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Antecedents of Consumer Upcycling Behavior

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Abstract

Upcycling activities are important options in preserving the economic value of waste and reducing its harm to the environment. Both companies and consumers engage in upcycling, which encompasses a diverse range of applications. In this study, consumer upcycling behavior and its antecedents are evaluated in Türkiye. In order to assess the research hypotheses, a cross-sectional design is adopted. Online data is collected from 769 adult consumers through convenience sampling. Research findings show that Turkish consumers' interest in upcycling is low. Results of the study provide evidence that consumer creativity has a significant influence on upcycling behavior. In addition, consumer environmental concern plays a moderator role and strengthens the relationship between creativity and upcycling behavior. Both consumer curiosity and frugality are shown to heighten creativity.

Keywords: Upcycling, creativity, curiosity, frugality

Tüketicilerin İleri Dönüşüm Davranışlarının Öncülleri

Öz

İleri dönüşüm faaliyetleri atıkların ekonomik değerlerin korunmasında ve doğaya zararlarının azaltılmasında önemli bir seçenektir. İleri

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dönüşüm faaliyetleri çok çeşitli uygulamaları içermektedir ve hem işletmeler hem de tüketiciler tarafından gerçekleştirilmektedir. Bu çalışmada Türkiye'de tüketicilerin ileri dönüşüm davranışları ve öncülleri değerlendirilmektedir. Araştırma hipotezlerini test etmek amacıyla kesit analizi tasarımı benimsenmiştir. 769 yetişkin bireyden kolayda örnekleme ile çevrimiçi veri toplanmıştır. Araştırma bulguları Türk tüketicilerin ileri dönüşüm davranışına ilgilerinin zayıf olduğunu göstermektedir. Araştırma sonucunda, tüketicilerin yaratıcılıklarının ileri dönüşüm davranışı üzerinde önemli bir etkiye sahip olduğuna yönelik delil elde edilmiştir. Bunun yanında tüketicilerin çevresel kaygıları bu ilişkiyi güçlendirmekte ve değişkenler arasında moderatör rol oynamaktadır. Hem tüketicilerin meraklılığı hem de tutumluluğu yaratıcılık düzeylerini yükseltmektedir.

Anahtar kelimeler: İleri dönüşüm, yaratıcılık, meraklılık, tutumluluk

Introduction

Consumer societies and markets encourage individuals to consume more (Strikwerda, 2018; Baudrillard, 1998). In addition, the lifespan and durability of the products decreases (Brouillat, 2015). Even if products still function, consumers discontinue them because they are inferior in design compared with new ones. Products that become unusable as a result of consumption activity are either thrown away or used for other purposes. Upcycling activities, which creatively provide new uses to consumers by making changes to the used products, are important opportunities for the environment and societies due to reducing waste generation.

While upcycling behavior may be beneficial to the environment and society, research on this behavior from a marketing perspective has been neglected. However, it appears that studies examining consumers' upcycling behavior have begun to proliferate in recent years. Evers et al. (2018) have shown that US consumers' levels of materialism and frugality can be influential in finding new uses for used products. In their qualitative studies examining the use of products for different purposes (repurposing), Scott and Weaver (2018) reveal that individuals provide

ideas from social media. In addition, object properties (such as authenticity and having a history) might also be effective in product repurposing. Besides, individual motivations such as frugality, enjoyment, and stewardship might play a role in repurposing behaviors (Scott &Weaver, 2018). Bhatt et al. (2019) provide evidence that US consumers' creativity and environmental concern influence their interest in learning upcycling techniques. Sung et al. (2019a) suggest that subjective norms and intentions may have an impact on British consumers' upcycling behavior. Coppola et al. (2021) examine the comments and posts on an Italian website used for upcycling purposes through netnographic research. Consequently, their study reveals value (universalism vs. particularism) and motivation orientation (extrinsic vs. intrinsic) of consumers might be important in upcycling behavior. Creativity priming is shown to be influential in triggering upcycling behavior in Australia (Tarabashkina et al., 2022). Sung et al. (2023) suggest that for consumers in industrialized countries (UK, Canada, Australia, Germany, and the US), perceived behavioral control and intention play a major role in conducting upcycling activities. Similarly, intention and perceived behavioral control influence Chinese upcycling behavior (Ma et al., 2024).

According to the IMF (2024), Türkiye is among the top 20 economies in the world. In parallel with its significant economic size in the world, Türkiye is one of the top countries that produce the most waste. For example, Türkiye is among the leading OECD countries in total municipal waste (OECD, 2022). Despite its economic size and waste production volume, there is a lack of empirical studies on upcycling in Türkiye, especially at the consumer level.

The aim of this study is to examine the upcycling behavior of consumers in Türkiye and to reveal important variables that may have an impact on it. Drawing upon previous studies conducted in other countries, in this research creativity and frugality are investigated in the context of upcycling. In addition, the study evaluates consumer curiosity in upcycling activities that may foster creativity. Previous studies have shown that environmental values strengthens reuse behaviors (Roy, 2023; Arias

et al., 2024). More specifically, in this study, the role of environmental values on upcycling behavior is taken into consideration. Therefore, this study is expected to be one of the earliest consumer studies conducted on upcycling in Türkiye and contribute to the burgeoning literature concerning consumer upcycling.

Theoretical Framework

This section of the study discusses upcycling and elaborates consumer upcycling practice. Moreover, a brief literature review concerning the variables (curiosity, creativity, frugality, environmental values) that may influence upcycling behavior is provided. Ultimately, research hypotheses are established based on the existing literature.

Upcycling

Consumers purchase and use a wide variety of products. As a consequence of consumption activities, some used products can still perform their functions (such as a game console), while for other products (e.g., a can of soup), only the packaging remains. Consumers who no longer need the products after consumption make various decisions about disposition of the used products (Jacoby & Berning, 1997). Consumers who want to get rid of used products might sell or rent them to other users if the product conditions are suitable. On the other hand, products that are not in good condition for reuse might be thrown away by consumers. If a consumer intends to keep a used product, he or she may find a new use for the product. Upcycling is an option for consumers that gives new life to used products.

Various definitions have been made regarding the term upcycling in academic studies. The earliest use of the term upcycling was in an article (Kay, 1994, p.14) in Salvo magazine by Reiner Pilz. Pilz put forward his opinions regarding upcycling as “Recycling... I call it downcycling. They smash bricks; they smash everything. What we need is upcycling, where old products are given more value, not less”. Similarly, one of the most cited definition regarding upcycling stresses its difference from re-

cycling that "be upcycled rather than recycled – to retain their high quality in a closed-loop industrial cycle" (McDonough & Braungart, 2002, p. 110). Consumer upcycling is the practice of turning discarded items into products that are either as valuable or more valuable than the initial item(s) that make them up (Shi et al., 2022). While recycling processes often focus on the valuable materials in used products, upcycling looks for creative uses that fit the product's current form. By converting, turning, transforming, or repurposing waste or previously utilized material or product, or by remanufacturing, giving it another new life while lowering unnecessary resource spending, upcycling is characterized as the (re)creation of new products (artistic, scientific, or useful) with higher values and/or qualities and a more sustainable nature (Sung, 2015).

