

CONSUMER AWARENESS AND BEHAVIOURAL DYNAMICS IN THE CIRCULAR ECONOMY OF THE REPUBLIC OF MOLDOVA IN THE CONTEXT OF SUSTAINABLE TRANSITION

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Abstract.

The circular economy is a crucial model for transitioning towards sustainability, yet its success largely depends on consumer awareness and behavioural dynamics. This study examines consumer behavior in the Republic of Moldova regarding circular economy principles, focusing on awareness levels, motivations, and barriers to adopting circular practices. The research employs a quantitative methodology, utilizing a structured questionnaire administered to a representative sample, combined with an advanced analysis of psychological and behavioural factors. To introduce an innovative dimension, the study integrates psychometric models such as perceived behavioural control and proposes a circular economy readiness index to assess consumer preparedness for sustainable behaviour. Additionally, an A/B testing experiment is conducted to evaluate the effectiveness of different behavioural messages (environmental, economic, social) in influencing consumer attitudes. Complementary to this, behavioural clustering analysis is applied to segment Moldovan consumers based on their engagement in circular economy practices, thus identifying distinct consumer profiles. The findings reveal that, while there is an increasing openness towards the circular economy, significant discrepancies exist between declared intentions and actual behaviours. These gaps are influenced by factors such as insufficient infrastructure, the high costs of sustainable alternatives, and the limited impact of awareness campaigns. The study also highlights the importance of a tailored approach in promoting circular economy principles through messages adapted to the socio-cultural context of the Republic of Moldova. The conclusions provide valuable insights for developing more effective public policies, designing evidence-based awareness campaigns, and refining circular marketing strategies. This research contributes to the existing literature by combining advanced quantitative methods and

behavioural psychology to deepen the understanding of the transition towards a sustainable economic model.

Keywords: *circular economy, consumer behaviour, behavioural models, sustainable transition.*

JEL Classification: Q56, D12, Q01, D91, M31

1. INTRODUCTION

The circular economy (CE) is increasingly being conceptualised as a viable model for sustainable development, offering an alternative framework to the traditional linear "produce-use-dispose" paradigm. It promotes maintaining the value of products, materials and resources in the economy for as long as possible, concomitant with reducing waste and primary resource use (Geissdoerfer *et al.*, 2017; Niculescu, 2025; Toma & Corețchi, 2024). The transition to CE requires a systemic conversion, involving both supply-side actors – producers, designers, distributors – and demand-side actors – primarily consumers (Kirchherr *et al.*, 2017; European Environment Agency [EEA], 2022).

In the literature, there is growing evidence that the success of a circular model depends not only on technological innovations and institutional regulations, but also on consumers' ability to understand, accept and incorporate sustainable behaviours into their daily lives (Maitre-Ekern & Dalhammar, 2019). However, empirical research shows that public awareness of CE remains low and consumers are not sufficiently familiar with the concept, especially in Eastern European countries (Kirchherr *et al.*, 2017; Georgescu *et al.*, 2025; Pascal, 2025).

In the Republic of Moldova, circular economy remains an emerging concept, present more at the level of political discourse and pilot initiatives, rather than as a widespread practice in society. According to an analysis conducted by the National Institute for Economic Research (Popa *et al.*, 2022), the penetration of circular principles in consumption behaviour is low, affected by a lack of infrastructure, economic incentives and a weak culture of sustainability. Although Moldova has signed several international commitments on sustainable development and aligned with the European Green Pact, the concrete implementation of CE strategies is still at an early stage (Ministry of Environment RM, 2023).

In order to understand the psychological mechanisms underlying the pro-environmental behaviour of Moldovan consumers, this research adopts the Theory of Planned Behavior (TPB) model formulated by Ajzen (1991) as its theoretical foundation. According to TPB, the intention to adopt a behaviour is influenced by attitudes, perceived social norms and perceived behavioural control (PBC). In the CE context, this model provides a relevant framework to analyse to what extent individual, social and contextual factors determine consumers' willingness to adopt sustainable behaviours (Yuriev *et al.*, 2018).

The literature outlines five key dimensions influencing circular behaviour: economic factors (perceived costs and benefits), environmental information and education, infrastructure availability, social influences and personal values (EEA, 2022; European Commission, 2020a). In Moldova, recent survey evidence (Rusu, 2022) suggests that the main motivation for pro-environmental behaviours is economic, followed by concern for family health and influence of community norms. However, behaviours such as recycling, repairing objects or buying second-hand products are still perceived as difficult or uncomfortable, reflecting low behavioural control.

Against this background, the present research aims to systematically assess the level of behavioural and cognitive readiness of Moldovan consumers towards the circular economy, exploring attitudes, motivations, perceived barriers and the influence of different types of sustainable messages. The project integrates quantitative (standardised questionnaire applied to a representative sample) and qualitative (thematic analysis of open-ended responses) methods in order to outline a complete psychosocial profile of the circular consumer in the Republic of Moldova.

As there are so far no extensive studies on Moldovan consumers' perceptions of the circular economy, this research contributes to filling a significant epistemological gap. At the same time, its results can be used as a basis for tailored public policies (e.g. environmental education campaigns, financial incentive mechanisms) as well as social marketing strategies capable of stimulating the behavioural transformation necessary for the circular transition. Involving consumers in this process is essential for achieving sustainable development goals, and understanding the motivations and obstacles from a Moldovan contextual perspective provides useful benchmarks for institutional, economic and educational actors.

2. METHODOLOGY

The present study was based on the use of a complex questionnaire, structured to comprehensively capture the perceptions, motivations and behaviours of Moldovan consumers in relation to the transition to the circular economy. The research was conducted in the first half of 2025, in a context in which public interest in sustainability is visibly growing, but in which, according to recent data, the level of public engagement in circular actions remains fragmented and dependent on a number of contextual and cultural factors (Popa *et al.*, 2022).

The research instrument integrated both quantitative items, designed based on models validated in the international literature (Ajzen, 1991; Kirchherr *et al.*, 2017), and open-ended questions, aimed at capturing the motivational nuances and subjective perceptions of respondents. The targeted dimensions included awareness and familiarity with the circular economy, as measured by self-

perceptions of knowledge about concepts such as recycling, reuse or waste minimisation, as well as attitudes towards individual responsibility in adopting sustainable practices. At the same time, the research sought to highlight the barriers perceived by participants in applying pro-environmental behaviours – difficulties associated with poor infrastructure, perceived high costs or lack of information – but also possible solutions formulated from an individual perspective that can guide future public policy interventions.

Another key aspect was to explore the frequency of self-reported circular behaviours, such as recycling household waste, reusing goods, repairing objects, consuming environmentally friendly products or reducing the use of disposable items, all of which were correlated with perceptions of behavioural control and self-efficacy – relevant theoretical dimensions in the TPB model (Ajzen, 1991). The respondents' readiness and intention to actively support the transition to the circular economy, even when assuming changes in daily habits, was also investigated.

