sustainability

Article

Subscription Economy as a Tool for Promoting Sustainable Consumption in Poland

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Abstract

Entities using business models that integrate sustainability principles into business practice are gaining popularity through innovative measures. One such model is the subscription economy, in which customers pay regularly for access to products or services rather than purchasing them once. The study aims to present the subscription economy as a model that can help promote sustainable consumption. The paper uses a diagnostic survey method and a literature analysis and critique. Based on the literature on sustainable business models, the authors have shown that subscription economics, meeting the conditions of a sustainable model, can play an important role in promoting sustainable consumption (in terms of economic, social, and environmental rationality). The authors' own research showed that Poles are very interested in the subscription model and its greatest importance in terms of economic rationality, which is the most important element of sustainable consumption. This also applies to the younger generation, which, despite being characterized by a high awareness of growing social and environmental problems, identifies sustainability as a secondary motivation to personal benefits such as financial security.

Keywords: subscription economy; subscription model; rationality; sustainable business model; sustainable consumption; Poland

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1. Introduction

Global trends in consumer behavior include a growing awareness of environmental protection and sustainability principles. Overconsumption causes a feeling of fatigue and disappointment among the new generation of consumers, visible in the form of emotional tension, time pressure and persistent dissatisfaction, which strengthens the tendency to rationalize purchasing behavior and consciously satisfy needs. One of the manifestations of the new approach is the idea of the development of sustainable consumption and the emergence of the socially responsible consumer who limits their material needs to those that are essential, prefers a pro-environmental lifestyle, and takes action against the destruction of the natural environment [1–3]. The concept of sustainable development arose due to growing reflection on the nature of the relationship between humans and the environment. The most classic definition of sustainable development is that contained in the World Commission on Environment and Development (the so-called Brundtland Commission) report Our Common Future, which states that sustainable development is a development that meets the needs of present generations without diminishing the ability of future generations to meet their needs [4]. In Polish legislation, sustainable development is defined as 'such social and economic development in which political, economic and social activities are integrated while maintaining the natural balance and sustainability of basic natural processes to guarantee the possibility of satisfying the basic needs of particular communities or their citizens, both the present and future generations' [5]. Some researchers believe there is currently no alternative to sustainable development [6]. The idea of sustainable consumption is derived from sustainable development. It can be defined as "the consumption of material goods and services sufficiently to satisfy basic needs and achieve a higher quality of life, minimizing the consumption of natural resources, environmentally harmful materials generated at all stages of production, while not limiting the rights of future generations to such consumption" [7] (p. 8). From the cited definition, it follows that sustainable consumption should be based on three principles: economic rationality (economic optimization in the choice of goods), environmental rationality (the choice of such goods that cause the least harm to the environment), and social rationality (the choice of goods that solve social problems or at least do not contribute to exacerbating them) [8]. Other authors even distinguish the notion of global rationality and the moderation that is de facto synonymous with it, meaning such functioning of humanity that, in the context of the limits of environmental exploitation, will enable it to survive in the long term. Without continuity, any consideration of well-being, welfare, and the economic or even socio-economic development that contributes to their improvement loses its sense [9]. It should be noted that two views of sustainable consumption can be found in the literature. The first (so-called weak sustainable consumption) is closely linked to the greening of consumption [10] (p. 56). However, it is not about reducing consumption; it is about modifying it so that its visible negative effects are as small as possible. As Neale [11] (p. 155) rightly points out, this approach sustains high consumption levels only with sustainability values in mind. This approach's actions include limiting the consumption of such goods, characterized by the high absorption of the Earth's scarce, non-renewable resources and the creation of dangerous post-consumption waste (environmental level). The second approach (so-called strong, sustainable consumption) implies a reduction in consumption, a change in lifestyle, and a call for ecological citizenship, which requires consumers to give up consumption at current levels for future generations [10] (p. 59). This trend is based on a transformation of the role of the consumer to that of a citizen, who appreciates the intangible pleasures of life and practices active neighborliness based, for example, on exchange, lending, or other forms of sustaining community [12]. The first approach to capturing sustainable consumption (greening of consumption) is more readily accepted by consumers and producers. It applies to a much larger group of consumers than the second approach. Several factors contribute to this: the marketization of the assumptions of sustainable consumption, general accessibility (a range of amenities such as, for example, certification and labeling of goods and the infrastructure for accessing goods), and the prestige dimension of this type of consumption (the purchase of environmentally or people-friendly goods has a prestige dimension and indicates the social status and membership of the individual in the social group to which he or she aspires) [11] (p. 155–156). Strong, sustainable consumption is still only a postulate [12] (p. 37–40), [13] (p. 1–3). It should be noted that the issues of sustainable consumption are addressed in many scientific papers and policy documents at different levels, especially at national and European Union levels. However, in the debate on sustainable consumption (where several different indicators have been identified to measure it), there is still no consensus on the definition of sustainable consumption in terms of determining precisely to what level consumption is sustainable and when it takes the form of unsustainable consumption. The authors propose to consider sustainable consumption as an "umbrella term" that encompasses numerous aspects starting with meeting the needs of consumers and improving their quality of life while improving resource efficiency, increasing the use of renewable energy sources, minimizing waste, taking

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a life-cycle perspective of the goods and services consumed, and the equity dimension [14], which highlights its complexity and multifaceted nature.

From a theoretical perspective, the complexity and multidimensionality of sustainable consumption raise a fundamental question concerning the role of contemporary market-based consumption models in operationalizing its principles. While sustainable consumption is commonly conceptualized through economic, environmental, and social rationality, the literature provides limited empirical evidence on how emerging access-based models translate these dimensions into actual consumer practices. In this context, the subscription economy represents a particularly relevant yet theoretically underexplored model. Situated between ownership-based consumption and sharing-based access models, subscription-based consumption combines market exchange, long-term user-provider relationships, and access without ownership, which makes its sustainability effects conceptually ambiguous. Importantly, although subscription models are increasingly discussed as part of broader debates on the sharing economy and circular economy, they are rarely analyzed as a distinct consumption model in relation to sustainable consumption outcomes. This gap is especially visible in countries such as Poland, where sustainable consumption is widely addressed at the policy and declarative level, yet consumer behavior remains strongly shaped by ownership-oriented norms and economic considerations. Consequently, examining the relationship between the subscription economy and sustainable consumption allows for a theoretically grounded assessment of whether access-based consumption supports primarily economic rationality, or whether it also contributes to social and environmental rationality under specific cultural, institutional, and market conditions.

A sustainable direction of change in consumption requires the identification of instruments that can be applied to the new market situation. It is, therefore, worth considering how to shape contemporary business models to respond to the aforementioned noticeable trends in consumer behavior relating to increased awareness of sustainable consumption. Rogall proposes, in this regard, the implementation of so-called sufficiency strategies, under which he mentions a reduction strategy, a lifestyle change strategy, and a replacement strategy. These strategies involve promoting the abandonment of ‘excess’ and the selection of products that do not involve the need to purchase them outright [15] (p. 205–206). Process and tool criteria indicating how companies can achieve the above sustainability guidelines can also be distinguished. Among others, reformulation of business model components and context-sensitive modeling is suggested. The idea is to be aware of different user groups and their levels of market maturity and to take these nuances appropriately into account in the tools used. Another criterion is collaborative modeling—this criterion determines who is actively involved in the processes and what interactions participants have with each other. Another criterion is impact and outcome management, as the results of planned actions in practice usually differ from those assumed during planning and modeling. One of the primary outcomes of a sustainable action should be to positively impact the environment, which is why it is important, yet difficult, to select and implement appropriate metrics [16] (pp. 274–278).

