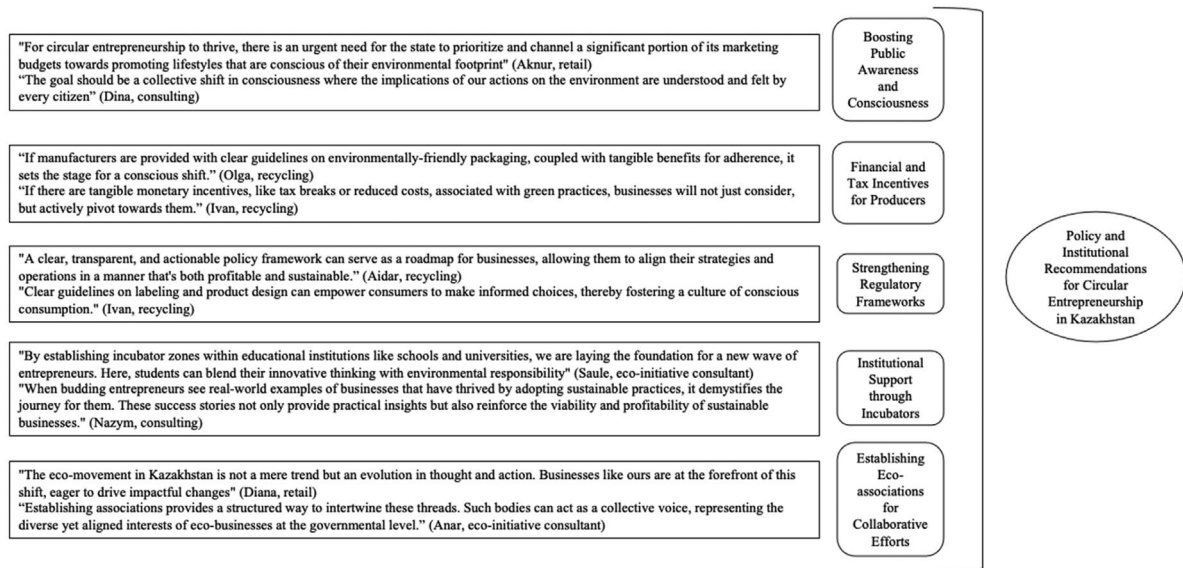


Figure 1. Continued.

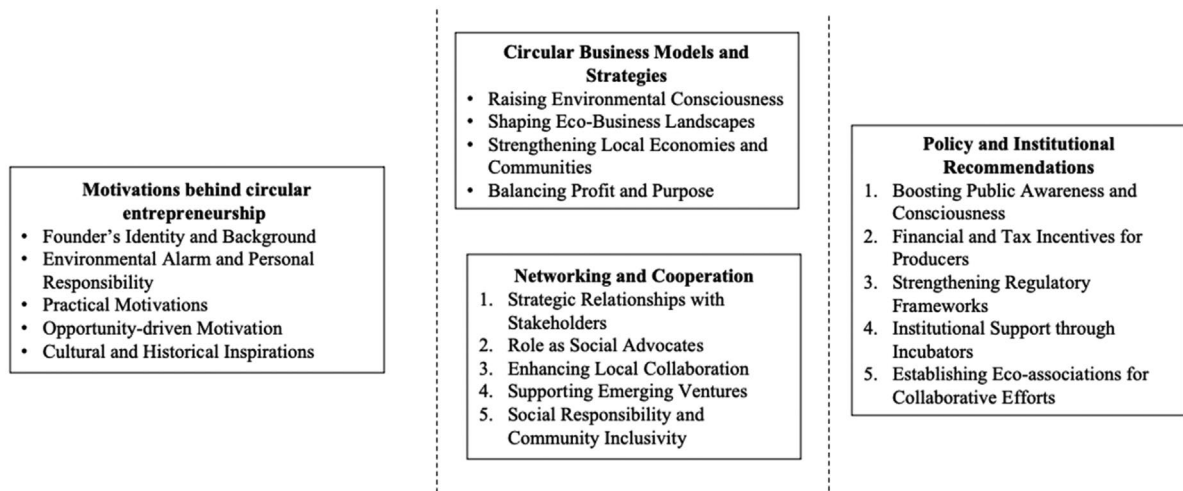


Figure 2. Process model.

both circular and non-circular businesses. Their positions were not just nominal; many held influential roles, making pivotal decisions that steered the company's direction. Aknur (retail), reflecting on her journey, noted, 'My years in managerial roles equipped me to seamlessly integrate sustainability into business models, fully cognizant of the wider implications of each decision'. Dauren (fashion industry) resonated with this sentiment, adding, "Establishing multiple ecological businesses over the years reinforced my belief in the transformative power of making sustainability a business norm'.

Beyond professional experience, specialized training also impacted these entrepreneurs' perspectives. A notable 38% of our participants had been molded by eco-consulting courses, enriching their perspective on sustainable ventures. Saule, an eco-initiative consultant, shared her perspective: 'Eco-consultancy training sharpened my vision, allowing me to dissect the intricacies of sustainable entrepreneurship'. This formal education was complemented by practical experiences. About 43% had roots in the environmental production sector, bringing hands-on expertise to their ventures. Diana, who spent a significant part of her career in retail, commented, "My ten-year immersion in the recycling sector gave me a nuanced understanding of the balance between satiating consumer demands while maintaining sustainable supply chains'.