To test the responsiveness of consumers to different persuasive strategies, the questionnaire included an applied mini-experiment in which participants were successively exposed to three types of visual messages, each centred on a distinct motivational dimension: environmental benefit, personal economic advantage and positive community impact. The effectiveness of these messages was assessed by self-reporting the perceived level of motivation, complemented by brief qualitative reflections on the emotional and rational relevance of the received content – an increasingly used method of investigation in contemporary research on sustainable behaviour (Lisenco, 2024).

The questionnaire was distributed electronically via the Google Forms platform, ensuring complete confidentiality of responses. The sample was obtained through the convenience method, mainly formed by distributing the link in social and academic networks with the support of the researchers involved. In total, 352 valid questionnaires were collected, providing a solid basis for exploratory analysis. The socio-demographic profile of the respondents reveals a predominance of highly educated individuals: almost half of the participants hold doctoral or postdoctoral degrees, a significant proportion have bachelor or master degrees, and a smaller proportion have secondary school or vocational education. The gender distribution was relatively balanced, with a slight female predominance, and the age structure reflected a balanced coverage of the adult and mature segments of the population.

In terms of financial status, the data suggest a concentration of respondents in the middle and above-middle income categories, although about one-fifth of participants chose not to report this information. This demographic structure of the sample indicates a predominantly urban and educated orientation, characteristics associated in the literature with a higher likelihood of engaging in sustainable behaviours (EEA, 2022; Rusu, 2022). This methodological peculiarity

is important to keep in mind at the stage of data interpretation and generalisation of conclusions.

The analysis of the sample structure reveals a relatively balanced representation in terms of demographics, with a slight preponderance of people with higher education. This can be interpreted as a reflection of a higher interest in the topics of sustainability and civic engagement among the educated segment of the population – a result that is also in line with the findings of other research conducted at the national level (Gribincea, 2024). In terms of familiarisation with the circular economy, the data indicate that the majority of respondents are at a medium or high level of knowledge (score ≥ 3), suggesting a relative penetration of the concept in the Moldovan public discourse. However, about 15% of the sample report a pronounced lack of knowledge (scores of 1 or 2), reflecting a systemic problem of communication and information dissemination among certain social groups – a barrier also frequently signalled in the literature (Kirchherr *et al.*, 2017; Georgescu *et al.*, 2025).

For quantitative data processing, Likert items were numerically coded from 1 to 5, representing extremes of disagreement/agreement or behavioural frequency. For analytical purposes, part of these scores were recoded on a symmetric scale from -2 to +2, where the neutral value (3 - 'indifferent') was transformed to 0. This procedure allows a more intuitive interpretation of the averages: positive values indicate a tendency towards approval or adoption, while negative values signal resistance or rejection. The approach was inspired by the methodology used in studies of pro-environmental attitudes in transitional contexts (Yuriev *et al.*, 2018).

In parallel, open-ended qualitative responses were subjected to thematic content analysis using an inductive approach to identify emerging themes. This allowed the classification and quantification of proposals related to the promotion of circular behaviours (e.g. Coding was carried out by two independent researchers to ensure inter-coder validity and the categories identified were then statistically quantified (e.g. percentage of respondents mentioning each theme).

A central element of this research was the construction of a composite index of individual readiness for the circular economy. This index was defined as the sum of the scores on four core items: (1) intention to adopt circular behaviours, (2) active engagement in outreach, (3) behaviours already exhibited, and (4) personal perception of readiness for the circular transition. Each item was rated on a scale from 1 to 5, resulting in a total score between 4 and 20. The index thus constructed allows a synthetic assessment of respondents' behavioural and cognitive readiness for the changes needed in a circular economy – a method also used in international research on participatory sustainability (Oberholzer *et al.*, 2021).

The results were statistically analysed by means, distributions and proportions, and significant differences between demographic groups (gender, age, education level) were tested by comparisons of means (t-test, ANOVA) and

proportions (chi-square), depending on the nature of the variables. The interpretations obtained were correlated with the theoretical hypotheses formulated in the introductory framework (Ajzen, 1991) and with the results obtained in the literature, including studies applied in the Republic of Moldova (Popa *et al.*, 2022; Rusu, 2022).

This integrative approach – quantitative and qualitative – allows not only to measure circular behaviours, but also to understand the motivations and subjective bottlenecks of Moldovan consumers. Therefore, the proposed analysis is in line with international methodological standards and responds to the urgent need for empirical substantiation of public policies for ecological transition in a country still at the beginning of this process.

3. RESULTS

Assessing the level of public awareness and familiarity with the concepts and practices of the circular economy (CE) is an essential step in understanding societal readiness for the transition to sustainable patterns. The data obtained from the present study reveal that, in the case of the Republic of Moldova, there is a relatively solid perceptual base regarding the concept of CE, but with important variations according to age, educational level and professional experience.

To the question "To what extent have you heard of and understand the concept of circular economy?", a significant percentage of the respondents – approximately 66.5% – indicated an above average level of familiarity. The most frequent answer was "4" ("somewhat familiar"), selected by almost half of the participants (Fig. 2), suggesting that most of them have been exposed to the basic concepts of CE, albeit in an informal manner (Țurcan *et al.*, 2021). About 17% declared themselves "very familiar" (score 5), while at the opposite pole were about 8% who had not heard of the concept at all and another 8% who had only vaguely heard of it. These data indicate a partial and heterogeneous awareness, typical of a socio-economic context in which CE is still in its institutional emergence phase (Popa *et al.*, 2022).

The detailed analysis by age group shows that the 36-45 age group has the highest average level of familiarity (mean score ~4.36), followed by the 46-55 age group (~4.07). In contrast, younger respondents (18-35 years) report a significantly lower level of familiarity (mean ~3.0), which can be explained by a lower exposure to institutional contexts (jobs, vocational training) in which the CE has been promoted. The elderly (>56 years) also show an intermediate level of familiarity (mean ~3.39), possibly influenced by limited access to up-to-date information sources. Thus, it is hypothesised that middle age, correlated with active professional involvement, is a favourable factor for exposure to circular concepts (Ministry of Environment RM, 2024).