In the literature, authors primarily point to usage-based models as those that play an important role in creating a more sustainable world, promoting ‘positive’ materialism, which manifests itself in placing importance on the quality of the goods purchased and extending the cycle of use of the product [17–19]. Most of the existing research on the impact of these models on sustainable consumption refers to the concept of the sharing economy and does not directly discuss the subscription economy, which is of interest to the authors of this paper [19–22]. The different approaches to sustainable business models have in common their focus on value creation and extending the concept of value over ‘normal’ business models to include social and environmental aspects [23].

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Despite the significant growth of subscription-based businesses, very little is known about the consumer experience of the analyzed business model, especially in the Polish market. The authors decided to fill this gap, recognizing that this model can be regarded as a sustainable business model that responds to contemporary demand trends.

The digital transformation in Poland and Central and Eastern Europe has accelerated the development of e-commerce, digital platforms, and new business models, changing the way in which businesses operate and consumers access goods and services. As a result, there has been a clear shift in consumption patterns towards online shopping, greater personalisation, convenience, and the use of digital services, although the pace of these changes remains varied compared to Western Europe [24]. Additionally, it should be noted that the Central and Eastern European (CEE) region is characterised by the greatest diversity in levels of digital technology adoption [25]. Poland has been named a 'Digital Contender', ranking among the 10 Central and Eastern European countries for which the digital economy has historically been a key growth factor [26]. In Poland, subscription services are most developed in the telecommunications, energy, and medical sectors, while the penetration of tangible goods subscriptions (e.g., food boxes, fashion, or household items) remains relatively low. This reflects both the higher logistical costs of distribution and the still limited scale of e-commerce adoption in comparison to Western European markets [27,28]. In practice, digital subscriptions such as Netflix, Spotify, HBO Max, Disney+, software packages such as Microsoft 365 and Adobe Creative Cloud, or medical subscriptions such as Luxmed, Enel-med, and Medicover are the most common in Poland. In the case of subscriptions to transport, gastronomic, accommodation or physical products—such as Traficar, Bike Club, eDreams Prime, Bidroom, BlissimBox, PetBox, Grabli or Wine me—their acceptance is limited, and the pace of implementation of this model remains lower than in other European countries.

In the Polish market, the persistence of ownership-oriented consumer attitudes is a significant barrier to the wider adoption of access-based models. Ownership of goods is still strongly linked to social status, which slows down the cultural acceptance of the subscription economy compared to Western Europe [28]. Another problem is the low awareness of Polish consumers about this model in the context of its potential for wider application, which is related to the still limited number of companies implementing this solution. In this context, the experiences of Polish consumers are particularly valuable, as they provide insight into how local conditions shape the adoption of subscriptions and their potential for promoting sustainable consumption in the country.

This article aims to present the subscription economy as a model that can support sustainable consumption. The authors pose the following fundamental questions: Does the subscription economy promote sustainable consumption patterns? And what are consumers' perceived barriers and benefits in adopting the subscription model from a sustainable consumption perspective? The article is theoretical and empirical in nature and includes the authors' research findings on Polish consumers' experiences with the subscription economy. The study uses a method of analysis and critique of the literature and a diagnostic survey method.

The analysis of the relationship between the subscription economy and sustainable consumption makes a significant contribution to the development of theory in both conceptual and empirical terms. From a theoretical perspective, the subscription model extends classical concepts of consumption and the sharing economy, showing that the shift from ownership to access can promote more sustainable consumption patterns, extend product life cycles, and reduce overproduction and resource waste. Furthermore, it takes into account the diverse motivations of consumers—from convenience and financial savings to

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environmental values—which allows for a better understanding of purchasing decisions in the context of sustainable consumption.

Poland combines the characteristics of developed and emerging markets, which allows for the analysis of the development of the subscription economy in conditions different from those that have dominated previous studies conducted in highly developed countries. The early stage of adaptation of subscription models in Poland allows for the observation of adaptation processes and the identification of barriers and factors conducive to the implementation of this business model. This research broadens the basis for conducting diverse comparative analyses for other Central and Eastern European countries facing similar challenges. An analysis of the Polish market allows us to identify which types of subscriptions effectively support sustainable consumption and which encounter financial or institutional constraints, thus enabling the adaptation of subscription models in other context.

2. Literature Review

The subscription economy is viewed as a transformative model that redefines traditional markets and consumer use of products and services [29–32]. Based on the minimum guidelines developed by Breuer and co-authors [16] that enable sustainable business models to be constituted, it can be seen that the subscription economy fulfills them (Table 1).

Table 1. Guiding principles and process-related criteria for sustainable business models using the subscription economy as an example.

Sustainability orientation in the objectives and values on which a specific project is based	Example: Streaming platforms like Netflix and Spotify eliminate the need to produce physical media, which reduces resource consumption and transport emissions. Rent the Runway offers subscriptions to rent clothes, which reduces the production of new clothes and reduces textile waste.
Extended value creation	It is generating benefits (social and environmental) that go beyond traditional financial returns
Systems thinking	Analysis and optimization of internal and external processes that support the subscription model
Stakeholder integration	Actively engage all groups that influence or are influenced by the business. A business model that considers the needs, expectations, and contributions of different stakeholders such as customers, employees, suppliers, investors, local communities, and non-profit organizations

Source: elaboration based on [16].