However, it was not just professional and academic experience that shaped these entrepreneurs; personal narratives held equal importance. Ivan, involved in recycling and mentoring, harkened back to his

early days: "Ecology was an area of intrigue since my childhood, leading me to partake in environmental competitions. This early passion eventually funneled me toward waste recycling as my chosen business domain'. Medina's stint in the fashion industry was also influenced by her experiences abroad: 'Living in a country where waste separation was the norm, I returned to Kazakhstan with a vision—not just to launch any business, but one that would make a tangible difference'.

The Environmental Alarm and Personal Responsibility. The escalating environmental challenges are not just impersonal statistics or distant news stories for many entrepreneurs; they are stark realities that knock on their windows daily (Rovanto & Finne, 2023). This pressing immediacy, coupled with personal experiences, has jolted many into action, realizing that the responsibility to address these challenges doesn't lie 'out there' with some abstract entity but squarely on their shoulders. Anar's (eco-initiative consultant) reflections encapsulate this sentiment of urgency and responsibility.

"The environmental challenges we face are not abstract or distant issues; they are pressing realities that are knocking on our doorsteps. You don't have to look far; a simple glance out of the window is often a stark reminder. I genuinely believe that it's hard for anyone to stay indifferent to such glaring issues, especially when considering the world we'll leave behind for our children. This realization instilled in me a deep sense of responsibility, and I knew I couldn't just stand by and do nothing!"

Further deepening this sentiment, Kanat, a recycling entrepreneur, shares his profound realization:

'Witnessing the mountains of waste accumulating in our landfills was a jarring sight for me. This wasn't someone else's problem; this was our collective legacy. As someone rooted in this community, I felt a profound obligation to champion more sustainable ways of living and reducing waste. Every discarded item, I realized, carries with it a story, a missed opportunity for reuse or recycling'.

Ayana, who ventured in an eco-friendly fashion, conveyed her motivation:

"Growing up, I saw how fast fashion led to not just enormous waste but also damaged our natural habitats. Streams that once teemed with life became choked with pollutants. The juxtaposition of the beauty of nature against the harmful impact of unsustainable practices shook me profoundly. It became evident to me that the fashion industry needed an overhaul, one where sustainability isn't just a buzzword but the very fabric of its existence'.

Practical Motivations. The move toward circular entrepreneurship often stems from pragmatic responses to tangible external challenges. Almaty City's prevalent air pollution problem is a prime example of such an external stimulus. Coupled with our findings that many circular entrepreneurs already possess a solid ecological background prior to embarking on their ventures, it is evident that these entrepreneurs have both the drive and expertise to tackle environmental challenges. Their on-ground experiences and deep-seated knowledge of specific production cycles equipped them to craft solutions that address both market needs and environmental concerns. Diana (retail) reflected, 'Over the past decade, I've been deeply entrenched in the waste management sector. This prolonged engagement provided me with a comprehensive understanding of the complexities involved. It became clear that piecemeal efforts were insufficient. The magnitude of the waste challenge demanded a holistic approach, one that integrates multiple facets of waste management into a cohesive strategy'.

In contrast, Ivan's (recycling) journey was molded by both ambition and constraints. His dedication to sustainability, paired with practical barriers, pushed him to innovate through his means:

'I recognized the immense potential of industrial waste processing. However, the high capital required for such large-scale operations was a barrier for me. But instead of seeing it as a roadblock, I took it as an opportunity to innovate. I embarked on a smaller workshop-style initiative, allowing me to create sustainable products while navigating the financial constraints'.

Meanwhile, Aidos (recycling) was driven by a vision that was broader than just business considerations. He aspired to have a lasting impact on consumption habits, seeking to redefine the cultural norms of consumption in Kazakhstan:

'Our aim was never just about introducing recycling processes. It was more profound; it was about initiating a cultural shift. We wanted to influence consumption patterns in Kazakhstan, steering them towards more sustainable avenues. For the burgeoning eco-community here, it's imperative to set precedents that champion circularity and eco-consciousness'.

Opportunity-driven Motivation. The entrepreneurial journey in the field of circular business is not solely fueled by deep-rooted environmental consciousness. For many, it also involves identifying gaps in the market and leveraging them. Moreover, these opportunity-driven motivations can often be reinforced or initiated by prevailing social trends, community preferences, or specific events designed to foster eco-innovation. Dauren (fashion industry) reminisces at a pivotal moment:

'The turning point for me was a competition tailored for eco-startups. I was always keen on sustainability, but it was this competition that presented me with a structured platform to bring my ideas to fruition. The event was more than just a contest; it was a congregation of like-minded individuals, all passionate about instigating change.'

Diana (retail) noticed a clear demand:

'Through our market research and personal observations, it became evident that consumers were yearning for zero-waste alternatives, but were left wanting. They needed a space where eco-conscious shopping wasn't an exception, but the norm. Armed with this insight, my partners and I saw an opportunity to meet this demand head-on. That's how our store, which promotes packaging-free shopping, was conceived. It's more than just a store; it's a response to a clear societal call for sustainable consumerism.'