Although it is not as prominent as recycling, there is a growing trend in interest in upcycling practices. For example, according to Missoma (2024), 5.6 million posts appeared on Instagram in January 2024. Upcycling practice can be carried out at industry or individual levels. With regard to commercial applications, the clothing, textile, food, furniture, and polymer industries are some of the most ubiquitous examples of upcycling practices across the global economy. Upcycling in the clothing industry is done through redesign. Redesign may result in minor changes or modifications in clothing, or it may end up completely different products (Paras & Curteza, 2018). Textile and footwear wastes could be upcycled for cement production (Yang et al., 2023; He et al., 2024). Similarly, food waste is collected and upcycled to manufacture various products such as livestock feed, organic fertilizers and biodiesel (Bangar et al., 2024). Upcycled wood dust could be utilized for plywood production (Wronka & Kowaluk, 2023). In addition, used furniture could be upcycled in order to manufacture wood–polymer composite filaments for 3D printers (Pringle et al., 2018). Chemical upcycling methods are applied to convert plastic waste into valuable industry supplies such as liquid hydrocarbons and monomers (Li et al., 2023). ILKFER GROUP, operating in the maritime industry in Türkiye, transforms ship parts obtained during ship breaking operations into decorative items. As a result

of such industrial upcycling, products such as mirrors, chandeliers, and lamps are manufactured (Picture 1).

Picture 1: Examples of Industrial Upcycling in Ship Breaking Industry

In the field of fine arts, artists using parts obtained from old objects create new artworks. For instance, sculptures can be made from used objects by artists (Öztürk & Demirci, 2022). In fashion design education, upcycling is applied by students to develop attitudes towards the circular economy (Atalay Onur, 2020). There are a wide variety of upcycling applications at the household level, depending on the creativity and ability of individuals. Sung et al. (2018) provide several upcycling examples in the UK. For instance, repurposed garments and various materials might be used to make soft furnishings like pillows, dolls, and rugs. Another form of upcycling in the household is jewelry, which is frequently produced in a steampunk aesthetic out of discarded plastic, metal, and fabric components. Moreover, used wheels, books, records, gadgets, and a variety of other items have been utilized to make clocks in the UK. In addition, cutlery organizers constructed from metal tins and glass jars, vinyl record bowls, and glass bottle cups and plates are examples of upcycled kitchenware. Reclaimed wood, including unused pallets, has been employed to build sheds, planters, and garden furniture. Furniture redec-

oration and clothing redesign activities are also considered in the field of upcycling (Sung et al., 2019b). In Sri Lanka, pencil cases, notebooks and file folders are made from waste of plastics, banana fibre and textile (Jayasinghe et al., 2021).

Examples of consumer upcycling can also be seen in Türkiye (Dal & Gökçe, 2019). Toilet paper rolls, metal cans, and plastic detergent boxes have been upcycled into penholders. Besides, materials such as glass jars and plastic spoons have been used to make candleholders. Various decorative objects and vases are produced from upcycled waste. Worn-out jeans are used to make bags, wallets, and notebooks. The threads on old clothes are removed and patchworked to knit clothes such as coats (Yıldırım, 2017). In Türkiye, upcycling is also used in the creation of works of art (İlden & Sarıca, 2023).

Akin to other product recovery options (such as refurbishing or remanufacturing), upcycling is also beneficial to the environment and economy. Upcycling of used products reduces waste and environmental pollution. For instance, since plastic waste is difficult to degrade, when thrown into the environment, it turns into microplastic and begins to accumulate in organisms around the food chain. Upcycling plastic waste is beneficial to the environment and organisms by reducing the formation of microplastics in nature (Zhao et al., 2022). Upcycling contributes to economic development by creating new business and job opportunities in the economy. For example, in the UK's economy, there are significant business practices related to textile and wood upcycling (Singh et al., 2019). In addition, for oil-importing countries, upcycling plastic waste can positively affect the budget deficit of the economy due to reducing the need for imported raw materials. As well, at the household level, upcycling activities enable consumers to save money, thus contributing to the domestic economy.

Consumer Creativity

The concept of creativity has attracted the attention of psychologists for almost a century. Since the 1950s, empirical studies regarding

creativity in the field of psychology have begun to emerge (Hirschman, 1980).When assessing creativity, researchers usually ask participants to come up with different uses for objects (familiar or novel), identify patterns between concepts, name concepts that have a certain attribute, or solve puzzles and problems that can be imaginary or real (Hirschman, 1980). With regard to the realm of marketing, creativity has been attracted the scholars attention since the 1960s. Advertising, new product development, and new idea generation are the most frequent topics on creativity studies in marketing literature (Miceli & Raimondo, 2020).

According to the author of this study, consumer creativity refers to the diverse and creative ways that consumers engage with products and services. This could mean modifying, adjusting, or converting present goods or services to better suit the needs or preferences of customers. Consumer creativity can be characterized as an individual's capacity for problem-solving that can be used to address issues associated with consumption (Hirschman, 1980). On the other hand, Burroughs and Mick (2004, p. 403) define creative consumption as "a departure from conventional consumption practice in a novel and functional way". In light of the fact that customers are now a vital resource for companies (Vargo & Lusch, 2004), consumer creativity has evolved to include co-creating goods with companies (Miceli & Raimondo, 2020) in addition to manifesting itself in the consumer field as problem-solving skills.

In the past, consumers had to be more creative in their consumption activities due to scarcity in products and resources. In addition, since most of the population lived in rural areas, they had difficulty accessing goods and services. As a result, this situation created a consumption culture based on being frugal and making do with what is available on hand. In terms of creativity, modern customers, however, enjoy a number of advantages over those of the past. Content shared on social media platforms such as YouTube, Instagram, and Facebook contributes positively to the creativity of consumers. Consumers obtain information about the equipment, materials, and processes required for creativity projects from such platforms. In addition, nowadays, consumers can conveniently pur-

chase all kinds of products required for their projects thanks to online shopping sites and home delivery services.

Studies have shown that consumers' engagement in creative consumption activities is affected by various factors. For instance, an increase in time constraints, involvement with a consumption problem, ability of metaphoric thinking, and locus of control might give rise to consumer creativity (Burroughs & Mick, 2004). Moreover, it is shown that the more consumers experience foreign cultures, the more creative they are (Huang et al., 2023). However, such relationship is shown to be moderated by culture type (loose or tight). Personal factors such as level of intelligence, analogical reasoning, knowledge, motivation, and positive mood might also play an important role in consumer creativity (Burroughs et al., 2018).

Consumer curiosity

One essential quality that propels both human progress and personal development is curiosity. Throughout history, many scientific discoveries have been made thanks to humanity's curiosity. It has been shown that curiosity trait and emotional intelligence are related (Leonard & Harvey, 2007). Moreover, creativity correlates positively with curiosity (Gross et al., 2020; Schutte & Malouff, 2020). As a result, curiosity, along with creativity, can be effective in helping consumers develop do-it-yourself projects such as making decorations and upcycling.

Despite the importance of curiosity for humanity, there are differences in its conceptualization and definitions in the literature (Grossnickle, 2016; Wagstaff et al., 2021). Studies vary depending on whether curiosity is a general habit or a phenomenon that emerges from a momentary situation. Trait perspective sees curiosity as a permanent dispositional propensity for people to frequently respond with curiosity to environmental cues or actively seek out opportunities to be curious, so experiencing a yearning for new experiences or information (Litman, & Silvia, 2006). On the other hand, curiosity as a state perspective proposes that its emergence is in reaction to environmental characteristics (Loewenstein, 1994).