Subscription economics can play an important role in promoting sustainable consumption. It promotes sharing and lending instead of ownership, which is the common ground between sustainable consumption and the subscription economy, as in both cases, access to goods and services is more important than ownership. The subscription economy, characterized by a shift from material ownership to access-based consumption, has the potential to promote sustainable consumption [33]. This is further supported by the sharing economy, which emphasizes the efficient use of resources through collaborative consumption [34]. The circular economy, with its focus on closed-loop systems and resource efficiency, also aligns with the principles of the subscription economy [35]. Adopting fashion subscription services has been found to promote sustainable consumption in the fashion industry, with psychological ownership playing a key role in driving this shift [36]. From the perspective of economic rationality, subscription economics, recognized as one of the foundations of sustainable consumption, enables more predictable expenditure and improved budget planning through the use of fixed-cost structures. Moreover, subscription-based models may offer financial advantages to users by providing more attractive pricing than one-time purchases, along with flexible pricing mechanisms such as tiered plans or hybrid schemes combining fixed membership fees with usage-based charges. Consumers can, therefore, save money, especially if they regularly use access to a particular service or product. Moreover, while subscriptions may encourage consumption on a scale beyond the economic capacity of consumers and require sound household budget management, it should be emphasized that subscription spending is more predictable and, therefore, facilitates budget planning, which promotes consumers' economic rationality behavior [17]. From a social rationale perspective, a subscription economy based on the access economy equalizes wealth inequalities; for example, a poor person can enjoy a luxury hotel with a subscription. By spreading costs into more affordable fees, such as monthly payments, the subscription model makes expensive products more accessible to a wider audience, allowing individual customers to enjoy premium products without the need for large investments. However, it should be noted that this does not apply to all products (e.g., luxury cars) due to the high financial security requirements (deposits), which often exceed the average consumer's means and constitute a real barrier to accessing the subscription economy. Based on the development of new technologies, the subscription model also increases the availability of products and services by including people previously partially excluded from the digital economy for economic reasons. Harris Poll conducted for Zuora surveyed over 13,000 adults across twelve countries. The results showed that almost 60% of respondents favor having fewer belongings. Conversely, almost 70 percent indicated that an individual's social status is no longer determined by their ownership. At the same time, 70 percent agreed that subscribing to products and services can relieve them of the responsibilities associated with ownership [37], a trend particularly pronounced among younger generations [38–40]. This allows consumers to experience what various products and services can offer them without many inconveniences of ownership, including negative environmental impacts, which also relates to another pillar of sustainable consumption—environmental rationality. At the same time, it is not simply about providing access to products or services without owning them. It is important to offer customers flexible access to products and services regarding movement and types of use, so they prefer use over ownership. In the subscription economy, it is important to understand changes in consumer trends while applying a customer-centric value proposition [41]. The subscription model promotes a circular economy by encouraging the reuse and recycling of products [42]. As a result, this model can help decrease waste and resource use by allowing multiple users to share products or services, prolonging their lifespan (e.g., through updates), reducing emissions and environmental pollution (e.g., via subscription-based transport), and promoting sustainable business practices such as green delivery methods, recyclable packaging, and the adoption of eco-friendly materials, e.g., Refs. [30,43,44]. The subscription economy encourages manufacturers to create more durable and higher-quality products, as there is a reversal of who is responsible for the product life cycle. Suppliers are encouraged to manage the entire product lifecycle, as this enables them to increase the overall customer lifetime value (CLTV) [17]. Consumers are more likely to renew their subscriptions if they perceive the products as reliable and high-quality. The subscription model focuses on the development of long-term relationships with loyal subscribers rather than on single, transactional sales [16,27,45–49]. This approach aligns the model with the principles of relationship economics, emphasizing the cultivation of customer trust and sustained loyalty [50,51]. An ongoing and deep relationship enables the collection of more information on consumer needs and preferences, influencing a high level of personalization of products and services. As a result, the customer receives exactly the product he or she expects, significantly reducing the materials and resources wasted in the production process. The organization and management of customer data required by this model result in better inventory management by the company and a reduction in excess stocks. Indeed, more accurate demand forecasting allows the right amount of products to be produced and overproduction to be avoided, which reduces waste and leads to significant savings.

To summarise the above concepts, it should be noted that the subscription economy, the sharing economy, and the circular economy are different but complementary concepts. Ritter and Schanz [52] conceptualize the subscription economy as a subset of the sharing economy, highlighting their common orientation toward the promotion of sustainable development. Whereas the sharing economy is primarily concerned with the redistribution and shared use of resources, the subscription model emphasizes continuous access to goods or services without the necessity of full ownership. The circular economy is a systemic model for reducing resource consumption by closing material cycles throughout the entire product life cycle. Although subscription and sharing models can support the implementation of circular economy principles, they are not synonymous with it, as not all access or sharing leads to the actual closure of resource cycles.

It should also be emphasised that, although the subscription economy promotes sustainable consumption, it faces significant barriers, including those related to data privacy and digital exclusion. Subscription models rely on the collection and analysis of large amounts of user data, which raises privacy concerns, profiling abuse and heavy regulatory burdens, particularly in the context of GDPR rules, and requires high standards of security and transparency in the processing of consumer information—as shown in the literature on platform models, where the relationship between the business model and the intensity of consumer data collection is key to user trust and the effectiveness of the digital platform [53]. At the same time, digital exclusion—understood as a lack of access to digital infrastructure, poor technology skills and economic constraints on access to subscriptions—may prevent various social groups from fully participating in the subscription economy, as reflected in analyses of digital divides in the EU, which point to differences in skill levels and internet access among the population [54]. This problem is particularly acute in Poland, which remains one of the most digitally excluded EU countries, with as many as 15% of its population having never used the internet (up from 9% on average). This concerned mainly older, poor people living in villages [55].

3. Materials and Methods

The research process consisted of several stages. The starting point was the observation of the growing importance of the subscription economy as a new consumption model and the lack of detailed and comprehensive empirical research on its impact on sustainable consumption patterns. Although subscription practices are often perceived as promoting sustainable consumption, their actual influence on consumer behavior remains ambiguous and insufficiently understood. The next stage involved defining the research objective and research problem. The main research question was formulated as follows: Does the subscription economy promote sustainable consumption patterns? In addition, a specific research question was posed: What barriers and benefits do consumers perceive in adopting the subscription model from a sustainable consumption perspective? The study aimed to present the subscription economy as a model that may support sustainable consumption.

The literature review covered scholarly publications on the subscription economy, constrained consumption, and accessible consumption models. The literature was collected and analyzed between 2 July 2023, and 2 February 2024, focusing on peer-reviewed journal

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articles and academic monographs. The purpose of this stage was to identify the current state of knowledge, refine the theoretical framework, and identify research gaps. The critical review of the literature included an assessment of methodological quality, the validity of conclusions, and the relevance of findings to the research problem. Based on the literature review, the following research hypotheses were formulated: H1: The subscription economy exerts the strongest influence on sustainable consumption in terms of economic rationality. H2: The subscription economy exerts a significant influence on sustainable consumption in terms of social and environmental rationality among Generations Y and Z. The formulation of the research hypotheses was grounded not only in the theoretical literature but also in observed subscription-based practices operating on the Polish market. Subscription models in Poland are most developed in sectors such as telecommunications, digital media, software, energy, insurance, and private healthcare, where their primary value proposition is cost predictability, budget control, and ease of access. These characteristics correspond directly to economic rationality, which is frequently identified in the literature as the most operationalized and immediately observable dimension of sustainable consumption. This empirical context provides the basis for Hypothesis 1. Hypothesis 2 was formulated to examine whether, beyond economic rationality, subscription-based consumption may also support social and environmental rationality among specific consumer groups. Previous studies indicate that younger generations are more open to access-based consumption, digital services, and sustainability-related values. Observations from the Polish market, including the growing use of digital cultural, educational, mobility, and health-related subscriptions among younger consumers, suggest a potential generational differentiation in sustainability motivations. Importantly, Hypothesis 2 is not an alternative to Hypothesis 1 but complementary, as it assumes that economic rationality constitutes a foundational condition upon which social and environmental rationality may develop.