Assem (fashion industry) articulates her journey:

'The creation of eco-products wasn't just a business decision but seemed like a natural progression for me. Observing the market dynamics and the growing eco-conscious consumer base, I realized the immense potential in crafting products that were not only sustainable but also resonated with my personal brand. So, I took the plunge, drawing inspiration from traditional methods and modern design to bring forth a range that truly embodied sustainability at its core.'

Cultural and Historical Inspirations. Kazakhstan's history is enriched with sustainable practices that are deeply rooted in cultural norms and are vital for survival. These long-standing traditions, coupled with experiences from the more recent past, continue to inspire entrepreneurs today, underlining how sustainability has always been an integral aspect of Kazakhstan's essence.

The nomadic lifestyle of the Kazakhs was characterized by harmonious coexistence with nature, living off the land without depleting its resources, and migration patterns that allowed natural regeneration. Central to this ethos is the *Asar* tradition. More than mere collaboration, *Asar* epitomized the principles of resource sharing and community cooperation, where a community was united to efficiently achieve a collective objective, mirroring today's circular economy values. This ancient custom resonates with modern business approaches, as expressed by Assem's (fashion industry) reflection on *Asar*:

'The Asar tradition, where communities unite to help construct a neighbour's yurt or harvest crops, profoundly influenced my thinking. Inspired by this ethos of shared responsibility and resourcefulness, through my business I want to convey the message of sustainability and community cooperation.'

Drawing parallels in the recycling sector, Aidos (recycling) adds:

'The principles of Asar echo in today's need for responsible waste management. Just as our ancestors came together to optimize resources and skills, we, too, must collaborate to address the pressing challenge of waste. My venture in recycling is not just a business; it's a call for communal action, echoing the Asar spirit, to create a cleaner environment for all.'

Additionally, the socialist period instilled the values of frugality and resourcefulness. With limited access to goods, repurposing, renewing, and sharing have become common. For example, clothing was not worn or discarded. Instead, garments are often passed down, altered, or reinvented to serve multiple purposes. Reflecting on this period, Medina and Dauren (fashion industry) remarked:

'Our parents taught us to make the most of what we had. I remember how my mother would transform an old dress into a new outfit by adding new fabric or altering its design. Those values of renewal and adaptation inspired me to establish a fashion rental service, promoting sustainable fashion while allowing everyone to experience quality attire.' (Medina, fashion industry)

'Growing up, I witnessed how a single piece of clothing served multiple roles – from being a dress for my elder sister to becoming a skirt for me after some modifications. These values of adaptability and sustainability shaped the vision for my eco-conscious business.' (Dauren, fashion industry)

4.2. Circular business model and strategies

Circular entrepreneurs in Kazakhstan emphasize a balanced approach that integrates social, environmental, and economic considerations into their business models (Masurel, 2007; Zamfir et al., 2017). They prioritize creating positive impacts, cultivating local influence, and promoting awareness of eco-friendly practices. Central to their mission is to raise public awareness and education about sustainability. By integrating green initiatives into their daily operations and community engagement, they aim to stimulate a wider awareness of eco-lifestyles. Furthermore, many entrepreneurs act as consultants, guiding other businesses in their eco-friendly transition, thereby amplifying the societal shift toward sustainability. Their businesses serve as prototypes for sustainable ventures, while simultaneously showcasing the profitability of eco-practices. They also emphasize strengthening local communities, often by collaborating with local manufacturers and integrating marginalized groups, thus intertwining economic uplift with environmental mindfulness (Ghinoi et al., 2020). Finally, while financial prosperity remains a consideration for some, it is often harmoniously balanced with the broader purpose of fostering positive societal change.

Raising environmental consciousness. Circular entrepreneurs place significant emphasis on promoting an eco-lifestyle and conscious production. By integrating environmentally friendly practices into their business operations, they aim to raise awareness of the importance of sustainability and its positive impacts on the planet (Geissdoerfer et al., 2020). Many entrepreneurs view their businesses as platforms to educate and inspire, hoping to trigger a ripple effect of environmental consciousness throughout their communities and beyond.

Beyond their direct business activities, circular entrepreneurs are deeply woven into the fabric of their communities through their broader engagement. They proactively look for avenues to propagate their eco-friendly ethos, from hands-on activities to educational initiatives. For instance, Raushan (eco-initiative) was not merely content with the daily operations of her business. She actively sought platforms to share knowledge and passion. 'We give lectures at local schools, trying to install the importance of sustainability from a young age', she explained. 'Moreover, we conducted master classes and lessons for budding entrepreneurs and enthusiasts who wish to carve a niche in the eco-space. Our seminars often see participation from local businesses aiming to integrate more eco-friendly practices into their operations'. Such endeavors underscore her commitment to not just her business, but also to shaping an environmentally conscious future for her community.

Similarly, Saule (eco-initiative consultant) spoke about the challenges she faced. 'This is the biggest problem - public awareness. Many in our society remain oblivious to the environmental repercussions of their choices', she lamented. 'We've initiated campaigns where we demonstrate the tangible benefits of eco-living. Whether it is through reducing waste in households or showcasing the economic benefits of sustainable practices for businesses, we tirelessly work to bridge this awareness gap'.