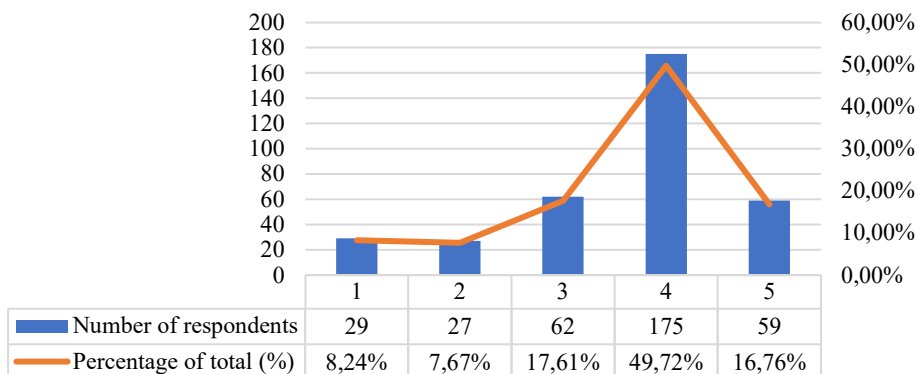


Figure 1. Level of familiarisation with circular economy practices and sources of information about the concept.

Source: Diagram by the authors, based on data collected in the study on consumer behaviour towards the circular economy (2025)

Education level was also found to be a significant predictor of familiarity. Respondents with higher education, especially those working in higher education or research, had significantly higher scores, confirming the link between educational capital and access to sustainability concepts (Georgescu *et al.*, 2025; Prisac & Pop, 2024). This correlation is in line with other European studies highlighting that high educational attainment is a strong determinant of pro-environmental behaviours (EEA, 2022).

To get a more nuanced picture of the degree of practical internalisation of the circular economy, a separate question on familiarity with concrete practices associated with CE was introduced: "How familiar are you with circular economy practices such as recycling, reusing or repairing products?". The distribution of responses reflected a general trend towards higher levels of familiarity, with 36% of respondents declaring themselves "very familiar" (score 5) and a further 40% selecting score 4. Only 5% of participants said they were not at all familiar with such practices.

These results could suggest a "practice without conceptualisation", in the sense that individuals are already resorting to some circular actions (recycling, reuse of packaging, repair), but without explicitly associating them with the circular economy paradigm. Thus, there is a dissonance between the theoretical recognition of the term and the practical application of the related principles, a phenomenon also observed in other studies conducted in Eastern Europe (Kirchherr *et al.*, 2017).

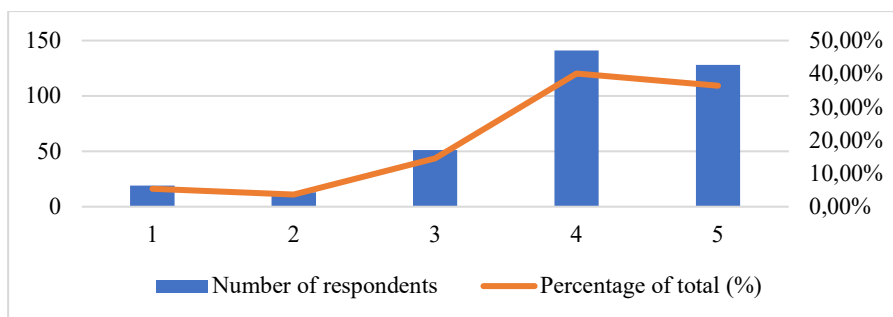


Figure 2. Level of familiarisation with circular economy practices such as recycling, reusing or repairing products

Source: Authors' diagram based on data collected in the study on consumer behaviour towards the circular economy (2025)

It is important to note that certain circular behaviours - such as reusing bags or selective collection – have become more common in the Moldovan public space, partly due to environmental education initiatives carried out in schools and universities, but also under the influence of European regulations transmitted through pre-accession programmes. However, deep internalisation of the CE concept as part of a responsible consumer culture is far from widespread.

In the conceptual architecture of the transition to the circular economy (CE), the level of familiarity of consumers with the principles and practices of the circular economy model becomes a key predictor of the internalisation of sustainable behaviours. In particular, in emerging contexts such as the Republic of Moldova, public understanding of the circular economy dimension not only reflects the maturity of the national environmental discourse, but is also an indirect indicator of the effectiveness of formal and informal education mechanisms, as well as the thematic penetrability in the sphere of social communication (EEA, 2022; Kirchherr *et al.*, 2017).

The data obtained following the application of the survey instrument indicate a significantly concentrated distribution in the upper range of the familiarity scale (Figure 2), with more than 60% of respondents reporting scores of 4 and 5, corresponding to a high degree of exposure or practical experience in recycling, reuse or repair. This finding can be interpreted as reflecting an emerging form of ecological capital, as conceptualised in Bourdieu's theoretical conceptualisations, in which familiarity with circular norms and practices is a distinguishing element among the urban educated population (Sârbu, 2022; Perciun *et al.*, 2022; Plotnic & Praporšćic, 2024).

From the perspective of information dissemination, the analysis of the sources through which respondents first came into contact with the notion of CE reveals a central role of the formal education system. Thus, about 19% of the participants identify university or pre-university education as the primary vector

of conceptual exposure. This empirical reality validates the hypothesis that universities can act as agents of systemic change, contributing to the ecological socialisation of new generations by including sustainability content in the curriculum (Putregai, 2024; Diaconu, 2025).

In second place is the generalist media (14%), indicating a still timid but noticeable presence of the circular theme in the public space. The low presence of the digital medium – in particular the Internet (3%) and social networks (less than 3%) – as primary sources of information can be explained by a different perception of the legitimacy of sources: respondents tend to favour institutionalised or socially validated sources over informal or perceived as ephemeral ones (Ganea, Trushkina, & Țirlea, 2022). Only 2.8% stated that they had no previous exposure to the concept of CE, signalling a relatively high degree of terminological penetration, although the complexity and depth of understanding remain to be investigated.

3.1. Value structures and behavioural motivations - from awareness to intention

Following the analysis, we explored the axiological dimension of consumers' relationship to the circular economy by asking them to express their degree of agreement with a series of evaluative statements. The responses highlight a normative climate deeply favourable to the adoption of pro-environmental behaviours, shaped around the principles of individual responsibility and the internalisation of the social utility of environmental actions (Figure 3).