Studies on curiosity also differ in terms of the object of curiosity. According to Grossnickle (2016), in terms of objects, curiosity studies can be classified in four categories (physical, perceptual, social, and epistemic). Physical curiosity focuses on the exploration and manipulation of oneself and surroundings (Dewey 1910). Whereas, with respect to perceptual curiosity, exploration through sensory stimulation (for instance listening new music, travelling new places) in order to get new information is essential (Collins et al., 2004). When it comes to social curiosity, the main focus is on using language to engage in explorations through inquiries and appeals to other people for information or a curiosity about them (Renner, 2006). Epistemic curiosity, however, requires a need or desire for information, knowledge, or the investigation of academic settings (Kang et al., 2009). Epistemic curiosity studies can be further classified in terms of feeling (interest or deprivation) (Wagstaff et al., 2021).

Curiosity has also been investigated under certain domains (Wagstaff et al., 2021). For instance, in the field of management Jeraj and Marič (2013) examine the relationship between curiosity and self-efficacy about entrepreneurship. An optimistic emotional and motivational system focused on exploring the entrepreneurial framework, learning entrepreneurship-related tasks, and incorporating new experiences to enhance business is referred to as entrepreneurial curiosity (Jeraj & Marič, 2013). Kashdan et al. (2020) develop the M-Workplace Curiosity Scale in order to assess employee curiosity. The M-Workplace Curiosity Scale evaluates employee curiosity in four dimensions (deprivation sensitivity, openness to people's ideas, stress tolerance, and joyful exploration).

Marketing professionals have intended to raise consumer curiosity regarding their offerings in order to increase consumer engagement. Because curiosity plays an important role in forming consumer behavior, retailers use mystery appeals to pique curiosity and lure customers into their shops (Hill et al., 2016). Curiosity may positively influence attitudes and intentions of consumers (Thomas & Vinuales, 2017). According to Wang and Huang (2018), consumers who are curious are more likely to choose indulgent options in a corresponding but unrelated sector. Suc-

cess of new product trials are affected by the level of consumer curiosity as well (Lavoie & Main, 2022). Advertising efforts are also positively influenced by the level of consumer curiosity (Yang et al., 2020).

Environmental Concern

Nature offers humanity a vast array of resources to live and nurture. Although the growth rate is decreasing, the world population is expected to continue its growth by 2050 (Worldometer, 2024). As a result of the increase in human population and consumption, several negative outcomes that threaten the environment and humanity have occurred. That is, climate change (Satterthwaite, 2009), deforestation (DeFries et al., 2010), biodiversity loss (Maurer, 1996), resource depletion (Repetto and Holmes, 1983), and pollution (Cramer, 2002) are some of the negative consequences of consumption activities. It can be said that there is environmental concern among consumers who are anxious about the harm of these results to the environment.

Concern for the environment has been defined as an assessment of the facts, one's own actions, or the actions of others that have an impact on the environment (Fransson & Gärling, 1999). Environmental concern is influenced by demographics, personality traits, and values of individuals (Lou & Li, 2021). Consequences of environmental concern on human behavior vary across studies. It is seen that environmental concern in individuals generally affects environmental behaviors through attitudes, knowledge, and norms rather than directly affecting them (Fransson & Gärling, 1999). For instance attitude towards recycling is shown to mediate the link between environmental concern and recycling behavior (Jekria & Daud, 2016). Best and Mayerl (2013) investigate the consequences of environmental concern with the New Environmental Paradigm in recycling behavior. Findings of their study show that environmental concern influences general and specific environmental attitudes of the participants. On the other hand, Chao et al. (2023) propose that concern about the environmental issues might directly influence recycling behavior.

Frugality

Frugality, which is based on the careful use of resources by individuals, contributes positively to the environment by reducing consumption as well as increasing individuals' savings. One of the most cited definitions of frugality in the domain of marketing is "a unidimensional consumer lifestyle trait characterized by the degree to which consumers are both restrained in acquiring and resourceful in using economic goods and services to achieve longer-term goals" (Lastovicka et al., 1999, p. 88). The long-term perspective in the definition emphasizes that small savings will turn into significant savings in the long run.

A variety of economic, religious, and cultural factors play a role in individuals having a frugal trait (Goldsmith et al., 2014). Frugality contributes positively to the environment and might encourage sustainable behavior (Tapia-Fonllem et al., 2013). For example recycling intention of Chinese and American consumers is found to be positively influenced by their frugality (Wang et al., 2023; Song et al., 2023). In addition, food-waste-aversion is shown to be related with frugality (Raghunathan and Chandrasekaran, 2021; Kutlu, 2022). Consumer attitude towards frugality decrease their electric and gas use intention (Fujii, 2006).

Hypothesis Development and Research Model

Curiosity refers to the search of new knowledge and experiences. Creativity includes changing existing knowledge, ideas, or items into something unique and interesting. As a result, intuitively there is a link between curiosity and creativity (Gross et al., 2020). Moreover empirical studies have shown association between creativity and curiosity. For instance, the study of Karwowski (2012) indicates a high correlation between self-creativity and curiosity. In addition, both curiosity and encouragement for creativity are found to positively influence creative self-efficacy (Puente-Díaz &Cavazos-Arroyo, 2017). In terms of re-use, Price and Ridgway (1983) provide evidence that consumer curiosity and consumer re-use creativity are moderately associated. According to the novelty-seeking model, curiosity fosters creativity by facilitating atten-

tion, categorization, and consolidation of new knowledge (Ivancovsky et al., 2024). Consumers' interest in home repairs and their curiosity about the working principles of objects might support their creativity and finding new ways to make use of dysfunctional products. As a consequence, drawing on the literature, it is hypothesized that the increase in consumer curiosity gives rise to consumer creativity.

H1: Consumer curiosity positively influences consumer creativity.

Frugality requires making the most of the products at hand and making do with what you have. Frugal consumers are likely to find new ways of maximizing their resources, such as lengthening product life, or finding new ways to use dysfunctional products. In essence, frugality can motivate people to develop new and more effective ways to attain their goals, cultivating a creative attitude. When faced with scarcity, customers use their resources creatively. Although such scarcity creates a constraint mindset for a specific context, it may be a generalized trait (Mehta & Zhu, 2016). In terms of upcycling behavior, trait of frugality would best fit such a general concept. Indeed, there is a positive link between frugality and creativity. For instance, Appuhami et al. (2024) show that the more frugal employees are in spending company money, the more creative they are. In the context of re-use, consumer frugality influences positively creative end-use behaviors (Evers et al., 2018). Thus, it is hypothesized that consumer frugality heightens creativity.

H2: Consumer frugality positively influences consumer creativity.

On the other hand, frugality has been shown to be influential in reuse related behaviors. For instance, Wang et al. (2023) provide evidence that frugality increases recycling intention. Similarly, Song et al. (2023) show frugality have a positive influence on consumer recycling behavior. In addition precycling behavior (such as reusing packaging items and preferring unpacked goods) is shown to be influenced by frugality (Klug & Niemand, 2021). Therefore, consumer frugality may play an important role in upcycling behavior.

H3: Consumer frugality positively influences consumer upcycling behavior.