Furthermore, recognizing the growing interest and challenges faced by many businesses in transitioning to eco-friendly models, these entrepreneurs offer expertise in the form of consultation services. Nazym, who is deeply involved in consulting and mentoring, sheds light on the quandary faced by many enterprises. Many SMEs and large companies approach me with a genuine intent to be eco-friendly. However, there is a palpable sense of loss in the maze. They are often overwhelmed with information, especially from Western sources, and they grapple with questions like where to begin, which practices to adopt, and how to measure their impact. 'What they require is a localized roadmap, tailored to their unique challenges and strengths, and that's where we come in. By offering specialized consultancy, these entrepreneurs not only facilitate individual company transitions, but also sow the seeds for a collective shift in the business landscape. As businesses alter their operations under guidance, they create a ripple effect. Suppliers, customers, and competitors take notice of this, thereby amplifying the transition toward sustainable practices (Camacho-Otero et al., 2018; Jackson, 2005). This consultancy role, therefore, acts as a catalyst, fast-tracking the shift toward an eco-conscious business ecosystem.

Shaping eco-business landscapes. Commitment to fostering a sustainable environment is deeply ingrained in the psyche of circular entrepreneurs. Their endeavors are not limited to their immediate communities or businesses. Instead, they ambitiously aim to instill a positive ripple effect both locally and potentially beyond national borders.

Locally, their businesses often serve as pioneers, paving the way for others to follow suit. Diana (retail) shared a testament to this effect: *'When we established our store, it wasn't just about profit or products. It was about setting a precedent. Our store became a model, a proof of concept. Consequently, many other eco-markets were inspired to open their doors in various cities, emulating our values and practices.'* Such ventures serve as successful models, proving that eco-businesses can be sustainable and profitable. Their influence does not end with simply setting up businesses. They actively engaged in promoting their initiatives, leading to heightened awareness and action in other regions.

Furthermore, their impact is not confined to national borders. As entrepreneurs carve a niche in their respective domains, they inadvertently become beacons for others. Raushan (eco-initiative) reflected on this phenomenon, stating, *'Our initiative began as a local project. However, its influence transcended the city limits and soon, there was a buzz in other parts of Kazakhstan. People reached out, eager to replicate our model, seeking guidance on promoting similar eco-initiatives in their regions.'*

This widespread interest manifests not only in admiration but also in tangible business opportunities. Many entrepreneurs find themselves in the roles of mentors, consultants, or franchisors. Their experiences, trials, and successes have become valuable blueprints for those keen to venture into the eco-business sphere.

Strengthening local economies and communities. In pursuit of a circular economy, our respondents meticulously integrated local community interests into their business models. They recognize that building a sustainable future is not solely about reducing environmental footprints, but also about fostering resilient and empowered local communities. For instance, Diana (retail) emphasized the dual benefits of collaborating with local manufacturers, sharing, *'...We try to cooperate with our manufacturers first because this means a smaller transport footprint. Second, it supports local businesses. We believe this is our social contribution...'* This sentiment of local sourcing is echoed by Askar (fashion industry), *'...Our journey has been enriched by our continuous interactions with eco-producers in Kazakhstan. When confronted with challenges or gaps in our offerings, we do not look outward or opt for easy foreign solutions. Instead, our gaze turns inward toward the local landscape. Our first impulse is to collaborate with a local manufacturer to determine if we can co-create solutions that benefit both parties and the community at large. This approach is not just about business efficiency; it is about strengthening our local ties and ensuring that the circular entrepreneurship truly encapsulates the 'local' in its essence.'*

Aidos (recycling) delves further into the intrinsic relationship between environmental responsibility and nurturing local enterprises.

'...When I say we create our products in Kazakhstan, it's more profound than just a business decision. It is an affirmation of our commitment to both our local environment and to ensure that our local businesses and artisans are included in this eco-journey'.

Likewise, Assem (fashion industry) touched upon the emphasis on more than style and sustainability. It dives deeply into societal integration, as she articulates:

'...In our business, we consciously reach out to the vulnerable, low-income groups. For me, this is not just a hiring strategy. It is a gesture of inclusivity, ensuring that as our business grows, it also becomes a beacon of hope and opportunity for those often pushed to the side-lines...'

These reflections highlight the concrete decisions that businesses can make to support their communities and promote sustainable practices. By focusing on local collaboration, they cannot only reduce their transport emissions but also bolster the economy of the local communities within which they operate.