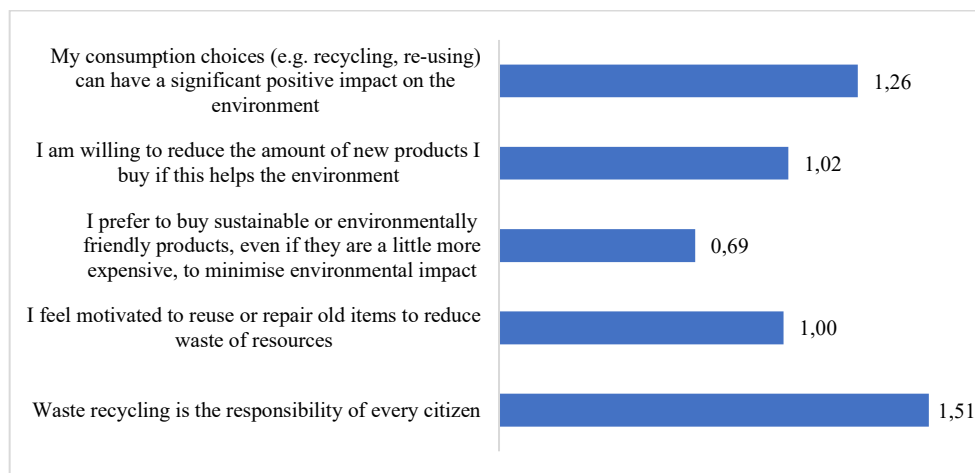


Figure 3. Respondents' level of agreement with statements on pro-environmental behaviour in the context of the circular economy

Source: Authors' chart based on data collected in the study on consumer behaviour towards the circular economy (2025)

The statement "Recycling is the responsibility of every citizen" obtained an average score of +1.51 (on a -2:+2 scale), configuring an almost hegemonic consensus on the moral imperative of individual waste management. This trend is congruent with the recent literature on the greening of social norms in post-communist Eastern Europe (Georgescu *et al.*, 2025).

Behaviours such as repairing or reusing products (+1.00), reducing consumption (+1.02) and positive perceptions of the impact of personal choices (+1.26) support the idea of a normative horizon favourable to behavioural change. In contrast, the willingness to pay a higher price for environmentally friendly products scored significantly lower (+0.69), suggesting that the economic factor still functions as an instrumental rationality filter (Diaconu, 2025).

The results suggest that, despite a still underdeveloped institutional infrastructure, there is a significant declarative willingness to engage in circular behaviours, to the extent that they are supported by favourable external conditions and persuasive strategies tailored to the socio-cultural context (Perciun *et al.*, 2022). This dynamic can form the basis for the development of integrated communication campaigns with the potential to transform latent predispositions into manifest and sustainable behaviours.

While the literature emphasises the importance of a positive normative orientation for a successful transition to the circular economy (EEA, 2022; Kirchherr *et al.*, 2017), the application of these principles in practice depends on a range of cognitive, structural and motivational factors. Our research results highlight an interesting convergence between favourable attitudes towards sustainable behaviours and perceived systemic difficulties in adopting them in everyday life, reflecting the intention-action divide – an issue extensively theorised in the planned behaviour model (Ajzen, 1991).

The aggregated attitudinal values (Figure 3) show that respondents declaratively adhere to pro-environmental norms, with a notable consensus on individual responsibility for recycling (+1.51), reuse and responsible consumption. This profile is comparable with the results of recent national surveys (Diaconu, 2025; Gribincea, 2024), which signal an emergence of a green civic ethos among the educated population, especially the young urban segment. However, the willingness to pay an additional price for green products (+0.69) suggests the persistence of economic constraints as a decision filter (Ganea *et al.*, 2022; Georgescu *et al.*, 2025).

In terms of perceived barriers (Figure 4), the data clearly highlights the lack of infrastructure as the main barrier, with an average score of 4.19/5. This finding aligns with the European literature which argues that lack of easy access to circular options undermines voluntary participation even by those willing to contribute (EEA, 2022; Perciun *et al.*, 2022). In Moldova, difficulties related to separate waste collection, lack of repair centres and absence of effective systems

to reward green behaviour constitute major systemic limitations (Ministry of Environment RM, 2023).

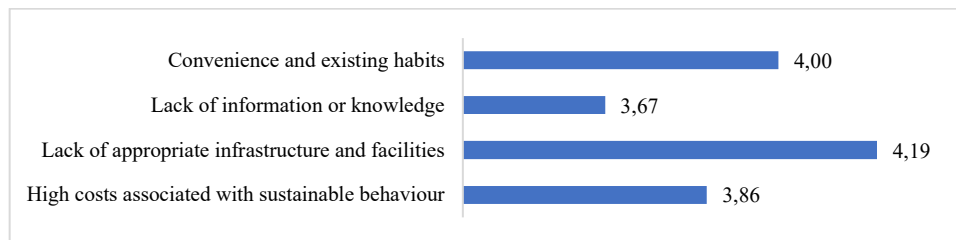


Figure 4. Attitudes, perceived barriers and suggested solutions on sustainable behaviour (aggregated results)

Source: Authors' diagram based on data collected in the study on consumer behaviour towards the circular economy (2025)

The second major barrier identified is resistance to behavioural change and the convenience of existing habits (4.00/5). This 'cognitive inertia', associated with everyday automatisms – such as throwing waste in one container or a preference for disposable products – is often more difficult to change than lack of knowledge per se (Thøgersen, 2013). Although the majority of respondents state that they 'know what they should do', putting it into practice is inhibited by the lack of concrete facilities and the absence of accessible alternative routines.

The high costs associated with green products (3.86/5) and lack of information (3.67/5) complete the picture of perceived barriers. Although the latter is perceived as a relatively less severe barrier, it remains significant in the context of the lack of systematic environmental education in schools or effective institutionalised communication campaigns (Putregai, 2024; Ganea *et al.*, 2022).

3.2. Motivational profiles – between value idealism and economic pragmatism

The thematic analysis of the responses to the open-ended questions confirms the existence of a motivational duality among respondents. The majority justify engaging in sustainable behaviours either by intrinsic motivations – such as the desire to live in a healthy and safe environment for themselves and their children – or by economic rationales – in particular the desire to reduce expenditure by reusing or avoiding waste. Mentions such as "care for the future", "money saved" or "I was brought up to care for the environment" outline two distinct psychosocial segments: an idealistic, value-based one and a pragmatic, instrumental one (Rusu, 2022).

The presence of family values, early education and an informally formed environmental consciousness suggest a positive internalisation of sustainability norms in certain social groups. At the same time, the almost complete absence of references to social conformity, external rewards or injunctive norms imposed by

the community indicate a relatively low level of social ecological pressure - which limits the potential for behavioural spread through mimicry (Ajzen, 1991; Steg & Vlek, 2009).

Based on these findings, it can be argued that the Moldovan public exhibits an encouraging degree of 'readiness' for the circular transition, but its manifestation is contingent on the existence of structural facilities, supportive policies and coherent value narratives in the public space. Strengthening the existing ecological capital requires coordinated systemic interventions in which education, infrastructure and economic incentives act synergistically.

Research results indicate that economic barriers are a major constraint to the adoption of circular behaviours among Moldovan consumers. The high costs associated with sustainable products and services – such as the higher prices of green goods, the expense of repair services or upfront investments in green technologies – are rated as a significant impediment, with an average score of 3.86 on a scale of 1 to 5. This result reflects converging findings in the international literature, which emphasise that factors such as price and affordability are key determinants in consumer decision-making (EEA, 2022; Schröder *et al.*, 2018).