Upcycling aims to create new products through creativity from old and obsolete products and to benefit from products that exceed their material value. Consumers take the opportunity to express their creativity skills in upcycling activities (Donato et al., 2024; Coppola et al., 2021). Developing innovative ideas and experiencing new processes through their implementation supports individuals' creativity and enables them to adopt upcycling activities more widely (Shi et al., 2022). In other words, while upcycling activities improve the creativity of individuals by providing them with new experiences, a certain amount of creativity is required to carry out such activities. Therefore, creativity will play an important role in the conduct of upcycling by the consumer. To illustrate, in the context of clothing upcycling, consumer interest in upcycling techniques is positively influenced by creativity (Bhatt et al., 2019). Similarly, the study of Roster (2024) indicates a positive correlation between customer creativity and learning how to upcycle clothing. As a result, consumer creativity is anticipated to influence upcycling behavior.

H4: Consumer creativity positively influences consumer upcycling behavior.

Upcycling by consumers has a positive contribution to the environment. Bhatt et al. (2019) show that consumer concern for environmental issues positively influences interest in upcycling. An increase in the level of environmental concern will positively affect the impact of individuals' creativity on upcycling behaviors. In other words, when individuals' creativity in reuse and environmental concerns increase, more upcycled products will emerge.

H5: Consumer environmental concern moderates the link between creativity and upcycling behavior.

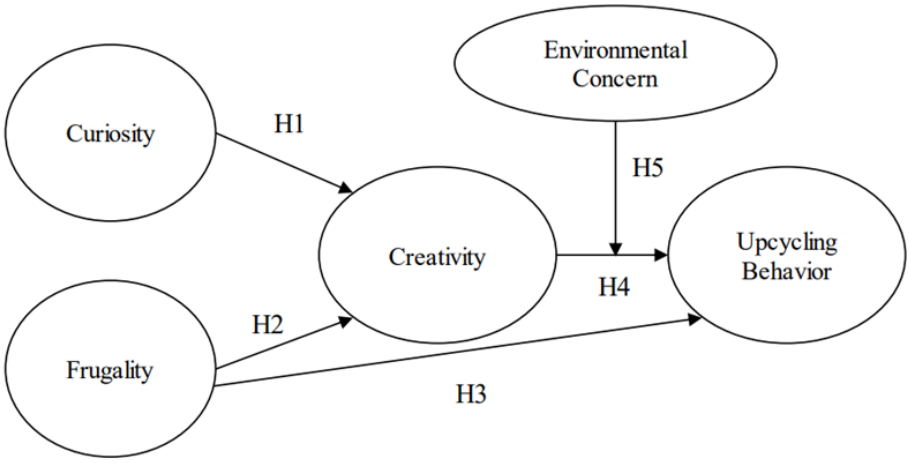

Figure 1. Research Model

In Figure 1, research hypotheses and research model are illustrated.

Methodology

The research aims to investigate the variables (curiosity, frugality, creativity, environmental concern) that may be important in upcycling behavior. To achieve this aim, the proposed hypotheses are tested. As a result, cross-sectional design, one of the quantitative research designs, is adopted in the study.

Sampling

Within the scope of the study, the upcycling behaviors of adult individuals over the age of 18 and the influential variables are examined. At the beginning of the survey, a consent text was given, stating that only participants over the age of 18 could participate in the study. Besides, participants were warned that they would be declaring consent if they completed the survey or else would be free to leave whenever they wanted. Due to a lack of time and financial resources, convenience sampling is used in the research. Data was collected from 769 participants through an online survey between May and June 2023 in Türkiye. Using

the Google Forms tool, a link for the survey was created and shared on social media (WhatsApp, Facebook, and Instagram). Each question in the survey was required to be filled. Therefore, no missing data occurred. The demographic characteristics of the participants are given in Table 1. The income levels of the participants are measured by folds of the minimum (8600 TRY) wage applied in Türkiye at the time the study was conducted.

Table 1: Demographic Characteristics of the Sample

Variable	Distribution
Gender	Male (53.71%) Female (46.29%)
Age	Mean (33.21) Std. Dev. (9.79)
Income	8600 TRY and below (26.53%)
	8601 TRY-17200 TRY (40.96%)
	17201 TRY-25800 TRY (23.28%)
	25801 TRY-34400 TRY (5.07%)
	34401 TRY and above (4.16%)
Education	Primary or secondary school (4.29%)
	High school (23.15%)
	College (18.60%)
	Undergraduate (44.60%)
	Postgraduate (9.36%)

Measures of the Study

Creativity and curiosity measures of the study are barrowed from the use innovativeness scale developed by Price and Ridgway (1983). In addition, frugality scale is adopted from Lastovicka et al. (1999). Besides, items regarding environmental concern are barrowed from Bhatt et al. (2019). No scale was found to measure upcycling behavior during the time period in which the research was designed. Therefore, upcycling behavior items are generated by taking into account the practices of consumers in Türkiye. Although these applications are very diverse in Türkiye, the most commonly mentioned in the literature (Dal & Gökçe, 2019; Yıldırım, 2017; İlden & Sarıca, 2023) and the practices simplest

to conduct are preferred. In the analysis part of the study, the upcycling behavior scale is evaluated in terms of validity and reliability. At the end of the upcycling scale, participants are asked whether they have used different practices that are not specified in the questions with an open-ended question. All scales in the study are applied as a five-point Likert scale (1 (strongly disagree), 3 (neither agree nor disagree), 5 (strongly agree)).

Since the research was conducted on Turkish consumers, the survey form was prepared in Turkish. Thus, scale items borrowed from publications in English were carefully examined by experienced marketing academics and translated into Turkish. Items used in the questionnaire and their sources are given in the Appendix.

Findings

Item Scores and Exploratory Factor Analysis

In order to conduct related analyses, SPSS, AMOS and PROCESS are used in the study. In order to evaluate common method bias issues, initially the Harman's single factor test is applied. Consequently, a single factor only accounts for 36.36% of the variance. Since the explained variance is below the 50% threshold (Padsakoff et al., 2003), there is no evidence for common variance issue in terms of the Harman's single factor test approach. Similarly, via confirmatory factor analysis, a measurement model with all indicators in one factor is run. One factor model is shown to fit weakly with the data (χ^2=8152.74; d.f.=464; p<0.001; χ^2/d.f.=17.57; RMSEA=0.15; SRMR=0.12; CFI=0.55; TLI=0.52; NFI=0.53).

To assess validity and reliability of the measures, initially exploratory factor analysis is carried out, and Cronbach's alpha scores are calculated for each scale (Table 2). In terms of reliability, all scales are shown to be adequately reliable, where Cronbach's alpha score ranges between 0.85 and 0.95. Principal Component Analysis is the adopted extraction method for exploratory factor analysis. Additionally, the rotation method for the factor analysis is Varimax with Kaiser Normalization. Results show that five-factor structure accounts for 68.73% of variance with an

Eigen value of 1.01. As a result of the factor analysis, each item loads on related factors. Factor loadings of the items ranges from 0.58 to 0.84. Consequently, factor loadings are above the threshold value of 0.5 recommended by Hair et al. (2014). By and large, in terms of construct validity measures of the study are seen to be valid.