Balancing profit and purpose. As the circular entrepreneurship paradigm gained momentum, our respondents reflected a nuanced understanding of business objectives. For some, the compass of success is not merely pointed toward financial gains, but toward creating ripples of positive change in society. Maksat (eco-initiative) resonated with this sentiment, sharing, *'...Our vision wasn't hinged on just minting money. For us, the heart of our enterprise beats to catalyze positive societal shifts. It's not just about business; it's about kindling transformative impacts.'* Echoing this perspective, Anar (eco-initiative consultant) adds, *'...This is a socially charitable project. It does not set itself the goal of making money but rather to bring benefits to society.'*

Furthermore, by sharing their wealth of experiences, insights, and resources, these circular entrepreneurs ensure that the movement continues to flourish and expand. Aknur (retail) embodies this mentorship spirit: ‘...As we’ve solidified our footing in the market, we’ve never lost sight of those who are just starting their journey. We believe that this is the power of collective growth. Hence, we have actively reached smaller businesses, offering our expertise in brand development, sharing our insights on market dynamics, and even connecting them to potential sales platforms. By doing so, we are not just bolstering their chances of success, but enriching the entire ecosystem. Their growth becomes a testament to the cooperative spirit of a circular economy’. These insights reveal a growing number of entrepreneurs who view their ventures not just as profit-making entities, but also as vehicles for positive societal change.

By contrast, some respondents fuse traditional profitability motives with a steadfast commitment to their broader purpose. Medina, navigating the competitive terrains of the fashion domain, elucidated, ‘...Indeed, our ledger reflects profits, but that’s just one chapter of our story. While we ensure our business’s vitality, we are unwavering in our mission to sow seeds of positive changes in our environment and society. It’s about marrying profit with purpose’. Diana (retail) further shared, ‘...We operate like usual retail...’ highlighting that traditional business models can adapt to this circular philosophy. These reflections underscore an emerging business ethos in the circular entrepreneurship framework: financial prosperity and meaningful impact can coexist, complement, and amplify each other.

4.3. Networking and cooperation

Circular entrepreneurship is not an isolated endeavor. Rather, it thrives in the creation and nurturing of symbiotic relationships. Navigating the dynamic and sometimes challenging terrains of circular entrepreneurship demands a keen understanding of the power of partnerships (Palafox-Alcantar et al., 2022). It is not just about business strategy; it is about fostering a collaborative ecosystem that benefits all. Diana’s venture into the retail sector offers a prime example of this. Her engagement in local activities, such as street cleaning and events, is not merely a superficial attempt at community involvement. She explains, ‘...Through our active participation in street cleanings, exhibitions, and diverse events in Almaty, we’ve not only enhanced our brand’s visibility but also fostered invaluable partnerships...’ What’s implied here is a multifaceted benefit. On the one hand, these initiatives create brand resonance and credibility among the local population. Simultaneously, they pave the way for collaborative engagement with other stakeholders, from local artisans to larger enterprises and even government bodies. The ripple effects of such partnerships can be transformative, leading to shared resources, mutual learning, and extensive community outreach.

Olga, from the recycling sector, collaborated with the heart, making it central to her operations. She elucidates, ‘...Our approach is one of open collaboration. We believe that alliances have formed across sectors. For instance, when we faced challenges with a particular recycling process, we partnered with another enterprise with expertise in that area. Instead of viewing them as competitors, we saw opportunities for mutual growth. Together, we streamlined the process, reducing costs for both parties and further reducing waste for our community’.

The ethos she embodies speaks about the spirit of the circular economy. Open collaboration, as she practices, is not just about forging connections for the sake of optics. It is about genuinely understanding gaps and strengths in the ecosystem, and actively seeking synergistic relationships that can bridge these gaps. By doing so, not only do businesses like Olga optimize their operations, but they also foster an environment in which innovations and solutions can thrive beyond individual enterprises, benefiting the entire sector.

Through our findings, we find that circular entrepreneurs, positioned uniquely at the confluence of commerce and conscience, are proactively wielding their influence and networks as tools for ushering in tangible environmental and societal change. Anar (eco-initiative consultant) captures this essence, ‘...Collaboration is pivotal in this journey. It is not about sheer numbers or vast partnerships, but about the quality and depth of these associations. We extend our hand to companies, beckoning them to journeys with us. However, it is crucial that this journey is not just a superficial alliance. We encourage these enterprises to partner with us in ways in which their endeavors are genuinely rooted in eco-conscious

objectives. It is about going beyond mere optics and delving into authentic impact-driven actions. By doing so, we are not just creating a business network, but a web of accountable, responsible entities committed to a greener future’.

This approach does not benefit the entrepreneurs’ immediate goals. It redefines the dynamics of the business landscape, shifting it from isolated silos to a cohesive, interconnected ecosystem (Giorgi et al., 2020). In this ecosystem, one’s success is tethered to collective progress, with each entity acting as an advocate, educator, and catalyst.

By pursuing circular practices, entrepreneurs must cooperate with other stakeholders in the market such as producers and other businesses. Circular entrepreneurs emphasize creating a positive impact on society through their eco-businesses (Schultz et al., 2024). Utilizing social media for promotion, these entrepreneurs have garnered attention from potential entrepreneurs in other regions of Kazakhstan, who seek to learn from their experiences or even purchase their franchises. The positive attitudes and support from existing entrepreneurs in such cases reflect the potential for circular businesses to drive a broader eco-conscious movement. Our research examines the motivation to work with local producers as businesses progress. Circular entrepreneurs often require cooperation from various stakeholders including producers and other businesses. Such cooperation becomes increasingly crucial as businesses progress. Entrepreneurs committed to circular entrepreneurship actively enhance their resources, skills, and dedication to achieving circular business goals. By building strong relationships with market stakeholders, including other businesses and initiatives, they can gain valuable insights into the circular market. Social factors, rather than purely economic incentives, can motivate entrepreneurs to participate in circular entrepreneurship as social actors. These entrepreneurs often associate themselves with respected businesses or non-governmental organizations to gain permission to organize eco-events in public places. Established entrepreneurs contribute to the success of local partners by offering technical and intellectual support. The following quotes from the interviews provide insights into such cooperation.

