

The Effect of Resource Type on Green Consumption: Is Time or Money More Effective?

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Abstract

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Full Text

Preamble

The Impact of Resource Type on Green Consumption: Is Time or Money More Effective?

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Abstract: Time and money represent two important resource types that inevitably influence consumers' cognitive thinking and decision-making behaviors in the process of green consumption. However, the specific mechanisms through

which resource type affects green consumption remain unclear. This study introduces the cognitive differences triggered by time and money into the domain of green consumption. On one hand, based on construal level theory and human values, we analyze how time resources promote green consumption and how money resources inhibit it. On the other hand, from the perspectives of individuals, enterprises, and products, we combine experimental methods to explore the boundary conditions of how time and money resources influence green consumption. We further introduce emotional response level, environmental self-accountability, and perceived product effectiveness as mediating variables to construct a theoretical model of resource type's impact on green consumption. The findings will help harness the positive role of time and money resources in promoting green consumption and provide new insights for enterprises to use resource cues to guide green consumption.

Keywords: green consumption, time resource, money resource, construal level, human values

Classification Code: B849: C931

1. Problem Statement

The ecological environment constitutes a crucial foundation for human survival and development. How to achieve economic growth while addressing environmental challenges has long been a hot topic of global concern. As the global environmental crisis intensifies, people have recognized the importance of tackling climate change and protecting the ecological environment. The Chinese government has consistently prioritized green development, advocating for green, low-carbon, circular, and sustainable production and lifestyles. After proposing the “dual carbon” goals of peaking carbon emissions before 2030 and achieving carbon neutrality before 2060, China has introduced a series of strategic measures to strengthen ecological civilization construction. The report from the 20th Party Congress emphasizes that Chinese modernization involves harmonious coexistence between humanity and nature, reaffirming the importance of green transformation development.

With increasingly prominent environmental issues and strong government policy support, more domestic and international enterprises have begun incorporating green concepts into their products, actively researching and promoting green products. However, a significant gap remains between consumers' attitudes toward green products and their actual purchase intentions, and green consumption demand needs further stimulation and release. Therefore, researching how to enhance consumers' green consumption willingness and promote the transformation of public green consumption behavior is crucial for reducing the carbon footprint of daily consumption and improving the ecological environment.

In daily life, both time and money are resources that consumers frequently encounter and represent the two most important resources for human survival. Previous research has found that time and money resources, as latent variables,

unconsciously influence consumers' thinking patterns and goal selection in the environment, profoundly impacting their prosocial behavior and well-being experiences. On one hand, social psychology has long focused on money resources. Vohs et al. (2006) first explicitly proposed the concept of money priming, finding that when money resources are conceptually activated, they stimulate individuals' sense of self-sufficiency and focus on self-improvement. When facing more challenging tasks (e.g., keeping one's palm in ice water for an extended period) or experiencing social rejection or survival anxiety, money resources can effectively reduce physical and psychological pain (Zhou et al., 2009). Vohs et al. (2008) invoked the market-pricing mode hypothesis, noting that under this mode, individuals primed with money concepts tend to conduct cost-benefit analyses and focus more on the benefits or advantages that decision-making behaviors bring to themselves.

On the other hand, compared to money resources, existing research has paid relatively less attention to time resource priming. Okada and Hoch (2004) found that people's attitudes toward time differ from those toward money. A key distinction between time and money resources lies in that the opportunity cost of money is easier to evaluate, whereas the opportunity cost of time remains relatively ambiguous. Money can be calculated and exchanged, possessing high liquidity and substitutability, and it maintains stable value (one yuan is always one yuan). In contrast, time is intangible and intangible; everyone equally possesses 24 hours daily, lost time can never be returned, and time's value changes with individuals' age, experience, and circumstances (Zhang et al., 2010). Therefore, the value of time resources is relatively flexible. Gino and Mogilner (2014) argue that when consumers contemplate time resources rather than money resources, they are more likely to stimulate self-reflection, become more aware of the impact of their behaviors, and engage in more prosocial behaviors that conform to moral norms and moral identity to maintain a positive self-image.

Precisely because substantial differences exist between time and money resources, an increasing body of research supports that priming time versus money resource concepts produces distinctly different effects on individuals' cognitive thinking and decision-making behaviors. Scholars have proposed that conceptual priming can be used to awaken individuals' conceptual cognition of time or money resources at the psychological level (Vohs et al., 2006; Mogilner & Aaker, 2009). However, existing research on time and money resource priming remains relatively scarce and lacks discussion on how time and money resources affect green consumption. Further attention to resource types commonly encountered in daily consumption scenarios will help enterprises understand consumers' psychological needs, formulate more targeted marketing strategies, and thereby enhance consumers' attitudes and purchase intentions toward green products. In view of this, this study takes resource type as the entry point, conducts comparative research on the impact of time and money resources on green consumption and its internal mechanisms, and explores the boundary conditions and mediating mechanisms of time and money resources' influence on green consumption from the perspectives of individual factors,

enterprise nudging, and product factors (product innovativeness, product typicality). The research conclusions can not only theoretically expand and enrich relevant research on factors influencing green consumption but also provide scientific theoretical basis for governments to carry out green public welfare campaigns and for enterprises to formulate green marketing plans in practice.