In the subsequent stage, a quantitative diagnostic study was conducted using a standardized online survey questionnaire (CAWI). The study surveyed 350 respondents between 2 October and 4 December 2023. The requirement of internet access constituted a limitation of the sample selection. The questionnaire was developed based on established measurement scales reported in the literature, capturing key dimensions of sustainable consumption, including economic, social, and environmental rationality, as well as perceived benefits and barriers related to the adoption of the subscription model. The reliability and validity of the research instrument were verified through an assessment of content consistency with the defined constructs, analysis of the scale structure, and evaluation of the internal consistency of the applied measures. The collected data were then subjected to statistical analysis to test the research hypotheses and to identify perceived benefits and barriers to adopting the subscription model from a sustainable consumption perspective. Finally, the results were interpreted in the context of the existing literature, indicating the extent to which the subscription economy can serve as a tool supporting sustainable consumption, as well as the methodological limitations that should be considered when generalizing the findings.

4. Results

The study identified three pillars of sustainable consumption: economic, social, and environmental rationality. The questionnaire was structured into thematic sections reflecting the study objectives. The initial sections focused on the use of subscription services and consumer attitudes toward the subscription model, while the final section collected socio-demographic data, including gender, age, education, place of residence, and income. These variables were used to describe the structure of the research sample. In this article, the empirical presentation is limited at this stage to the demographic characteristics of the respondents, which provide the necessary background for interpreting subsequent analyses. Detailed results concerning attitudes toward the subscription economy and sustainable consumption dimensions are presented in later sections of the study. Among the respondents, 53 percent were female, 46 percent male, and three participants identified as another gender. In terms of age, 30 percent were 18–24 years old, 32 percent were 25–44, 24 percent were 45–59, and the smallest group, aged 60 and above, accounted for 14 percent. Regarding education, more than half had a tertiary (28 percent) or incomplete tertiary education (26 percent), one-third had completed secondary education (33 percent), while smaller proportions held vocational (8 percent) or primary education (5 percent). The majority of respondents lived in towns and cities with populations between 150,000 and 500,000 (27 percent), followed by settlements with up to 50,000 inhabitants (22 percent), over 500,000 inhabitants (20 percent), and between 50,000 and 150,000 inhabitants (17 percent); rural residents comprised 14 percent. Concerning monthly net income, the largest groups reported earnings between PLN 3000 and 4000 (28 percent) and between PLN 4000 and 5000 (24 percent), with similar proportions earning between PLN 1500 and 3000 or over PLN 5000. The smallest group included respondents earning less than PLN 1500. Demographic data of the respondents is presented in Table 2.

Table 2. Demographic characteristics (N = 350).

Characteristic	Category	N
Gender	women	185
	man	162
	other	3
Age	18–24	106
	25–44	112
	45–59	82
	≥60	50
Education	higher	98
	incomplete higher	92
	secondary	116
	professional	28
	primary	16
Place of residence	Village	49
	<50,000	77
	50–150,000	61
	150–500,000	93
	>500,000	70
Income	<1500	32
	1500–3000	70
	3001–4000	98
	4001–5000	82
	>5000	68

Source: own elaboration based on survey results (N = 350).

It should be stressed that the demographic structure of Polish respondents also highlights the problem of digital exclusion. Subscription services, especially those based on digital platforms, are far more accessible to residents of large urban areas, while consumers in rural regions face infrastructural barriers such as weaker internet connectivity or lower purchasing power [56].

The main section of the questionnaire opened with a question regarding respondents' engagement in the subscription economy. Nearly 80% of participants indicated that they were involved, and only these respondents continued with the remainder of the survey

(Figure 1). The most popular among respondents were telecommunications/TV, household, healthcare and insurance services, computer software, and transport services.

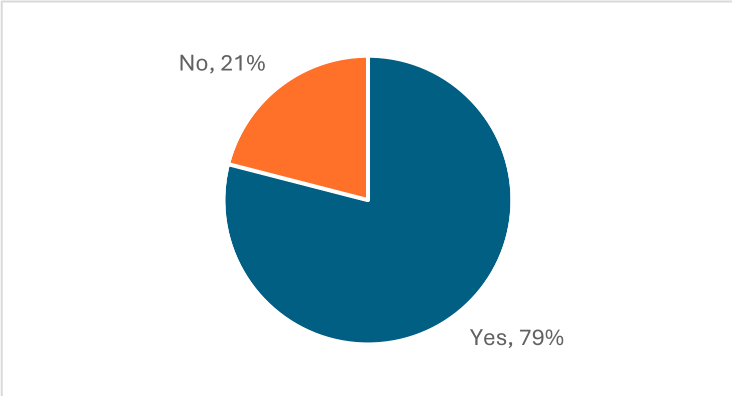

Figure 1. Participation of respondents in the subscription economy. Source: own compilation based on the results of own research.

The subscription areas were divided into general, leisure, and tourism subscriptions (intentionally separated within the second category). The authors distinguished between subscriptions for tangible and intangible products based on the responses. As tangible products, they assumed physical products that could be stored, requiring transport, raw materials, and production processes. In contrast, they take intangible products as non-physical products that cannot be stored, are mainly delivered online, and are often based on knowledge and skills.

Intangible products accounted for 86 percent of indications, while tangible products accounted for only 7 percent (Figure 2). They were indicated far more frequently in each age group of respondents. This may be because intangible products, such as software, music, or films, can be delivered over the Internet without physical production, storage, and transport costs. Shipping tangible products involves higher logistical costs. Digital products can be accessed on various devices—computers, tablets, smartphones—making them more accessible and convenient.

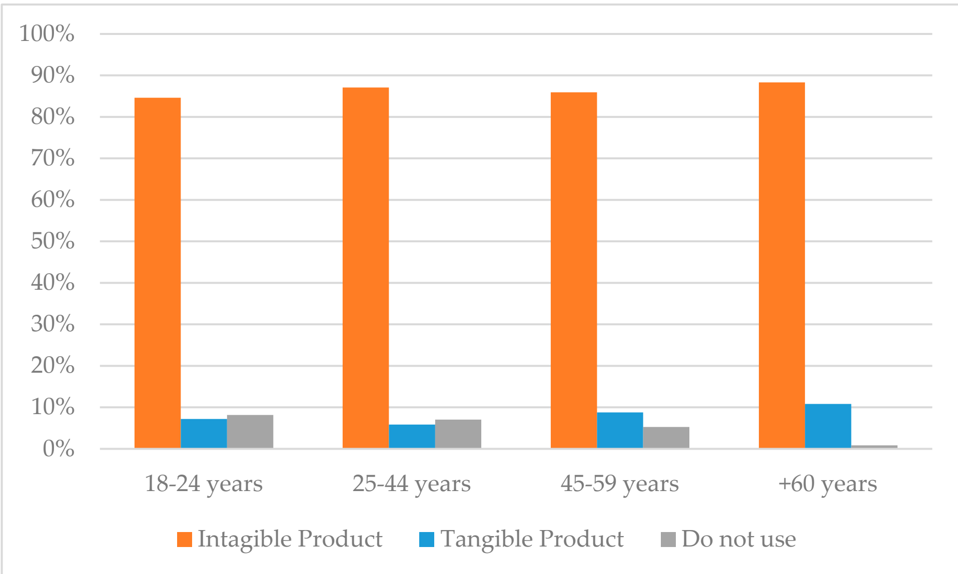

Figure 2. Use of tangible and intangible products by respondents. Source: own elaboration based on survey results.