4.4. Policy and institutional recommendations for circular entrepreneurship in Kazakhstan

Circular entrepreneurship in Kazakhstan is at a pivotal juncture poised to redefine sustainable development within the nation. To fully harness this potential, the integration of supportive policies and strong institutional frameworks is crucial (Blomsma et al., 2023). Drawing insights from our respondents, this section delves into the key recommendations that encompass public awareness campaigns, financial incentives, regulatory frameworks, institutional mentorship, and the establishment of eco-associations. Together, these recommendations present a comprehensive blueprint for bolstering circular entrepreneurship and ensuring Kazakhstan’s progression toward an eco-conscious future.

4.4.1. Boosting public awareness and consciousness

The promotion of circular entrepreneurship hinges on a well-informed populace that understands the dire consequences of unchecked environmental degradation. Awareness is not just about sharing information; it is also about shaping behavior and making sustainable practices a default choice for consumers. Understanding the environmental implications of our consumption patterns will dictate the speed and effectiveness of circular entrepreneurship.

Aknur (retail) suggests the direct role of the government in this enlightenment campaign. She expresses, ‘...For circular entrepreneurship to thrive, there is an urgent need for the state to prioritize and channel a significant portion of its marketing budgets toward promoting lifestyles that are conscious of their environmental footprint...’ Her statement highlights the importance of a top-down approach where governmental efforts, coupled with business practices, can lay a robust foundation for consumer awareness.

Taking this notion a step further, Dina (consulting) emphasized the universality of this awareness campaign. She contends, ‘True change can only come when every individual is in the loop. This is not merely about spreading information, but ensuring that it resonates at a personal level. The goal should be a collective shift in consciousness where the implications of our actions on the environment are

understood and felt by every citizen...’ In essence, Dina’s perspective underscores the need for a cultural and educational shift where information is not just disseminated, but deeply understood and internalized.

Together, these insights point to a two-pronged approach: a government-led initiative to promote sustainable lifestyles, and a grassroots educational movement to foster a deeper understanding of environmental imperatives (Reddy, 2020). The combination of these strategies can propel Kazakhstan toward a future where circular entrepreneurship is not just an alternative but the mainstream mode of business operation.

Financial and tax incentives for producers. Financial imperatives play a pivotal role in businesses’ decision-making processes of businesses (De Lucia et al., 2020). The entrepreneurial landscape is inherently competitive, and while moral and environmental reasons are strong drivers, economic incentives can accelerate the adoption of sustainable practices (Hartley et al., 2023). Olga (recycling) touches on the importance of clarity and awareness in incentivization. She asserts, ‘...The key lies in clarity and direction. If manufacturers are provided with clear guidelines on environmentally friendly packaging coupled with tangible benefits for adherence, it sets the stage for a conscious shift. Understanding the eco-standards and seeing the direct benefits will inevitably push businesses toward sustainable choices...’ Through her insight, Olga emphasizes the importance of a systematic approach in which the benefits of eco-compliance are both evident and advantageous to businesses.

Van’s (recycling) perspective sheds light on the profound influence of cost dynamics on business decisions. He states, ‘...In business, the bottom line is everything. While environmental consciousness is growing, the quickest way to catalyze a shift toward eco-friendly practices is by making them financially attractive. If there are tangible monetary incentives, such as tax breaks or reduced costs associated with green practices, businesses will not just consider, but actively pivot toward them...’ Ivan’s viewpoint underscores the pragmatic side of business operations where financial incentives can act as a significant catalyst in promoting eco-friendly transitions.

Collectively, these insights point toward an integrated approach in which clear guidelines, coupled with enticing financial incentives, can drive businesses toward environmentally sustainable operations. By aligning economic benefits with eco-friendly practices, Kazakhstan can create a business ecosystem in which sustainability and profitability can go hand in hand.

Strengthening regulatory frameworks. The underpinning of a robust and sustainable business environment lies in the regulatory framework. Comprehensive, transparent, and enforceable regulations act as guiding beacons for businesses, ensuring that they operate within the desired parameters while also facilitating innovation and growth. Regarding the circular economy, appropriate regulatory structures can inspire and mandate businesses to adopt more sustainable practices. Aidar’s (recycling) perspective highlights the importance of transparency and clarity in policymaking. He emphasizes, ‘...In an evolving ecosystem such as the circular economy, businesses look toward the state for guidance. A clear, transparent, and actionable policy framework can serve as a roadmap for businesses, allowing them to align their strategies and operations in a manner that is both profitable and sustainable...’ Aidar’s insight underscores the role of the state in setting the tone for business operations, particularly in an area as nuanced and impactful as the circular economy.