Table 2: Exploratory Factor Analysis Results and Scale Reliabilities

Scale	Item	Mean	Std. Dev.	Factor loading	Variance explained	Cronbach's alpha
Curiosity	Cu1	3.63	1.32	0.69	10.23%	0.85
	Cu2	3.57	1.31	0.74		
	Cu3	3.43	1.41	0.80		
	Cu4	3.19	1.44	0.76		
Creativity	Cr1	3.07	1.37	0.66	20.09%	0.93
	Cr2	3.45	1.29	0.70		
	Cr3	3.42	1.39	0.75		
	Cr4	3.33	1.37	0.73		
	Cr5	3.15	1.40	0.68		
	Cr6	3.29	1.23	0.73		
	Cr7	3.60	1.15	0.58		
	Cr8	3.93	1.22	0.58		
	Cr9	3.35	1.24	0.63		
	Cr10	3.35	1.25	0.69		
	Cr11	3.45	1.26	0.71		
Frugality	F1	4.06	1.17	0.79	17.64%	0.91
	F2	3.98	1.16	0.77		
	F3	4.17	1.13	0.77		
	F4	4.05	1.13	0.76		
	F5	3.59	1.27	0.75		
	F6	3.86	1.17	0.79		
	F7	3.78	1.28	0.61		
Environmental Concern	EC1	4.15	1.14	0.79	8.37%	0.95
	EC2	4.17	1.14	0.78		
	EC3	4.28	1.12	0.77		
Upcycling Behavior	UB1	2.38	1.28	0.78	12.40%	0.90
	UB2	2.74	1.40	0.83		
	UB3	2.85	1.41	0.84		
	UB4	2.70	1.40	0.80		
	UB5	2.59	1.37	0.83		

Practices Neglected in the Upcycling Behavior Scale

The responses to the open-ended question demonstrate the execution of diverse upcycling activities beyond the content of the upcycling scale. In this study, the most commonly mentioned upcycling activity is the use of product packages as storage containers. In addition, fabric pieces and threads obtained from clothes are used to make products such as pillowcases, cleaning cloths, mops, and decorative flowers. The wooden parts obtained from the products are used by the participants to make products such as cabinets, chests and tables. In addition, specific practices regarding upcycling were also observed among the participants. For instance, one of the participants made a sled for his/her children using an out-of-use plastic water pipe. Grasshead by using old pantyhose and 3D printer filament from PET bottles are also examples of upcycling practices by respondents.

Confirmatory Factor Analysis and Measurement Model Assessment

To test the measurement model and evaluate scale construct validity in more detail, confirmatory factor analysis is run. Consequently, measurement model has an acceptable fit with the data (χ^2=1514.34; d.f.=395; $p<0.001$; χ^2/d.f.=3.83; RMSEA=0.06; SRMR=0.05; CFI=0.93; TLI=0.93; NFI=0.91). Factor loadings of all constructs are found to be statistically significant ($p<0.001$) and range from 0.59 to 0.93. In addition, composite reliabilities (C.R.) of scales are over 0.70 (Table 3). Besides, average variance extracted (AVE) values exceed 0.50 threshold. As a result, convergent validity criteria for measurement model suggested by Hair et al. (2014) are met.

Table 3: Convergent Validity

Scale	Item	Factor loading	AVE	C. R.
Creativity	Cr1	0.72	0.55	0.90
	Cr2	0.73		
	Cr3	0.82		
	Cr4	0.82		
	Cr5	0.64		
	Cr6	0.74		
	Cr7	0.68		
	Cr8	0.71		
	Cr9	0.70		
	Cr10	0.77		
	Cr11	0.82		
Curiosity	Cu1	0.61	0.60	0.86
	Cu3	0.69		
	Cu4	0.92		
	Cu5	0.86		
Environmental concern	EC1	0.94	0.87	0.95
	EC2	0.93		
	EC3	0.93		
Upcycling behavior	UB1	0.73	0.64	0.90
	UB2	0.85		
	UB3	0.87		
	UB4	0.76		
	UB5	0.79		
Frugality	F1	0.85	0.62	0.92
	F2	0.84		
	F3	0.89		
	F4	0.86		
	F5	0.66		
	F6	0.76		
	F7	0.59		

Table 4 compares the correlations between the constructs and the square roots of AVE (given in bold) values to assess discriminant validity. Discriminant validity is ensured because when each pair of constructs is assessed, the square roots of AVE values are greater than the interconstruct correlations, as suggested by Hair et al. (2014).

Table 4: Discriminant Validity

	1	2	3	4	5
Upcycling behavior (1)	**0.80**				
Creativity (2)	0.48	**0.74**			
Curiosity (3)	0.32	0.69	**0.78**		
Environmental concern (4)	0.24	0.53	0.38	**0.93**	
Frugality (5)	0.25	0.60	0.40	0.78	**0.79**

Specifically, the upcycling behavior scale developed in this study appears to have acceptable qualities in terms of construct validity and reliability. As a result of both exploratory (in Table2) and confirmatory (in Table 3) factor analyses, the factor loadings of the scale items exceed 0.7. Upcycling scale is also shown to be reliable (Cranbach's Alpha: 0.90, C.R.: 0.90). Besides AVE value of the Upcycling behavior scale is 0.64. In Table 4, while the upcycling behavior correlates with related constructs, it is also shown to be different. Such findings provide evidence supporting construct validity (convergent, discriminant, and nomological) of the upcycling behavior scale. On the other hand, the open-ended question about upcycling activities in Türkiye reveals that content validity of the scale seems to be weak as discussed earlier (practices neglected in the upcycling behavior scale).

Structural Model and Hypothesis Testing

Inıtially, in order to test the research hypotheses, the structural equation modeling approach is adopted. The structural model of the research hypotheses fits well with the gathered data (X^2=1188.84; d.f.=317; p<0,001; X^2/d.f.=3.75; RMSEA=0.06; SRMR=0.05; CFI=0.94;

TLI=0.93; NFI=0.92). The results of the study show that both frugality and curiosity influence consumer creativity positively. As a result, H1 and H2 are accepted. Frugality and curiosity variables explain 60.20% of the variance in creativity. Upcycling behavior is shown to be influenced by only consumer creativity. On the other hand, the relationship between consumer frugality and upcycling behavior is found to be insignificant. Consequently, H3 is rejected whereas H4 is accepted. Besides, squared multiple correlations of upcycling behavior is calculated as 0.23. Standardized regression coefficients (β) of the paths are given in Table 5.

Table 5. Structural Model Path Coefficients

Hypothesis	Path	*β*	*t*	*p*	Result
H1	curiosity==>creativity	0.53	24.06	<0.001	Accepted
H2	frugality==>creativity	0.39	17.29	<0.001	Accepted
H3	frugality==>upcycling	-0.04	-2.05	0.41	Not supported
H4	creativity==>upcycling	0.50	14.17	<0.001	Accepted

In order to test the moderating effect (H5), the PROCESS macro (Model 1 with 5000 bootstrap samples) is used in SPSS with the imputed latent variable data calculated as a result of confirmatory factor analysis. With the inclusion of the moderating effect of environmental concern, R^2 value for upcycling behavior significantly (p<0.001) goes up by 1.5%. Results show the positive moderating role of environmental concern on the relationship between creativity and upcycling behavior (β=0.11; t=4.00; p<0.001). Besides, as shown in Figure 2, the regression line for high environmental concern is steeper than for low environmental concern. Thus, H5 is accepted.