In the general category, the dominant intangible products were telecommunication services (127 indications), energy services (essential for the home, 126 indications), and medical services (112 indications), and among tangible products were subscriptions to food, clothing, and beauty products (24 indications). In the category of leisure activities, streaming services (200 indications), i.e., access to services such as Netflix, HBO (now Max), and music (154 indications), dominated among intangible products. Tangible products included board games, card games, and sports equipment (19 indications). In the tourism category, subscriptions to booking platforms, e.g., Booking.com (93 indications) and accommodation subscriptions (78 indications), dominated among intangible products. Included in the tangible products were subscriptions to transit—scooters, bicycles, etc. (48 indications).

In addition, the authors categorized the respondents' choice of goods into necessity, essential, and luxury goods (Figure 3).

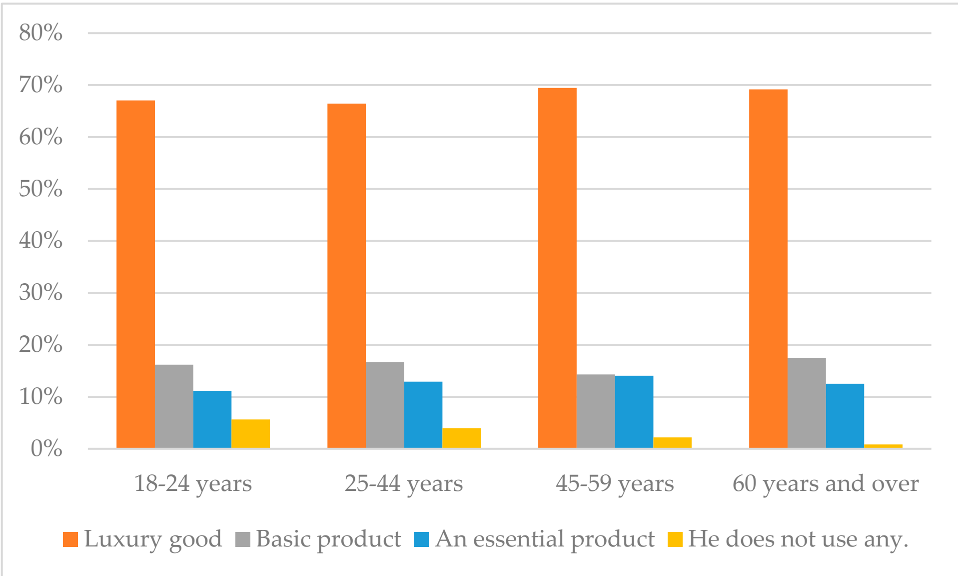

Figure 3. Subscription use of basic, essential, and luxury products. Source: own elaboration based on survey results.

A primary good refers to material goods and services necessary for survival and satisfying basic human biological needs. Essential goods are the same for everyone, regardless of individual differences, preferences, or life situations. Every person should have equal access to them. Luxury goods are a category of goods widely perceived as a sign of wealth and prestige, and their possession and consumption go beyond the basic needs of life. They are characterized by their high quality, rarity, and often high price. Luxury goods accounted for as much as 86 percent of respondents' indications, while essential goods accounted for 16 percent and necessities for 13 percent (Figure 3). As mentioned earlier, luxury goods are often expensive. Subscriptions allow costs to be spread over smaller, regular payments, making these products more accessible to more people. In addition, luxury subscriptions often offer unique, personalized experiences and products that are difficult to find in regular shops. Consumers are attracted by the opportunity to receive exclusive or limited edition products, which increases their sense of uniqueness and prestige. In the general category, insurance and transport services dominated luxury products (75 indications); in the leisure category, it was streaming services (200 indications) and physical activity (104 indications); in the travel category, subscriptions to booking platforms (93 indications)—a similar breakdown applied to each of the age groups identified. Among the factors influencing respondents' decisions to engage in subscription-based services, price emerged as the most significant determinant (Figure 4). Other key motivating factors included the range of available services or products, ease of use, and the availability of free products as well as promotional offers. Thus, it should be considered that within the motivations for participation in the model analyzed, economic rationality (price, freebies, and promotions), one of the dimensions of sustainable consumption, is most important to the respondents surveyed. This is followed by social rationality (access to products and services and scope), and lifestyle change relating, in particular, to care for the natural environment comes last. Analyzing the results of the study in separate age categories, it should be noted that price is the most critical factor for representatives of all the age groups surveyed, and lifestyle change was the more critical determinant of model choice for those in the 45 to 59 age group (26.83 percent).

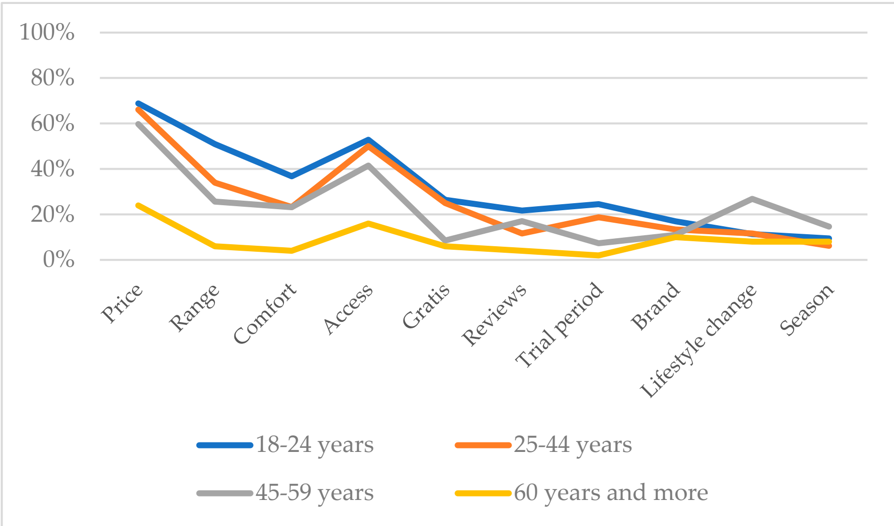

Figure 4. Factors influencing subscription economy decisions across age groups. Source: own elaboration based on survey results.

After identifying the factors motivating the use of subscription products and services, respondents indicated the benefits of this model. Over half of the participants considered cost-sharing with others (56.5%) and predictable, fixed costs that facilitate budgeting (54.3%) as the most important benefits. These were followed by the convenience of not having to make individual payments each time (37%), time savings (32.2%), the opportunity to try the product or service through a free trial (20.3%), the possibility of product/service personalization (18.1%), and access to the latest version of the product or service (15.6%). The results also revealed that high service quality was not regarded as a key advantage by most respondents. Additional responses in the 'Other' category highlighted a sense of security and continuous access to the service. Analyzing the results of the survey in separate age categories, it should be noted that for those aged 18 to 24 and 45 to 59, the critical benefit of a model was the potential for cost-sharing (56.60 percent and 42.68 percent, respectively), while for the group aged 25 to 44, it was primarily essential to maintain fixed costs (50.89 percent). By contrast, respondents aged 60 and above most frequently highlighted the importance of fixed costs and cost-sharing opportunities (18%). Overall, participants across all age groups valued the benefits of the subscription model primarily from an economic perspective. The model's fixed costs allow for more predictable spending, enabling more effective budgeting. Benefits related to social rationality were also noted, though to a lesser extent. The percentage distribution of the main advantages of the subscription model is presented in Figure 5.