Ivan (recycling), drawing from international practice, provides a tangible solution to regulatory challenges. He suggests, ‘...Europe has set benchmarks in terms of legislation that promotes sustainability. Their regulatory models compel manufacturers to be transparent in their labeling and streamline their products to minimize environmental impact. Emulating such practices can ensure that businesses in Kazakhstan are not just compliant but also competitive on a global scale. Clear guidelines on labeling and product design can empower consumers to make informed choices, thereby fostering a culture of conscious consumption. Through his insight, Ivan underscores the dual benefit of robust regulations - fostering business competitiveness and promoting consumer awareness.

These insights from Aidar (recycling) and Ivan (recycling) reiterate the importance of a strong, transparent, and actionable regulatory framework. For Kazakhstan, drawing inspiration from global best practices and tailoring them to local needs can set the stage for a vibrant and sustainable circular economy. Emphasizing the need for transparency, clarity, and enforceability in regulations can provide businesses with the tools they need to innovate, compete, and thrive in an environmentally conscious landscape.

Institutional support through incubators. Incubators have long been recognized as crucibles for innovation and entrepreneurial success. By providing budding entrepreneurs with resources, mentorship, and a supportive ecosystem, they play a pivotal role in transforming embryonic ideas into viable businesses. In the field of circular entrepreneurship, especially in developing countries, the role of incubators becomes even more pronounced given the sector's relative novelty and its intrinsic challenges.

Saule (eco-initiative consultant) touches upon an innovative approach that looks at embedding the concept of circular entrepreneurship from the early stages of education. She emphasizes, '...The future of circular entrepreneurship lies in the hands of the next generation. By establishing incubator zones within educational institutions, such as schools and universities, we are laying the foundation for a new wave of entrepreneurs. Here, students can blend innovative thinking with environmental responsibility. This early exposure will not just foster entrepreneurial ambitions but will ensure that they are rooted in sustainability. These zones can become hubs where students brainstorm, collaborate, prototype, and most importantly, are ingrained with the ethos of circular entrepreneurship from a young age.

Nazym (consulting), on the other hand, underscores the importance of role models and successful case studies in inspiring potential entrepreneurs. She points out, '...Every successful story in circular entrepreneurship is a beacon for others. When budding entrepreneurs see real-world examples of businesses that have thrived by adopting sustainable practices, they demystify their journeys. These success stories not only provide practical insights, but also reinforce the viability and profitability of sustainable businesses. By highlighting and celebrating these successes, we can create a ripple effect, inspiring more individuals to embark on the journey.

Incubators, whether within educational institutions or stand-alone entities, play a dual role (Hull et al., 2021). They are both breeding grounds for new ideas and support systems for their realization. By intertwining the principles of circular entrepreneurship with incubation processes, there is the potential to catalyze a wave of businesses that are both innovative and sustainable. As Saule and Nazym highlight, it is about nurturing the right mindset from a young age and showcasing tangible successes to create a momentum that is both aspirational and achievable.

Establishing Eco-associations for Collaborative Efforts. In the complex ecosystem of circular entrepreneurship, associations play a multifaceted role. They act as conduits for information exchange, advocates for businesses at policy-making levels, and platforms that foster collaboration and shared learning. With Kazakhstan witnessing a burgeoning eco-community, there is a pressing need to institutionalize these efforts, harness their collective strength, and ensure that their voices are amplified. Diana (retail) paints an optimistic picture of the future collaboration between the eco-business community and the state. She articulates, '...The eco-movement in Kazakhstan is not a mere trend, but an evolution in thought and action. Businesses such as ours are at the forefront of this shift and are eager to drive impactful changes. We envision a future in which the state and businesses work in harmony, drawing from each other's strengths. Our aspiration is to be at that collaborative table, lending our expertise and insights to steer the country toward a sustainable future.'

Anar (an eco-initiative consultant) delves deeper into the functional benefits of forming associations. She emphasizes, '...In the world of circular entrepreneurship, no entity is an island. The challenges we face, solutions we devise, and victories we achieve often have common threads. Establishing associations provides a structured method to intertwine these threads. Such bodies can act as collective voices, representing the diverse, yet aligned interests of eco-businesses at the governmental level. Moreover, in today's interconnected world, associations can pave the way for international liaisons. By fostering dialogue and exchange with their global counterparts, Kazakhstani eco-entrepreneurs can gain insights, share best practices, and amplify their impact.'

Drawing from Diana and Anar's insights, it is clear that, as the eco-community in Kazakhstan continues to grow, cohesive and collaborative efforts become indispensable. Associations not only offer a framework for such collaboration, but also lend credibility and strength to the sector's advocacy efforts. By bringing together like-minded businesses under one umbrella, these associations can play a pivotal role in shaping policies, driving innovations, and most importantly, ushering in a sustainable future for the nation.

5. Discussion and conclusions

This study sheds light on the emerging concept of circular entrepreneurship and its potential in Kazakhstan, an emerging market with natural-resource-driven economic development. The transition from a linear economy to a circular economy has become crucial in the face of mounting environmental challenges and resource scarcity, making circular entrepreneurship a transformative approach to business that aligns with the circular economy principles.