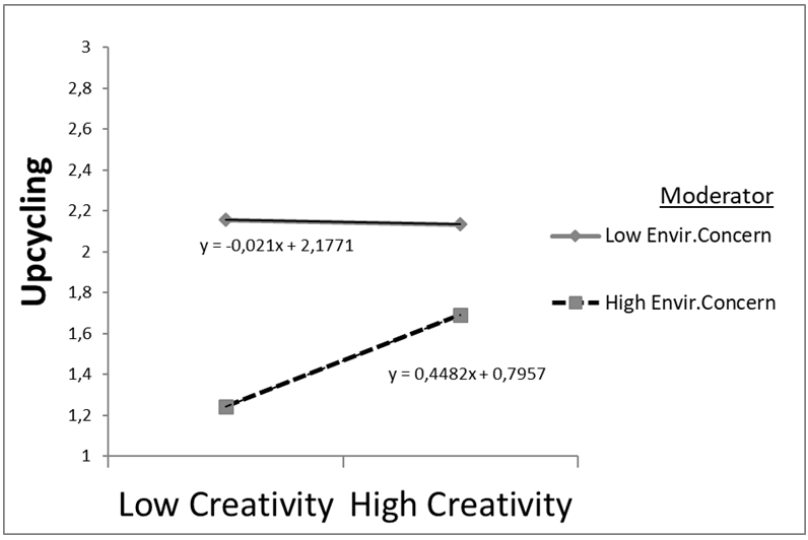

Figure 2: Moderating Role of Environmental Concern

In addition to research hypotheses assessment, mediating role of creativity is evaluated. When bootstrap with 5000 samples performed by AMOS, indirect effect of both curiosity (β=0.233) and frugality (β=0.277) on upcycling behavior are shown to be statistically significant (p<0.001). On the other hand, direct effect of both variables on upcycling behavior are found to be insignificant. Hence, creativity is shown to fully mediate the relationship between upcycling behavior and both variables. This result further provides insight concerning the importance of creativity in upcycling behavior.

Discussion and Conclusion

In this study, variables that may play an effective role in upcycling behavior are investigated in Türkiye. In addition, the research provides empirical data on Turkish consumers' upcycling activities. Overall, participants' tendencies towards upcycling behavior are found to be weak. Besides, a small number of participants state that they carry out activities other than those specified in the upcycling scale such as reusing product packages as containers and transforming used apparels into cleaning clothe.

One of the primary variables that may have an impact on upcycling behavior is consumers' creativity. Upcycling activities vary in terms of their processes and require a certain level of consumer creativity. Some upcycling activities involve direct reuse, such as using product packaging as storage containers for various purposes. On the other hand, upcycling used items for decoration requires consumer creativity regarding design and use of various tools and materials. In this study, creativity is investigated from the perspective of home practices of consumers. That is, consumer creativity is assessed with the 11 items proposed by Price and Ridgway (1983). Questions on this scale ask consumers' opinions about repair capabilities and reuse of used products. Huang et al. (2023) suggest that consumer creativity is influenced by culture and cultural experiences. This study shows that, Turkish participants mostly agreed with the expressions of creativity in relation to upcycling. As a result, to a certain extent, participants see themselves as creative consumers.

Consumers' ability to make the best use of the resources they have can be attributed to their thriftiness. As a result, in this research consumer frugality is taken into consideration. Participant frugality level is evaluated with the scale items proposed by Lastovicka et al. (1999). Hence, respondents are shown to be quite frugal in their consumption activities.

Studies in the field of consumer behavior and marketing primarily focus on how to increase consumers' curiosity about products. In this way, the likelihood of consumers purchasing and trying the products will be increased. In this study, however, consumer curiosity is investigated in terms of reuse and upcycling activities. Consumer curiosity regarding upcycling activities is measured with the four items proposed by Price and Ridgway (1983). Consequently, respondents mostly agree that they are curious about upcycling.

As with other product recovery methods, upcycling makes a positive contribution to the environment by reducing waste and CO2 emissions. Moreover, the upcycling of products by consumers and finding new uses at home also alleviate the harmful effects of reverse logistics activities on the environment. The relationship between environment and upcy-

cling necessitates the examination of the environmentalism levels of the participants in this study. Environmental concern of respondents is evaluated with items suggested by Bhatt et al. (2019). Findings of the study show that participants are environmentally conscious in their consumption activities.

Curiosity is the pursuit of novel insights and encounters. Being creative involves transforming preexisting information, concepts, or objects into something original and captivating. Studies (Karwowski, 2012; Price & Ridgway, 1983) have given evidence that there is a link between curiosity and creativity. Hypothesis 1 tests the influence of curiosity on creativity in the context of upcycling. Consequently, consumer curiosity is shown to positively influence creativity regarding upcycling. Creativity is also found to play a full mediator role between curiosity and upcycling behavior. Therefore, arousing consumer curiosity would seem to be important to trigger upcycling behavior. For instance, social marketing interventions including mystery, game play, and autonomy (Schutte & Malouff, 2020) might be useful to increase consumer curiosity regarding upcycling. In the long run, curiosity about upcycling might also be increased by educational institutions and systems that support critical thinking and inquiry-based learning.

Consumer creativity in upcycling activities might also be motivated by their thriftiness. Frugality has been shown to be significantly related to sustainable consumption behavior (Awis et al., 2020; Kiran Babu et al., 2024). Hypothesis 2 tests the influence of frugality on consumer creativity. It is concluded that the more frugal consumers, the more creative they are. On the other hand, frugality is shown to have no direct influence on consumer upcycling. Therefore, hypothesis 3 is not supported. Instead, frugality has been indicated to have a positive impact on upcycling activities through the full mediation of creativity. The component model of creativity process (Amabile, 1988) proposes that intrinsic motivations, skills in the task domain and skills in the creative thinking foster the success of developing innovations. Therefore, individuals require the requisite abilities and expertise to carry out their innovative

ideas; motivation alone is insufficient. Without the right knowledge and skills, motivation could not become a concrete action but rather an intangible desire. Frugality might arise from both the extrinsic and intrinsic motivations of the individual. The concept of frugality used in this study is based more on extrinsic motivations (such as rewards from resource savings) than intrinsic motivations (such as enjoyment). Therefore, the direct influence of frugality on upcycling behavior might be limited. Education given both in the family and at school plays an important role in encouraging individuals to adopt frugal consumption. As a result, in order for environmentally friendly behaviors such as upcycling to emerge, it is important for public authorities to run campaigns to encourage frugality towards educational institutions and individuals. Social marketing interventions, which target frugal individuals and include connotations of frugality, may be effective in encouraging behavior by embracing entertainment elements increasing intrinsic motivations related to frugality.

Upcycling-related activities might require a certain level of creativity and talent as they seek new uses for old products. Studies of Roster (2024) and Bhatt et al. (2019) provide evidence regarding the link between creativity and upcycling. In this study, hypothesis 4 tests the positive influence of consumer creativity on upcycling behavior. Indeed, creativity is shown to play a vital role for upcycling of Turkish respondents. Giving courses on handicrafts, home economics, and do-it-yourself in schools can contribute to the development of creativity in individuals regarding upcycling. Such courses can enhance the development of individuals' self-efficacy in upcycling behavior, as well as learning the processes required by upcycling practices (such as measuring, cutting, sewing, etc.).

Upcycling by consumers has a positive impact on the environment. Hypothesis 5 evaluates the moderating effect of consumer environmental concern on the relationship between creativity and upcycling behavior. In this study, it is shown that heightened environmental awareness increases the likelihood that their creativity will result in upcycling behavior. As a result, social marketing interventions about upcycling could tar-

get environmentally conscious populations or provide more information about the positive impact of household upcycling on the environment.