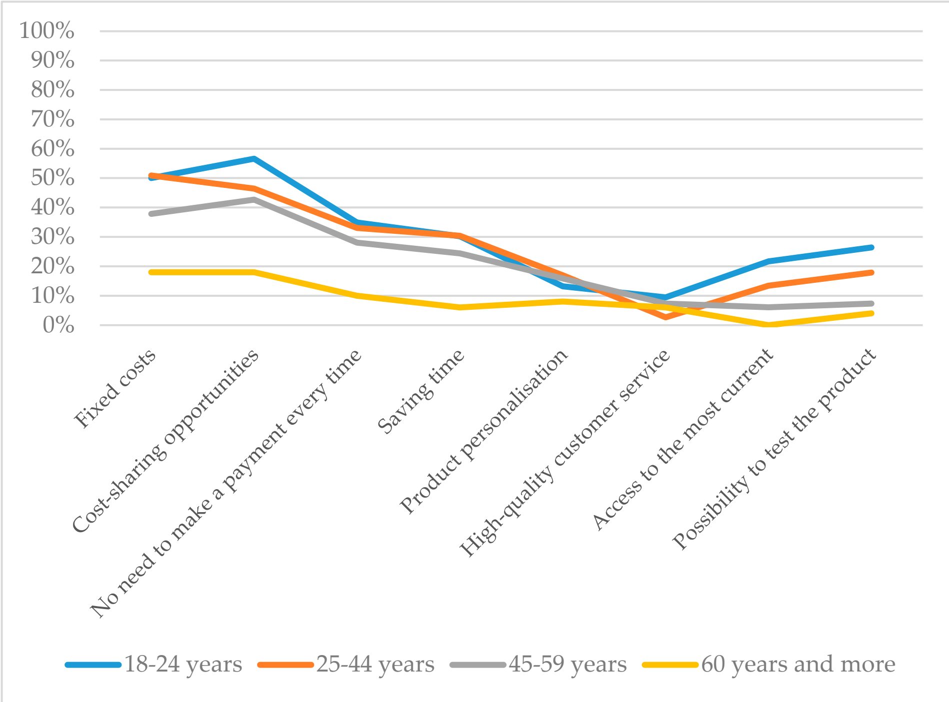

Figure 5. The main benefits of subscription models among the surveyed age groups. Source: own elaboration based on survey results.

After outlining the advantages of the subscription model, respondents were asked to indicate its key disadvantages. Half of the participants considered that subscribing to multiple services simultaneously, that are used infrequently, could result in unnecessary spending—this concern was most prominent among those aged 25 to 44 (48.21%) and among respondents aged 60 and over (18%). Additionally, respondents highlighted potential risks related to the handling of personal data by companies operating subscription services, with this issue being most significant for the 18–24 age group (44.34%) and the 45–59 age group (37.8%). One in three respondents also points to price volatility (29.3 per cent) (most important for those aged 18 to 24, 32.08 per cent) and not owning the products or services (28.6 per cent) (least important for those aged 60 and over, 14 per cent). Approximately 20% of respondents considered challenges related to ending subscription agreements and dependence on the company or service provider as important drawbacks, with these concerns being least significant among participants aged 60 and over (4% each) (Figure 6). Once again, the survey results indicated the high importance of subscription economics in promoting economic rationality (price volatility, subscribing to too many services at the same time that are not used regularly, leading to unnecessary spending). The lack of product ownership indicated by respondents as a significant drawback of the model indicates the lesser importance of the model analyzed for sustainable consumption in terms of its social and environmental rationality.

To further explore the disadvantages and risks of the model, participants were asked to express their opinion on the statement that subscriptions lead to excessive accumulation of goods or services that are not used (Figure 7). Half of the participants agreed with this statement (combining 'strongly agree' and 'tend to agree'), while fewer than 40% expressed a different view, and the remainder were undecided. Agreement levels varied by age group: over 50% of respondents aged 18–24 agreed, nearly 50% in the 25–44 group, more than 40% in the 45–59 group, and over 60% among those aged 60 and above. The responses obtained show that Poles are still quite unaware of the impact of the subscription model on sustainable consumption. This is confirmed by the responses to the question posed to respondents: Do you regularly review your subscriptions to see if they are still relevant and profitable for you? Only just over half of the respondents (54%) gave a positive answer to this question. The remainder gave a negative answer, which demonstrates the untapped potential of the subscription economy in promoting sustainable consumption among Poles.

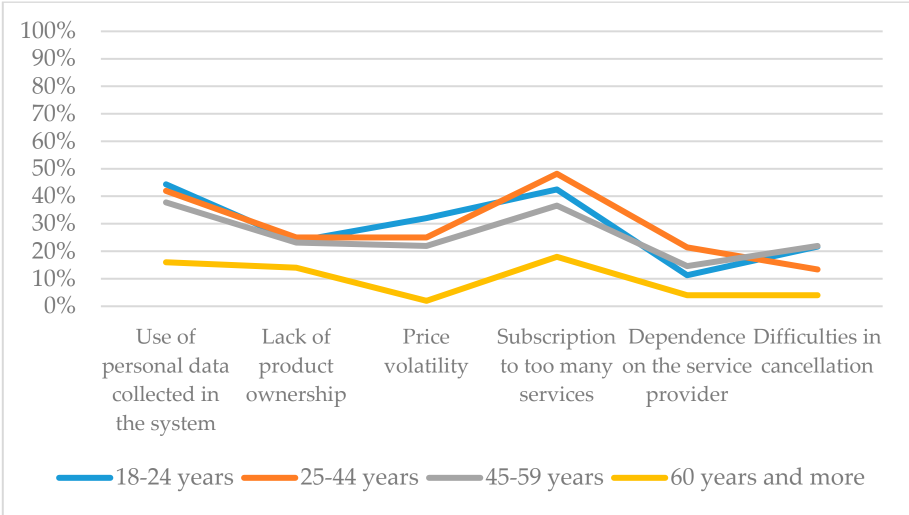

Figure 6. The main disadvantages of subscriptions among the surveyed age groups. Source: own elaboration based on survey results.

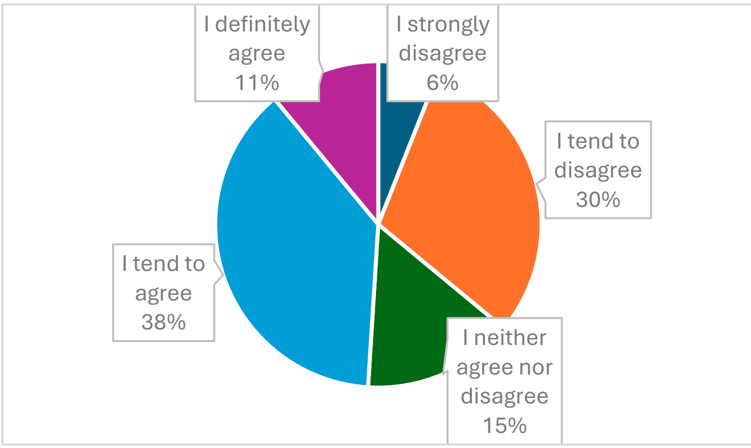

Figure 7. Respondents' responses on the impact of subscriptions on excessive product or service hoarding. Source: own elaboration based on survey results (N = 276).