This perception is also supported by research conducted in the Republic of Moldova, which indicates a pragmatic reluctance towards the costs associated with green products, especially among low-income population segments (Diaconu, 2025; Rusu, 2022). Thus, although many consumers express agreement in principle with sustainability, the practical implementation of circular choices is often limited by objective financial constraints. This discrepancy between declarative attitudes and actual behaviour is also documented in studies by Kirchherr *et al.* (2017), who identify the 'green intention-action gap' as one of the major challenges for circular policies.

Seemingly counterintuitively, the lack of information and knowledge is perceived as the least severe of the barriers analysed, yet scores 3.67. This result can be interpreted in terms of the profile of the sample, which is predominantly made up of highly educated people already familiar with the sustainability discourse. At the same time, some of the respondents emphasised that, although they do not experience informational difficulties, the general public might be more vulnerable to confusion about correct circular practices – especially in the absence of coherent environmental education campaigns (Ganea, Trushkina & Țirlea, 2022).

It is relevant to note that the perception of barriers is influenced more by age-related variables than by gender. While there were no significant differences between men and women, respondents in the over 56 age group rated infrastructural and routine-related barriers as more salient, which may be associated with poorer behavioural adaptability and reduced exposure to recent environmental initiatives (Sârbu, 2022; Perciun *et al.*, 2022).

3.3. Perceived solutions to overcome barriers – a participatory approach

Based on the answers to the final open-ended question, we extracted a set of solutions proposed by the participants to facilitate the transition towards circular behaviours. These have been summarised thematically in Figure 5, reflecting a coherent spectrum of interventions that can be subsumed under the three pillars of behavioural change: awareness, infrastructure and public policy.

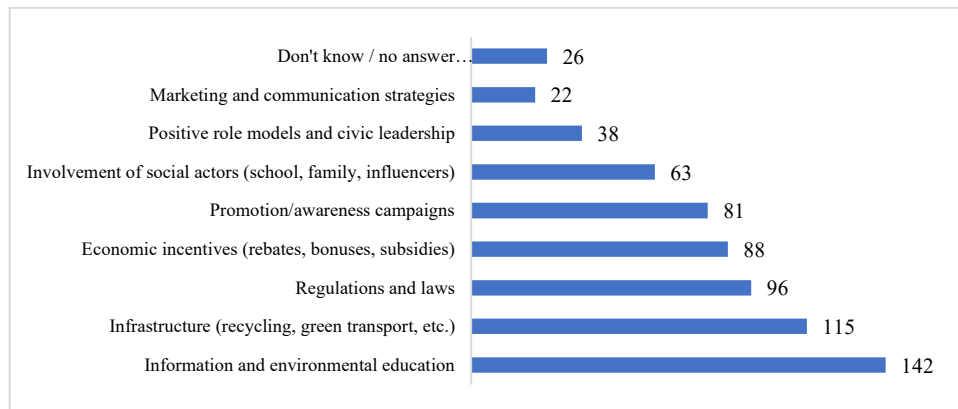


Figure 5. Perceived solutions to facilitate sustainable consumption behaviour in the Republic of Moldova

Source: Diagram by the authors, based on data collected in the study on consumer behaviour towards the circular economy (2025)

The most frequently mentioned solution (around 40% of respondents, equivalent to 142 mentions) is to step up environmental information and education programmes. Participants called for education initiatives in schools, universities, local communities and through the media, arguing that the process of behavioural change starts with an understanding of the individual's impact on the environment. This priority is in line with international and European literature emphasising the role of education in enhancing sustainable behaviour (OECD, 2024; EEA, 2022; UNEP, 2025), but also with recent Moldovan initiatives promoted through the National Environmental Strategy (Ministry of Environment, 2022).

The second major category of proposed solutions (115 mentions) concerns the development of infrastructure for selective collection, recycling and reuse. This includes requests for the extension of the network of recycling containers, the creation of local repair and reuse centres and the improvement of sanitation services. These aspects confirm that adequate infrastructure is perceived as a key enabler of circular choices, as argued by Batista *et al.* (2018), who highlight the interdependence between environmental infrastructure and consumer behaviour.

A third direction of intervention indicated by respondents relates to public regulation and policy. A total of 96 respondents called for coercive and

incentivising legislation, such as mandatory separate waste collection, bans on single-use plastic products, or economic policies such as "pay-what-you-throw". Another 88 respondents supported the implementation of economic incentives – tax rebates, subsidies for circular products or rewards for pro-environmental behaviour – to mitigate the financial barriers identified above. These recommendations converge with European good practices, which point to the effectiveness of a combination of legislative measures and financial instruments in accelerating the green transition (Saulītis *et al.*, 2024; Yin *et al.*, 2021).

A recurring element in participants' qualitative responses concerns the identification of concrete solutions to accelerate the transition towards sustainable consumption behaviour. Thus, 81 respondents made proposals for more attractive and effective public awareness campaigns, suggesting the involvement of persuasive tactics such as interactive community events (e.g. greening actions), innovative media spots, and appealing to opinion leaders – public figures, local influencers or ambassadors of green behaviour (Ganea, Trushkina, & Țirlea, 2022). Another 63 mentions underline the need to involve key social actors – schools, family, media - in the early formation of environmental norms, an idea in line with the international literature on early education as a vector for internalising sustainability values (Gribincea, 2024).

Promoting tangible positive examples, through narrative strategies and inspirational storytelling, was mentioned by 38 participants, while 22 highlighted the role of sustainable marketing in transforming circular products into 'aspirational' and 'trendy' alternatives – observations that resonate with global trends on the greening of the consumer imaginary (Prothero *et al.*, 2011; European Commission, 2020b).

Only around 7% of respondents did not offer any suggestions, indicating a high level of cognitive engagement with circular issues. Overall, these results confirm the existence of a systemic perception of change – with respondents recognising the interdependence between infrastructure, education, regulations and incentives, in an approach consistent with circular governance principles (Loorbach *et al.*, 2017). At the same time, there is a favourable attitude towards state and local government intervention to support the consumer, which provides a basis of legitimacy for proactive and participatory eco-social policies (Perciun *et al.*, 2022; Mies & Gold, 2021).

3.4. Reported circular consumption practices and perceptions of behavioural control

The applied dimension of the research included the assessment of the self-reported frequency of specific circular economy behaviours. Figure 4 (top) summarises data on the adoption of five circular practices in everyday life: reusing packaging, avoiding single-use products, repairing items, second-hand/environmentally friendly shopping and recycling waste.