Managerial Implications

Encouraging consumers to upcycle end-of-life products in new and creative ways might be used by companies to develop and leverage brand image and brand equity. Specifically, brands that pursue creating a sustainable image might strengthen their brand positioning by providing upcycling ideas on websites (or social media) or supporting organizations providing content about upcycling. Such content marketing strategy might also be useful to increase consumer engagement, brand trust and value for customers (Hollebeek & Macky, 2019). For instance, Pagaru, a UK-based company that operates in the field of upcycled fashion items, provides creative ideas for consumer upcycling practices on its website. Another example comes from Turkish apparel brand Damat Tween. The brand supports upcycling workshops (Eco Art Lab) targeting artists in Istanbul Modern. In addition, Orka Holding, which is the owner of the Damat Tween makes use of such sponsorship agreements in marketing communications regarding sustainability.

Limitations and the Future Research

The most important limitation of the research stems from the research and sampling design. Convenience sampling and cross-sectional analysis research design causes the findings to be limited to the sample and the context of the study. In addition, upcycling behavior scale is found to be weak in its content validity. For instance, themes not included in the upcycling scale (such as utilizing used product packages as containers) emerge as a result of an open-ended question. Therefore, further qualitative studies will be useful in revealing the upcycling activities carried out by consumers in Türkiye. It will also contribute to the development of more rigorous upcycling behavior scales with better content validity. In addition, consumers' upcycling activities may also vary between countries. Hence, the research model of the study can be

tested in different cultural contexts. Further studies might also focus on developing a valid upcycling behavior scale for cross-cultural studies.

Gender might appear to be influential in upcycling behavior. Although the effect of gender on upcycling behavior is not examined in this study, women respondents are shown to score significantly ($p<0.05$) higher than men on some of the measured items (UB1, UB2, and UB3). Consequently, future studies could take into account the role of gender in upcycling activities.

Research and Publication Ethics Statement

This research was conducted in accordance with the rules of scientific research and publication ethics and approved by the Sivas Cumhuriyet University Social Sciences and Humanities Ethical Committee on June 19, 2023 (approval number:2023/11).

Authors' Contribution Rates to the Article

The author confirms the sole responsibility for the conception of the study, presented results and manuscript preparation.

Statement of Interest

This research is not subject to any conflict of interest.

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Appendix

Measures of the study

Item	Scale
	Curiosity (Price and Ridgway, 1983)
Cu1	As a child, I really enjoy taking things apart and putting them back together again
Cu2	I am very curious about how things work
Cu3	I like to fix things around the house
Cu4	I would rather fix something myself than take it to someone to fix
	Creativity (Price and Ridgway, 1983)
Cr1	When building something, it is better to use things already around the house than to buy materials
Cr2	I save broken appliances because I might fix them someday
Cr3	I save broken appliances because I might able to use parts from them
Cr4	I enjoy thinking of new ways to use old things around the house
Cr5	I find myself saving packaging on products to use in other ways (egg cartoons, plastic shopping bags)
Cr6	When I build something, I can often make do with things I've already got around the house
Cr7	Even if I don't have the right tool for the job, I can usually improvise.
Cr8	I never throw something away that I think I might use later
Cr9	I take great pleasure in adapting products to new uses that the manufacturer never intended
Cr10	In general, I would rather alter an old product to work in a new situation purchase a new product specifically for that purpose
Cr11	After the useful life of a product, I can often think of ways to use the parts of it for other purposes.
	Frugality (Lastovicka et al., 1999).
F1	I believe in being careful in how I spend my money
F2	If you can re-use an item you already have, there's no sense in buying something new
F3	If you take good care of your possessions, you will definitely save money in the long run
F4	Making better use of my resources makes me feel good
F5	There are things I resist buying today so I can save for tomorrow
F6	I discipline myself to get the most from my money
F7	There are many things that are normally thrown away that are still quite useful
	Environmental Concern (Bhatt et al., 2019)
EC1	It would mean a lot to me if I could contribute to protecting the environment

EC2	I want to make choices and act in ways that positively impact the planet
EC3	It is important to me that we try to protect our environment for our future generation
	Upcycling Behavior (Author's own work)
UB1	I make bags from old clothes
UB2	I make flower pots from used cans
UB3	I use empty bottles as vases
UB4	I make toys for children from empty product packages
UB5	I make decorations for my home from product packages

Genişletilmiş Özet

Tüketicilerin İleri Dönüşüm Davranışlarının Öncülleri

Tüketici ileri dönüşümü, ömrünü tamamlamış ürünleri, onları oluşturan ilk halleri kadar değerli veya daha değerli ürünlere dönüştürme uygulamasıdır (Shi vd., 2022). Geri dönüşüm süreçleri genellikle kullanılmış ürünlerdeki değerli malzemelere odaklanırken, ileri dönüşüm ürünün mevcut formuna uyan yaratıcı yeni kullanımlar arar. Atık veya daha önce kullanılmış malzeme veya ürünü dönüştürerek, yeniden kullanarak ya da yeniden üreterek, gereksiz kaynak harcamalarını azaltırken ona yeni bir hayat veren ileri dönüşüm, daha yüksek değerlere ve/veya niteliklere ve daha sürdürülebilir bir yapıya sahip yeni ürünlerin (yeniden) yaratılması olarak nitelendirilir (Sung, 2015).

Ekonomik büyüklüğüne ve atık üretim hacmine rağmen Türkiye'de ileri dönüşüm konusunda, özellikle tüketici düzeyinde, ampirik çalışma eksikliği bulunmaktadır. Dolayısıyla, bu çalışmanın amacı Türkiye'deki tüketicilerin ileri dönüşüm davranışlarını incelemek ve bu davranışlar üzerinde etkisi olabilecek önemli değişkenleri ortaya koymaktır. Bu araştırmada, diğer ülkelerde yapılmış önceki çalışmalardan yararlanılarak, ileri dönüşüm bağlamında yaratıcılık ve tutumluluk değişkenleri ele alınmaktadır. Ayrıca çalışmada, yaratıcılığı destekleyebilecek ileri dönüşüm faaliyetlerine yönelik tüketici merakı da değerlendirilmektedir. Önceki çalışmalar çevresel değerlerin yeniden kullanım davranışlarını güçlendirdiğini göstermiştir (Roy, 2023; Arias vd., 2024). Daha özel olarak, bu çalışmada çevresel değerlerin ileri dönüşüm davranışı üzerindeki rolü ele alınmaktadır. Bu sebeplerle, bu çalışmanın Tür-

kiye'de ileri dönüşüm konusunda yapılmış ilk tüketici çalışmalarından biri olması ve tüketici ileri dönüşümü konusunda giderek büyüyen literatüre katkıda bulunması beklenmektedir.

Araştırma kapsamında, önceki çalışmalara ve çeşitli teorilere dayandırılarak aşağıdaki hipotezler kurulmuştur;

H1:Tüketici merakı tüketici yaratıcılığını olumlu yönde etkiler,

H2: Tüketici tutumluluğu tüketici yaratıcılığını olumlu etkiler,

H3: Tüketici tutumluluğu, tüketicinin ileri dönüşüm davranışını olumlu yönde etkiler,

H4: Tüketici yaratıcılığı, tüketicinin ileri dönüşüm davranışını olumlu yönde etkiler,

H5: Tüketicinin çevresel kaygısı, yaratıcılık ile ileri dönüşüm davranışı arasındaki ilişkide düzenleyici etkide bulunur.