The final section of the survey examined respondents' intentions regarding their future engagement with the subscription economy. Participants were asked whether they plan to increase their subscriptions in the coming years. The results indicate that nearly half of the respondents intend to expand their participation ('yes' and 'definitely yes'), around one-third do not foresee any increase, and 25% were uncertain (Figure 8). When analyzed by age group, over 40% of respondents in both the 18–24 and 25–44 groups plan to increase their subscriptions, nearly 50% in the 45–59 group, and more than 75% among those aged 60 and above.

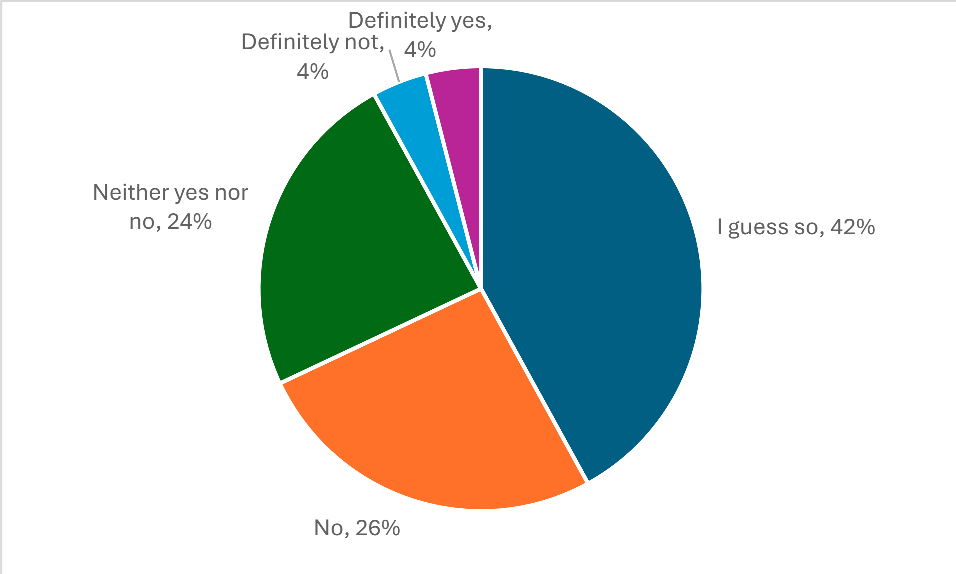

Figure 8. Respondents' responses regarding plans for using subscription models. Source: own elaboration based on survey results (N = 276).

When examining the factors that could motivate respondents to expand their subscriptions in the coming years, it is noteworthy that a lower price emerged as the primary driver, cited by 145 participants. The weighting of economic factors in terms of the choice of subscription model in the future, therefore, indicates its importance mainly in terms of economic rationality. In second place (102 indications) was a greater variety of subscription models (including those taking into account sustainability/consumption principles), which gives hope for an increased role of subscription economics in promoting sustainable consumption, also in terms of social and environmental rationality. An average of 50 indications was given to the answers: easier procedure for cancelling subscriptions and the possibility of individual control over subscriptions, which may also indicate increasing consumer awareness of controlling their subscriptions and cancelling them, which consequently influences the increasing role of the model for sustainable consumption. The results are shown in Figure 9.

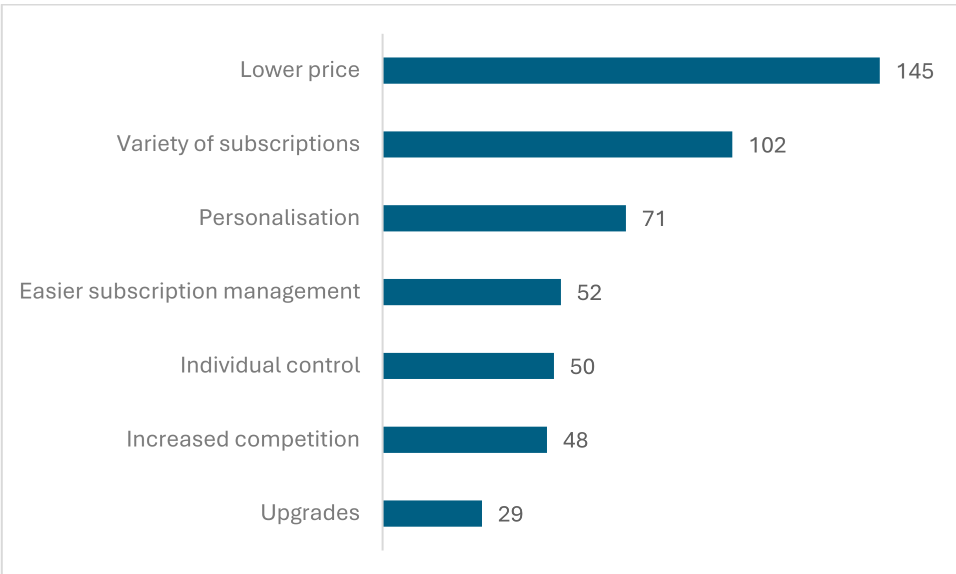

Figure 9. What would prompt you to increase your number of subscriptions in the coming years? Source: own elaboration based on survey results (N = 276).

Focusing on these areas can make a significant contribution to increasing the number of subscriptions and maintaining subscriber loyalty in the long run.

5. Discussion and Conclusions

The article aimed to present subscription economics as a model that can contribute to the promotion of sustainable consumption. Linked to the research objective was a research problem taking the form of the question: Does subscription economics promote sustainable consumption patterns? A specific question was developed: What are the perceived barriers and benefits for consumers in adopting a subscription model from a sustainable consumption perspective?

The results of this study reveal several important insights. First, based on the literature on sustainable business models, the authors have shown that subscription economics, meeting the conditions of a sustainable model, can play an important role in promoting sustainable consumption (in terms of economic, social, and environmental rationality). This new approach involves a transition from ownership to access, from one-time payments to recurring, cyclical payments, from anonymous transactions to meaningful relationships, and from limited one- or two-way communication to a fully engaged community centered around an organization. In this context, the model aligns with concepts such as access-based consumption, the sharing economy, the relationship economy, and the membership economy [27,28,31,46,47,49,52,55,57–59].

Secondly, the authors' own research has shown that Poles are very interested in the subscription model, with its greatest importance being in terms of economic rationality, as this the most important component of sustainable consumption. Poles primarily use intangible and luxury products in the subscription model. This confirms the importance of economic rationality on the grounds that the aforementioned types of subscriptions allow costs to be spread over smaller, regular payments, making products (including luxury products) more accessible to more people. In addition, shipping tangible products involves higher logistical costs than accessing intangible products. There are therefore no grounds for rejecting H1: Subscription economics has the greatest impact on sustainable consumption in terms of economic rationality.