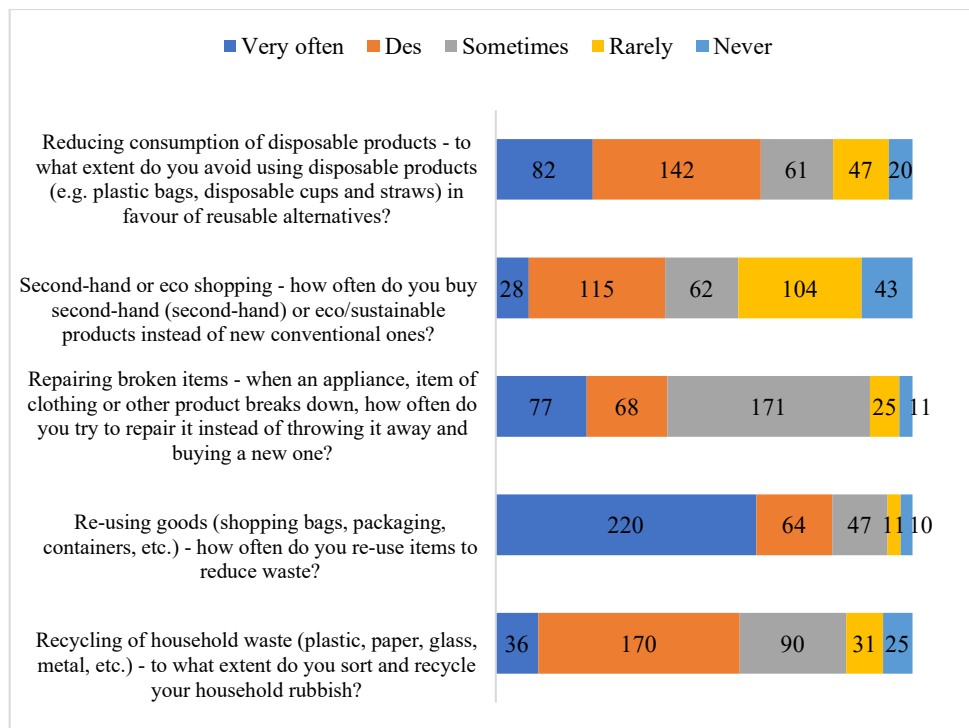


Figure 6. Frequency of adoption of circular economy behaviours and perception of behavioural control

Source: Authors' diagram based on data collected in the study on consumer behaviour towards the circular economy (2025)

Re-use of goods (bags, jars, packaging) is the most commonly practised behaviour, mentioned as "often" or "very often" by around 80.7% of respondents. This behaviour has strong socio-cultural roots, stemming from an ethos of thrift inherited from the Soviet period, but is increasingly also supported by current environmental beliefs (Diaconu, 2025). Gender differences are notable: women tend to show a higher frequency in reuse (66.5% stating that they practice this behaviour very often) compared to men (56.6%), reflecting a continuity in domestic roles in which women manage household resources (Popa *et al.*, 2022).

Avoidance of disposable products (such as disposable plastic or disposable cutlery) is common for 63.6% of respondents. A more constant involvement is observed from women, who are more sensitive to the environmental implications of household waste (Rusu, 2022). The male segment includes both an active core (37% say they always avoid disposables) and a significant passive extreme (~12% do not do so at all).

In terms of recycling household waste, approximately 58.5% of respondents report that they do it frequently, while ~16% rarely or never recycle. These results

reflect the infrastructural deficiencies reported in other studies (Ministry of Environment RM, 2023), especially in rural or peri-urban areas, where selective collection services are uneven or absent. Gender-differentiated analysis reveals a slight superiority of women in consistent recycling – a finding in line with the literature on gender and environmental behaviours (Iordachi, 2024; Șavga *et al.*, 2023).

Repairing broken items is a practice endorsed by about 90% of participants, with over 40% indicating that they do it frequently. This is evidence of do-it-yourself cultural capital that supports product longevity – an essential component of the circular economy (Bocken *et al.*, 2016). Men more often report technical repairs, and women in the area of textiles and light maintenance - reflecting both traditional labour distributions and informally acquired skills.

In contrast, the behaviour with the lowest adoption rate is second-hand or green shopping. Only 8% of respondents say they do it very often, and over 40% admit to doing it infrequently or not at all. In contrast to other behaviours, a trend reversal prevails here: men are more likely to buy second-hand products, which can be correlated with a more pragmatic approach to consumption or with experiences related to purchases of electronics, cars, etc. (Putregai, 2024).

The dimension of perceived behavioural control (Figure 4, bottom) indicates a high degree of self-efficacy: more than 70% of the participants believe that they have the knowledge and ability to act in a circular way. However, only 45% feel fully able to adapt their daily routines in a sustainable way, suggesting a gap between intention and implementation – an aspect well documented in the theory of planned behaviour (Ajzen, 1991; Yuriev *et al.*, 2020).

The empirical data obtained confirms the existence of a significant gap between declarative intention and actual behaviour, a phenomenon often documented in the sustainability literature (Ajzen, 1991; Bamberg & Möser, 2007). Although respondents show favourable attitudes towards circular economy values, their translation into concrete behaviours is filtered through structural factors such as access to recycling infrastructure, availability of green products on the market and local logistical support (Diaconu, 2025; Perciun *et al.*, 2022). However, the results indicate a relatively high degree of participation in circular behaviours – especially in terms of reuse, waste avoidance and adoption of responsible consumption practices – suggesting a functional emergence of circular culture in educated urban environments in the Republic of Moldova (Ganea *et al.*, 2022).

3.5. Self-efficacy and perceived behavioural control - premises for action

A key dimension investigated was the level of Perceived Behavioral Control (PBC), defined as an individual's perception of the ease or difficulty of adopting pro-environmental behaviours (Ajzen, 1991). Figure 4 (bottom) summarises the distribution of responses to the items on this dimension.

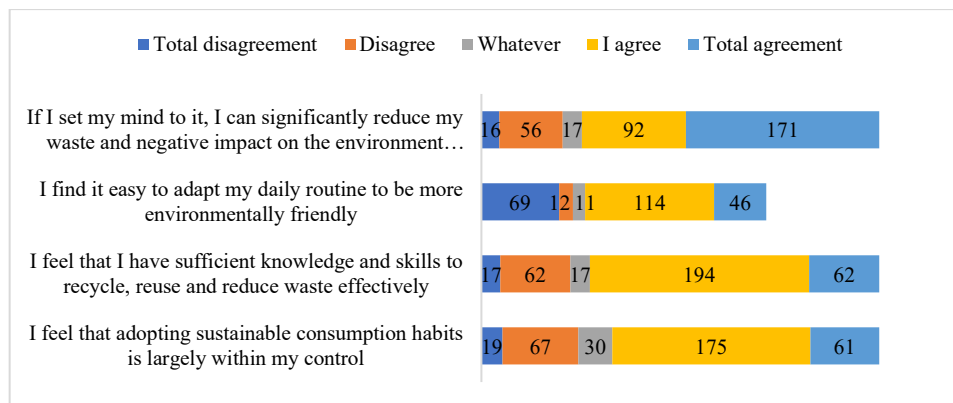


Figure 7. Perceived behavioural control over circular actions

Source: Diagram drawn by the authors, based on data collected in the study on consumer behaviour towards the circular economy (2025)

The majority of respondents (74.7%) agreed or strongly agreed with the statement: 'If I set my mind to it, I can significantly reduce my waste and negative environmental impact through my actions', reflecting a robust level of self-efficacy. This perception is a key catalyst for sustainable behaviour according to validated theoretical models (Yuriev *et al.*, 2020).