The findings of our research highlight the profound impact of personal experience on environmental consciousness among entrepreneurs in Kazakhstan. Circular entrepreneurship has emerged as a promising response to environmental challenges, with circular entrepreneurs actively striving to create positive impacts and new markets. The challenges of balancing financial and non-financial goals, promoting profitability, and cooperating with stakeholders underscore the need for policy and legal support.

Currently, Kazakhstan lacks a clear policy framework for promoting circular entrepreneurship. The participants of our study suggested various policy changes to promote circular entrepreneurship in Kazakhstan. These recommendations include improving public awareness of the environmental impact of production and consumption, providing taxes and other financial incentives to nudge producers toward circular practices, and establishing clear policies that promote and support circular entrepreneurship. Our data illustrate the need to enhance manufacturing and industrial policies to be more environmentally friendly and supportive of circular initiatives. We argue that legal rules and regulations form the foundation for pushing businesses toward adopting circular approaches and strategies. Policymakers must recognize the significance of circular entrepreneurship and design policies that incentivize eco-friendly practices.

In developing countries, such as Kazakhstan, the circular entrepreneurship policy is relatively new. However, the historical background and traditions can smooth the transition and assist in promoting circular principles. We also suggest using incubators to nurture and accelerate circular business initiatives. Incubators can provide technical, financial, and intellectual support to budding circular entrepreneurs, helping them overcome their initial barriers. Additionally, a growing eco-community in Kazakhstan underscores the need to create associations. These associations can play a pivotal role in demonstrating the value of supporting circular businesses at the political level, thereby contributing to the overall economic development of the country.

By implementing the suggested policy changes and fostering an eco-conscious ecosystem, Kazakhstan can pave the way for sustainable development and a thriving circular economy. Circular entrepreneurship can become a driving force for positive change, ensuring a harmonious relationship between economic growth, social responsibility, and environmental conservation.

However, despite the promising potential of circular entrepreneurship, this study revealed several challenges. One major obstacle faced by circular entrepreneurs is their limited public awareness and understanding of the environmental impact of consumer behavior. Overcoming this challenge requires effective communication strategies and policy support to educate consumers on the benefits of sustainable practices.

Despite the valuable insights obtained from this study on circular entrepreneurship in Kazakhstan, several research limitations should be acknowledged. The sample size can be increased and geographically includes all the 17 regions. In addition, the research focused on small- and medium-sized circular-born businesses in Kazakhstan. The exclusion of large and industrial companies may limit the scope of the study, as these entities may have different motivations and challenges related to circular entrepreneurship, especially in the case of shifting business processes from linear to circular. These limitations may impact the generalizability and robustness of the findings, and should be considered when interpreting the results. Therefore, future research should consider expanding the sample size, incorporating diverse business sizes and sectors, and engaging policymakers and stakeholders to provide a more comprehensive understanding of circular entrepreneurship in Kazakhstan and other emerging economies.

In summary, circular entrepreneurship is a promising pathway for sustainable development and economic growth in Kazakhstan. By embracing circular economy principles and adopting innovative business models, entrepreneurs contribute to resource efficiency, waste reduction, and environmental conservation. However, achieving the full potential of circular entrepreneurship requires robust policy

support, enhanced public awareness, and collaboration among stakeholders. With the right policy framework and institutional support, circular entrepreneurship can become a driving force for positive change, ensuring a harmonious relationship between economic growth, social responsibility, and environmental preservation in Kazakhstan.

Ethical approval

This study was approved by the Nazarbayev University Institutional Research Ethics Committee (NU IREC) (approval no. 829/20122023).

Authors' contributions

Zhaksybayeva, N. and Yousafzai, S. made substantial contributions to design the study, analyze and interpret data. Zhaksybayeva, N., Serikkyzy, A. and Baktymbet, A. performed interviews and data collection. Zhaksybayeva, N. drafted the work and Serikkyzy, A. reviewed it critically for important intellectual content. Baktymbet, A. and Yousafzai, S. made a final approval of the version to be published. Serikkyzy, A. and Baktymbet, A. were responsible for financial implications. Zhaksybayeva, N., Serikkyzy, A., Baktymbet, A. and Yousafzai, S. agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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Data availability statement

The data that support the findings of this study are available upon request from the corresponding author, N. Zhaksybayeva. The data are not publicly available due to restrictions, for example, containing information that could compromise the privacy of research participants.

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Appendix 1

Interview guide

1. Can you share the story of initiating your eco-business? What drove you toward this venture?
2. How would you describe or define your brand's essence and values?
3. Can you talk about the challenges you face in establishing and operating your eco-business? Are there any institutional barriers that stand out?
4. In what ways, if any, do you feel your eco-business is distinct from non-eco-businesses? Are there unique challenges or benefits that you have noticed?
5. How do you convey the significance and value of your eco-business to your audience and customers? Are there specific strategies or channels that you prioritize?
6. Do you collaborate or partner with other eco-businesses either within Kazakhstan or internationally? How do these collaborations influence your operations?
7. Could you share some future goals or aspirations for your eco-business?
8. In your opinion, what initiatives or changes would enhance Kazakhstan's eco-business environment? How can stakeholders support such growth?