Regarding the identified benefits and barriers for consumers in adopting the subscription model from the perspective of sustainable consumption, the research showed that for Polish consumers, the most important benefits are economic factors (mainly price) (important for representatives of all surveyed age groups). Over half of the respondents also viewed cost-sharing with others (56.5%) and fixed costs that allow for better budgeting (54.3%) as the most significant advantages of the subscription model. The study results indicated that social factors related to lifestyle changes are not the main drivers of participation in the subscription model among Poles, being cited by only 20% of respondents, though these factors were slightly more influential among those aged 45–59. Although, as Tzuo [48] notes, the rising popularity of the subscription economy has contributed to a new era termed the 'end of ownership', where customers prioritize access to services over possession of goods, the authors found that nearly one-third of respondents perceived non-ownership of goods or services as a disadvantage of the model, with this concern being least relevant for those aged 60 and above. These findings suggest that challenges limiting the development of the subscription economy in the Polish market, from a sustainable consumption perspective, are still linked to the deeply rooted belief that ownership signifies high social status—a notion not supported by Poll [37], whose research indicates that a person's status is no longer defined by their possessions. This finding is particularly relevant in the Polish market, where attachment to ownership remains culturally rooted. While international studies suggest that status is no longer defined by material possession [37], Polish consumers still tend to perceive ownership as an important social marker, which slows down the shift toward access-based consumption [60]. The results obtained by the author of the study also showed that the acceptance of the analyzed model relies on the user's valuation of ownership. Therefore, it is crucial for companies wishing to offer subscription models to understand the profiles of consumers who seek access rather than ownership [61,62]. This has to do with ecological factors (environmental rationality). Only 50% of respondents concurred that subscriptions result in excessive accumulation of goods or services.

Thirdly, the survey results regarding future engagement in the subscription economy indicated that nearly 50% of participants expect to expand their adoption of the model. Particularly interesting findings relate to the age of the respondents surveyed, as it was in the oldest age group that the greatest interest in increasing participation in the model in the future emerged (75%). This group, as the survey results showed, has a higher interest in social and environmental rationality, which gives hope for greater participation in the subscription model in terms of promoting sustainable consumption. The young generation is a key target group for setting the future path towards more responsible living [55,63–67]. Previous studies have shown that interest in sustainable consumption is growing among young consumers, who are characterised by a high awareness of growing environmental and social problems and a belief that they can improve the environment with their attitude and behaviour. In this vein, their desire to reduce consumption and adopt forms of consumption that are environmentally friendly appears [68]. As previous studies have shown, they are also more inclined towards collaborative consumption than older consumers [68–70], which is related to factors such as higher use of modern technological devices, lower income, and greater awareness of environmental issues [57,71,72]. Business models (including the subscription model) based on collaborative consumption can help attract young consumers to moderate consumption patterns. However, as the results of the authors' study have shown, statements of beliefs are not always consistent with actual behaviours indicative of sustainable consumption, for which the economic factor, which in many situations seems to take precedence, is responsible. Sustainability is therefore identified by the young generation as a secondary motivation to personal benefits such as financial security. This corroborates the results of previous studies, which have shown that young consumers (especially Generation Z) report climate change as one of the most important global issues, but tend not to take an active part in social issues, prefer passive activism and are less likely to act on sustainable consumption compared to those in the general population [56,60,66,73,74]. The authors' research showed that it is older people who show a higher interest in the subscription model in terms of social and environmental rationality. There are therefore grounds for rejecting H2: Subscription economics has the greatest impact on sustainable consumption in terms of social and environmental rationality for generations Y and Z. In addition, generational differences in Poland are striking: although Generation Z and Millennials report a high awareness of climate change and sustainability issues [74], their actual subscription choices remain driven primarily by price and convenience. Older consumers, by contrast, exhibit greater openness to evaluating subscription models in terms of social and environmental rationality, which may indicate a gradual but uneven cultural transition in the Polish context [60].

The analysed model may reveal new opportunities for sustainable business practices, which have important practical implications for subscription economy entities. They should focus on adapting their subscription offers to include features with high perceived value for consumers, taking into account the specific characteristics of the markets they serve. Despite the declared commitment to climate protection, Poles' willingness to undertake pro-ecological activities clearly decreases when it involves a burden on the household budget—then environmental criteria become less important [75]. Consumers in Poland expect savings and cost predictability above all else, which is why, in the Polish context, companies implementing subscription models must balance the idea of sustainability with economic realities, emphasising financial benefits, transparency, flexibility, and user convenience, and only then, ecological and social values. Creating differentiated pricing packages that allow for tailored subscriptions to individual budgets and ensuring simple cancellation policies is crucial. Businesses using a subscription model can implement flexible pricing approaches, including tiered plans or a mix of fixed membership fees and usage-based charges. Tiered pricing, in particular, allows subscription costs to be adjusted periodically, either increasing or decreasing according to the user's financial circumstances. The latter strategy allows for the inclusion of products and services in the subscription model that are used intensively in certain periods, while in others they are light or insignificant [28]. It is also effective to emphasize the utility value of a subscription rather than its form—benefits such as convenience, no maintenance costs, access to current products, and time savings. Introducing trial periods, micropayments, and additional benefits for regular customers can build trust and loyalty despite high price sensitivity. At the same time, it is crucial to educate consumers that subscriptions are not only an economical alternative to ownership but also a part of sustainable consumption, supporting more conscious and responsible use of resources. Polish consumers respond positively to messages that evoke a sense of making a wise and cost-effective choice. In this context, subscriptions can be viewed not as a form of relinquishing ownership but as a strategy for rational resource management, avoiding waste and overconsumption. This approach promotes a gradual change in attitudes, combining economic motivations with elements of sustainable development, which is a real opportunity for companies developing subscription models in Poland.

6. Research Limitations

Several important limitations to this study should be taken into account when interpreting the results. First, it should be emphasised that this was a pilot study. A small sample may not be representative of the entire population, which may lead to errors in inferring and generalising the results on a larger scale. With a small sample, the results may also be more susceptible to random events. Secondly, the data collection method, based mainly on online questionnaires, limited access to people who are digitally excluded or have low digital literacy. Thirdly, there are cultural and contextual limitations—the results reflect the behaviours and opinions of respondents in the Polish economic and social context, which may differ from other countries in Central and Eastern Europe or Western Europe in terms of the level of digitisation, consumption habits, or market regulations, and are also dependent on the timing of the survey. As the authors pointed out, the Central and Eastern European (CEE) region shows the strongest diversity in levels of digital adoption. Fourthly, the study is subject to analytical limitations resulting from the application of statistical methods that allow for the identification of relationships between variables but do not permit the establishment of causal links. As a consequence, the observed associations should not be interpreted as evidence of cause-and-effect relationships. The findings therefore need to be treated with caution, as they reflect correlations within the examined dataset rather than definitive explanatory mechanisms. Moreover, the results are context-specific, as they pertain to a particular population, time frame, and socio-economic environment. This limits the external validity of the study and constrains the extent to which the findings can be generalized to other countries, cultural settings, or social groups. Any broader interpretation or application of the results should therefore account for differences in institutional conditions, consumption patterns, and levels of market maturity related to the subscription economy. Nevertheless, some of the results of our own research are also reflected in the literature and provide a basis for expanding the scope of the research in the future.

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