At the same time, 72.7% reported having sufficient knowledge and skills to recycle, reuse and reduce waste efficiently. This finding indicates the relative effectiveness of educational campaigns targeting the educated urban segment, as well as an increased autonomous capacity to internalise and apply environmentally friendly behaviours (Gribincea, 2024).

In terms of sense of control over the implementation of sustainable habits, 67% stated that these behaviours are "mostly under my control", while 24% expressed some degree of distrust in their own ability to act. These results highlight the persistence of perceived systemic barriers, such as insufficient infrastructure or time and resource limitations, also identified in other indigenous research (Sârbu, 2022).

The statement about the ease of integrating sustainable routines into daily life obtained a below expected level of agreement (45.5%), while 31.5% expressed a neutral position. This behavioural ambivalence reflects the adaptive difficulties frequently reported in studies of resistance to change in the sustainability sphere (Steg & Vlek, 2009).

3.6. Circular readiness index: integrated assessment of transition potential

To operationalise the concept of "behavioural readiness for the circular transition", a composite Circular Economy Readiness Index was developed, consisting of four components: declarative intention, current circular behaviours,

level of information and perceived self-efficacy. The average score obtained by the sample was 15.75 out of 20, equivalent to 78.7% of the maximum potential – a high level of readiness for transition, at least among the educated segment (Ganea *et al.*, 2022).

The distribution of this index highlights significant gender and age differences: women had a higher mean score (~16.99) than men (~13.93), and seniors (56+) outperformed the 46-55 group, possibly due to a post-career value conversion towards environmental concerns (Rusu, 2022). These results support the hypothesis that socio-demographic factors significantly influence the predisposition towards circular behaviours (Georgescu *et al.*, 2025).

3.7. Receptivity to sustainable messages – testing the impact of motivational framing

An innovative contribution of the research is the comparative evaluation of the effectiveness of pro-sustainable messages according to the motivational framing strategy: ecological, economic and community. The results support the hypothesis that community anchored messages generate the strongest attitudinal mobilisation: more than 82% of the respondents rated this type of message positively. The favourable emotional impact is also demonstrated by the content of the qualitative responses – e.g. "I feel motivated knowing that I can influence others", which reflects the activation of collective prosocial values (Cialdini *et al.*, 1990).

Economic-based messages generated a polarised response – attractive to one segment but perceived as insufficiently relevant or even cynical by others. This ambivalence has also been documented in international studies on motivational crowding-out in environmental communication (Bolderdijk *et al.*, 2013). In contrast, the environmental message, although value resonant, was assessed as less mobilising, possibly due to narrative saturation and high familiarity with this type of discourse (EEA, 2022).

Gender-differentiated analysis reveals an increased receptivity of women to all three messages, especially the economic one, contrary to traditional stereotypes. This may be associated with increased responsibility in household budget management and sensitivity to consumption efficiency (Diaconu, 2025).

The study confirms that among the urban educated public in the Republic of Moldova, the level of circular readiness is high and the perception of self-efficacy is at favourable levels. At the same time, the effectiveness of motivational framing varies significantly depending on the psychosocial profile of consumers, suggesting the need for differentiated communication strategies. In the long term, removing structural barriers - infrastructure, accessibility, time – will be essential to transform intention into systemic sustainable behaviour.

4. DISCUSSION

The empirical results of the study provide a comprehensive overview of the current state of circular behaviour in the Republic of Moldova, illustrating both the individual readiness for change and the systemic constraints that prevent sustainable behaviour from materialising. Overall, the educated and informed urban segment is distinguished by a high level of environmental awareness and a favourable attitude towards circular economy principles, in line with European trends that cognitive elites often act as catalysts for behavioural change (EEA, 2022; Georgescu *et al.*, 2025).

However, the comparative analysis of intention and actual behaviour highlights a significant discrepancy – well documented in the literature as the 'attitude-behaviour gap' (Kollmuss & Agyeman, 2002). Although respondents declare strong intentions in favour of circular practices (e.g. recycling, reuse, buying second-hand products), actual actions do not always reflect this motivation. In our case, less than 60% of participants say they recycle frequently, and less than 50% purchase circular products – figures that indicate latent structural and motivational barriers. These findings are supported by indigenous research that reveals a polarisation between declarative environmental consciousness and practical possibilities for implementation, especially in the post-Soviet urban context (Ganea *et al.*, 2022).

Among the causes of this gap are recurrent infrastructural inadequacies. The selective collection system in the Republic of Moldova is fragmented and geographically limited, and the logistic chains required for industrial reuse or recycling remain incipient (Ministry of Environment RM, 2023; Galanton, 2024). The lack of access to appropriate facilities (e.g. repair centres, second-hand markets) creates a 'behavioural opportunity gap' – a phenomenon also mentioned in EEA reports (2022), which highlight that mere individual cannot compensate for the absence of supporting infrastructure.

This mismatch between intention and opportunity is also explicable in terms of the model of planned behaviour (TPB), where perceived behavioural control (PBC) is crucial for converting intention into action (Ajzen, 1991). Even if respondents positively evaluate their ability to act sustainably, the absence of appropriate material conditions diminishes objective control, blocking the manifestation of behaviour.

A second block relates to perceptions of cost. Many consumers associate green or repairable products with higher prices, which, in a context of low purchasing power, becomes a notable impediment. Diaconu (2025) demonstrated, in a study applied to the Moldovan wine sector, that perceived economic viability is a key determinant of sustainable consumption decisions. Also, research by Perciun *et al.* (2023) shows that without interventions such as subsidies, VAT rebates or buy-back schemes, circular options will remain marginal in the preferences of Moldovan consumers.

Pricing policies – as a tool for economic nudging – are essential to tip the balance in favour of desired behaviours (OECD, 2024). In this respect, measures such as tax facilitation for repairs or penalising disposable products can create a framework conducive to structural change.

On the psycho-behavioural dimension, the study highlights the difficulty of changing established routines. Sustainable consumption often involves additional cognitive and logistical effort, which discourages transition without appropriate incentives. This rigidity is a phenomenon documented in numerous research studies (Thøgersen & Ölander, 2003) and reflects a resistance to changing implicit action patterns.