Merak duygusunun insanlık açısından önemine rağmen literatürde kavramsallaştırılması ve tanımlanmasında farklılıklar bulunmaktadır (Grossnickle, 2016; Wagstaff vd., 2021). Merakın genel bir huy mu yoksa anlık bir durumdan ortaya çıkan bir olgu mu olduğuna ilişkin araştırmalar farklılık göstermektedir. Huy bakış açısı merakı, insanların çevresel ipuçlarına sıklıkla merakla yanıt verme veya meraklı olma fırsatlarını aktif olarak arama, dolayısıyla yeni deneyimler veya bilgiler için özlem duyma yönündeki kalıcı bir eğilim olarak görür (Litman ve Silvia, 2006). Öte yandan merakın bir durum olması bakış açısı, çevresel özelliklere tepki olarak ortaya çıktığını ileri sürmektedir (Loewenstein, 1994).

Tüketici yaratıcılığı, tüketicilerin ürün ve hizmetlerle etkileşim kurmasının çeşitli ve yaratıcı yollarını ifade etmektedir. Bu, mevcut mal veya hizmetlerin müşterilerin ihtiyaç veya tercihlerine daha iyi uyacak şekilde değiştirilmesi, ayarlanması veya dönüştürülmesi anlamına gelebilir. Tüketici yaratıcılığı, tüketimle ilişkili sorunları ele almak için kullanılabilen bir bireyin problem çözme kapasitesi olarak tanımlanabilir (Hirschman, 1980). Yenilik arayışı modeline göre merak, dikkati, kategorizasyonu ve yeni bilginin pekiştirilmesini kolaylaştırarak yaratıcılığı teşvik etmektedir (Ivancovsky vd., 2024). Tüketicilerin ev onarımlarına olan ilgisi ve nesnelerin çalışma prensipleri hakkındaki merakları, yaratıcılıklarını destekleyebilir ve işlevsiz ürünleri kullanmanın yeni yollarını bulmalarına yardımcı olabilir.

Bireylerin kaynakları dikkatli kullanmasını esas alan tutumluluk, tüketimi azaltmanın yanı sıra bireylerin tasarruflarını artırarak çevreye olumlu katkı sağlamaktadır. Yeniden kullanım bağlamında, tüketici tutumluluğu yaratıcı son kullanım davranışlarını olumlu yönde etkilemektedir (Evers vd., 2018). Bunun yanında tutumlu bireylerde ürün geri kazanımı davranışlarının arttığı gösterilmektedir (Wang vd., 2023; Song vd., 2023; Klug & Niemand, 2021).

Yaratıclık ise ileri dönüşüm davranışlarında önemli bir rol oynayabilmektedir. Örneğin, giysi ileri dönüşümü bağlamında, tüketicilerin ileri dönüşüm tekniklerine olan ilgisi yaratıcılıktan olumlu yönde etkilenmektedir (Bhatt vd., 2019). Benzer şekilde, Roster (2024)'ün çalışması, müşteri yaratıcılığı ile giysi ileri dönüşümünü öğrenme arasında olumlu bir ilişki olduğunu göstermektedir.

Çevresel kaygı, çevre üzerinde etkisi olan olayların, kişinin kendi eylemlerinin veya başkalarının eylemlerinin değerlendirilmesi olarak tanımlanmıştır (Fransson ve Gärling, 1999). Bhatt vd. (2019), tüketicilerin çevresel konulara yönelik kaygısının ileri dönüşüme olan ilgiyi olumlu yönde etkilediğini göstermektedir. Çevresel kaygı düzeyinin artması bireylerin geri dönüşüm davranışları üzerindeki yaratıcılığının etkisini olumlu yönde etkileyecektir.

Araştırma hipotezlerini test etmek amacıyla, Mayıs-Haziran 2023 döneminde 768 kişiden veri toplanmıştır. Katılımcılara Google forms üzerinde oluşturulan anket linkiyle ulaşılmıştır. Araştırmaya 18 yaş ve üzeri bireyler katılmıştır. Anket formunda katılımcıların rızası alınmaktadır. Anket formunda yer alan tüketici merak ve yaratıcılığıyla ilgili ölçek maddeleri için Price ve Ridgway (1983)'ün çalışmasından yararlanılmıştır. Tutumluluk değişkeninin ölçülmesinde ise Lastovicka vd. (1999)'un önerdiği ölçek maddeleri kullanılmaktadır. Bunun yanında, çevresel kaygı için Bhatt vd. (2019)'un çalışmasından faydalanılmaktadır. Araştırma tasarlandığı sırada ileri dönüşüm davranışını ölçen bir ölçeğe rastlanılmamıştır. Bu nedenle bu konuda Türkiye'de yürütülen araştırmalarda (Dal ve Gökçe, 2019; Yıldırım, 2017; İlden ve Sarıca, 2023) en çok belirtilen davranışlar ölçek maddelerinin (UB1: Eskimiş kıyafetlerden çanta yaparım, UB2: Kullanılmış konserve kutularından saksı yaparım, UB3: Boş şişleri vazo olarak kullanırım, UB4: Boş ürün ambalajlarından çocuklara oyuncak yaparım, UB5: Ürün ambalajlarından evime süs yaparım) oluşturulmasında kullanılmıştır. Ayrıca ucu açık bir soruyla, katılımcılardan ölçekte belirtilmeyen ve gerçekleştirdikleri başka bir ileri dönüşüm faaliyeti olup olmadığı sorulmuştur.

SPSS ve AMOS yazılımları yardımıyla gerçekleştirilen açımlayıcı ve

doğrulayıcı faktör analizleri sonucunda, araştırmada kullanılan ölçeklerin kabuledilebilir düzeyde yapı geçerliliğine sahip olduğu görülmektedir. Ancak ileri dönüşüm davranışı ölçeğinde yer almayan katılımcıların farklı uygulamaları olduğu (örneğin boş ambalajların saklama kabı olarak kullanılması) görülmüştür. Bu durum ileri dönüşüm davranışı ölçeği için içerik geçerliliğinin zayıf olabileceğini göstermiştir.

Yapısal eşitlik modellemesi ve regresyon analizleri yardımıyla araştırma hipotezleri test edilmiştir. Analizler sonucunda H1, H2, H4 ve H5 kabul edilmiştir. H3 ise reddedilmiştir. H1 ve H2 sonucunda, tüketicilerin ileri dönüşüm davranışlarına merak duymasının ve tutumluluk düzeylerinin artmasının, bu konudaki yaratıcılıklarını desteklediği görülmüştür. Ancak H3 hipotezinin test edilmesi sonucunda tüketici tutumluluğunun ileri dönüşüm davranışı üzerinde doğrudan bir etkisinin bulunmadığı ortaya çıkmıştır. Katılımcıların ileri dönüşüm davranışında en önemli rol oynayan değişken bu konudaki yaratıcılıkları olduğu bulunmuştur. Katılımcıların, çevresel kaygı düzeyindeki artışın yaratıcılığın etkisini daha da arttırdığı gözlemlenmiştir.

Sonuç olarak çalışmada tüketici merakı, yaratıcılığı, tutumluluğu ve çevresel kaygısının ileri dönüşüm davranışı üzerinde etkili olabileceği bulunmuştur. Uyguamada, ileri dönüşüm faaliyetlerinin desteklenmesi ve özendirilmesi, işletmelerin sürüdürülebilirlik ile ilgili marka çağrışımlarını pekiştirerek, marka sermayelerinin geliştirilmesinde katkıda bulunabilir.