Interestingly, messages with a communitarian character had the greatest motivational impact, suggesting that normative influences play a catalytic role. According to TPB, subjective norms – perceptions of what others do or approve of – can amplify or inhibit environmental behaviour (Ajzen, 1991). In this case, campaigns that valorise sustainable behaviours as community norms ('what we do, together') could have a disproportionately positive impact.

An often overlooked dimension, but highlighted in this study, is the gender difference in predisposition towards circular behaviours. Women showed a higher involvement in recycling, plastic reduction and reuse of packaging, while men were more active in behaviours related to durable and technological goods (e.g. second-hand purchases). These results are congruent with international literature indicating an association between gender roles and sustainable consumption patterns (Hunter et al., 2004; Zelezny *et al.*, 2000). In the Moldovan context, where the responsibility for household resource management often falls on women, it is logical that women are more receptive to messages on waste reduction.

Therefore, communication campaigns need to be differentiated and gender-sensitive: for example, messages about financial savings may be more effective for women, while messages about community contribution may be more attractive to men - in line with empirically observed differences in motivation.

An important issue is the representativeness of the results. Although the current sample is predominantly urban and educated, which may induce a selection bias, the identification of a 'critical core' of sustainable consumers is of utmost relevance. This segment – made up of informed, active and engaged individuals – can play the role of early adopters in the diffusion of circular innovation (Rogers, 2003). Public policies can capitalise on this potential by directly involving these actors in local networks, pilot projects and community initiatives.

The convergence of the findings with the international literature validates the usefulness of the study in outlining policy directions for Moldova: (1) investments in circular infrastructure, (2) large-scale environmental education campaigns, (3) economic incentives for sustainable behaviours, and (4) social proof soft interventions (EEA, 2022; Kirchherr *et al.*, 2017).

The message that had the greatest impact – the one focused on community benefit – suggests a clear direction for public communication: framing circular behaviours as acts of collective responsibility. This approach is in line with research indicating the effectiveness of social and identity-framed messages in driving sustainable behaviour change (Schultz *et al.*, 2007).

5. LIMITATIONS OF THE STUDY

Interpretation of the results presented above must be undertaken with epistemological caution, given a number of limitations inherent in the research design. Firstly, the sample analysed reflects predominantly the perspective of an educated, urbanised and relatively young segment. This overlap between the educational capital and the urbanisation of the respondents' space of origin implies a possible overestimation of the real level of awareness and involvement in circular practices at the scale of the entire Moldovan population (Popa *et al.*, 2022; Gribincea, 2024). Thus, vulnerable groups – especially those in rural settings or those with limited access to infrastructure – may exhibit significantly lower levels of ecological self-efficacy and sustainable motivation (Ganea, Trushkina, & Țirlea, 2022).

Second, the use of the self-report method raises the issue of social desirability, a well-documented phenomenon in the psychosocial literature (Paulhus, 1991). Even if the instrument was administered anonymously and phrased in neutral language, it is plausible that some responses may reflect a form of virtue signalling, which may distort the accuracy of the measurement of actual behaviours (Yuriev *et al.*, 2020). For example, the frequency of recycling or reuse may be reported more optimistically than is actually the case.

Another critical issue concerns the hypothetical nature of the motivational experiment: the intention to act sustainably, expressed following exposure to a message, cannot be directly equated with actual behaviour (Ajzen, 1991). Thus, the results should be interpreted as indices of emotional and cognitive sensitivity to particular types of communicative stimuli, not as empirical validation of their effectiveness in real contexts. Field experiments measuring observable behaviours would be needed to validate the effectiveness of interventions (Saulītis *et al.*, 2024).

Also, observed demographic correlates – in particular differences by age group or gender – should be treated with analytical reserve, given the possible collinearity effect between socio-demographic variables (e.g. age and educational attainment).

6. APPLICATIVE IMPLICATIONS AND FUTURE RESEARCH DIRECTIONS

Despite these limitations, the results obtained provide a number of relevant contributions both from a public policy perspective and for sustainability practitioners and the scientific community. At the operational level, the data suggest that the educated urban population in the Republic of Moldova shows a high level of receptivity towards circular infrastructures and initiatives. Therefore, investments in selective collection systems, repair centres or reuse platforms would benefit from an increased take-up rate (Diaconu, 2025; European Commission, 2020b).

At the same time, the results can guide push-pull policies: on the one hand, reinforcing the educational dimension (information campaigns, integration of CE in curricula), and on the other hand, creating economic incentives (e.g. guarantee schemes for packaging, tax deductions for circular firms, green subsidies) aimed at reducing the perceived cost barrier (OECD, 2024).

Non-governmental actors – from environmental organisations to community movements – can capitalise on the insights generated by message testing. Thus, messages with community or collaborative content (e.g. "together we succeed", "be a positive role model") were found to be most effective in activating motivation (Figure 3). This result is consonant with other research conducted in the region (Dulgheru, 2023), which shows that appeals to solidarity and collective responsibility have a higher mobilising power than purely technical or environmental ones.

From a business perspective, the evidence suggests latent demand for circular products and services. Companies interested in sustainable innovation could respond effectively by expanding the supply of sustainable goods, repair services or collaborative consumption platforms (Llorente-González & Vence, 2020). Marketing communication should be tailored to the psychosocial profile of Moldovan consumers – balancing the community impact component with personal economic benefits, and avoiding overly prescriptive or moralising tone (Yin *et al.*, 2021).

On the scientific dimension, the study highlights the need to deepen the analysis of circular behaviours through longitudinal investigations, multivariate analyses and focused qualitative research. Exploring cultural values and social capital as predictors of sustainable engagement remains an important area of research – aspects little studied in the Eastern European space. Also, extending research to rural segments, as well as developing rigorous experimental protocols (e.g. A/B tests with actual behavioural measurement) would allow for a more robust validation of theoretical models such as TPB and CEBM (Bocken *et al.*, 2016).

7. CONCLUSIONS

The present study provides a substantial empirical contribution to the understanding of Moldovan consumers' behaviour in the transition to the circular economy. By combining quantitative and qualitative methods, the research paints a complex picture of awareness levels, attitudes and motivations, as well as perceived barriers and contextual limitations. In essence, the urban educated segment of the Moldovan educated population proves to be in favour of the circular transition – both in terms of cognitive level of understanding and declared readiness to act.

However, the gap between intentions and actual behaviour persists, explained by structural (infrastructure, prices), cultural (stigma associated with second-hand) and psychological (perception of control) factors. Thus, the transition to CE should not be thought of exclusively in technical or regulatory terms, but as a complex process of social and cultural transformation, in which consumers play a central role – but which requires systemic support to be fully realised.

In this context, the message spontaneously expressed by one of the participants – "Together we can make it happen" – takes on an emblematic value: only through co-responsibility between authorities, the private sector and citizens can genuine and sustainable circularity be achieved. Our study provides a solid starting point for this joint endeavour.

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