2.1 The Concepts of Time and Money Resources and Their Comparison

Traditional economists believe that the value of time and money resources is equal, expressing time's value through individuals' wage rates, which implies that time's opportunity cost can be measured by money's value (Becker, 1965). However, subsequent research found that time and money resources have essential differences in influencing consumers' cognitive thinking and decision-making behaviors (He et al., 2021). For example, money resources are typically associated with status, power, and independence, while time resources are more closely linked to leisure, well-being, and social interaction (Gino & Mogilner, 2014; Mogilner, 2010; Mogilner & Aaker, 2009). This stems from differences in how people cognize time and money resources: money has stable value (one yuan is always one yuan), can be clearly calculated and exchanged, and possesses high liquidity and substitutability; whereas time is intangible and invisible, people's judgment of time value is relatively ambiguous, and it changes with individuals' age, experience, and circumstances (Zhang et al., 2010). Previous research found that conceptual differences between time and money resources lead consumers to develop different cognitive thinking and goal selection when processing related information, subsequently affecting their decision-making behaviors.

(1) Cognitive Differences

Generally, consumers' cognition and information processing are influenced by construal level. According to construal level theory, individuals' psychological representation of events depends on psychological distance; the farther the perceived psychological distance, the more inclined they are to use abstract, high-level construal for information processing; the closer the perceived psychological distance, the more likely they are to activate concrete, low-level construal to process cue information (Liberman & Forster, 2009). MacDonnell and White (2015) argue that compared to time resources, money resources are more tangible, touchable, and calculable physically, while time resources are more experiential, ambiguous, and lacking in contextual features by nature. Therefore, people's understanding of money resource concepts is more concrete, while their understanding of time resource concepts is more abstract. Consumers with high-level construal show more positive attitudes and intentions when processing donation appeals related to time resources, and consumers with low-level construal show more positive attitudes and intentions when processing donation appeals related to money resources. That is, when individuals' construal level matches time (vs. money) resource appeals, their charitable donation intentions

are higher.

(2) Mindset Differences

Liu and Aaker (2008) proposed mindset theory, suggesting that when time and money resources appear as concepts, they trigger different mindsets. Specifically, time resources activate individuals' more emotional mindset, making them more inclined to seek emotional meaning in life, cherish time spent with friends and family, and obtain happiness through helping others and charitable donations. In contrast, money resources stimulate individuals' mindset of maximizing economic value; they choose to invest more time and energy in work, reduce time allocated to social activities, and engage less in volunteer work or charitable donations (Mogilner, 2010; Liu & Aaker, 2008). Muller et al. (2013) further provided more experimental evidence for the differences between time and money resources in influencing individual thinking patterns. They found that when the concept of time resources becomes salient, consumers tend to evaluate experiential products more highly, whereas emphasizing money resource concepts is not conducive to consumers' evaluation and willingness to pay for experiential products. This is because time resources are more closely connected to emotional experiences, while money resources are more closely related to economic value.

(3) Goal Differences

Seeking benefits and avoiding harm is humanity's instinct for environmental adaptation. According to approach-avoidance motivation theory, approach motivation stimulates individuals to show more approach behaviors toward benefits and rewards in the environment, while avoidance motivation increases individuals' sensitivity to potential losses and punishments, resulting in more avoidance behaviors (Carver & White, 1994). Compared to money resources, the value of time resources is more ambiguous and difficult to quantify. For example, people are less sensitive to the results of time; before the fact, they are more willing to invest time in high-risk, high-return options, and after the fact, they can more easily adapt to negative outcomes by adjusting their cognition of time investment value (Okada & Hoch, 2014). Investment in money resources shows the opposite pattern; people are more sensitive to losses of money resources and less willing to take risks. For example, when completing gambling game tasks in experiments, subjects are more likely to accept losses from failed time resource investments compared to money resources. Soman (2001) also confirmed this conclusion, that the cost of spending time resources is easier to ignore than the cost of spending money resources. Thus, consumers show more obvious benefit-seeking motivation when spending time resources, whereas they tend more toward loss avoidance when spending money resources.

2.2.1 The Impact of Time and Money Resources on Individual Product Choice

Mogilner and Aaker (2009) found that activating the concept of time resources strengthens the connection between consumers and products, focusing on the experience gained from using the product; whereas activating the concept of

money resources makes consumers more focused on owning the product and generally does not enhance the connection between themselves and the product. Based on this, Lasaleta et al. (2014) found in marketing activities that product nostalgia information can reduce consumers' desire for money resources by promoting social connection, making consumers willing to pay higher amounts for products. Huttel-Maack and Gatter (2016) studied money concept priming in conspicuous product advertisements and found that embedding money resource-related information into conspicuous product advertisements can significantly enhance consumers' evaluation and purchase intention of conspicuous products. Additionally, time and money resources affect consumers' information processing methods. Su and Gao (2014) believe that when individuals' money resource concepts are primed, they have stronger motivation and ability to analyze various components of information and prefer product attribute descriptions using numbers (e.g., battery life of 4.5 hours); whereas the value of time is more difficult to calculate and measure, and consumers primed with time resource concepts tend to process information holistically and prefer product attribute descriptions using language (e.g., soft and delicate cotton). Tong et al. (2013) studied how priming money resource concepts affects consumers' choice preferences between hedonic and utilitarian products, arguing that when facing different product types, consumers primed with money resource concepts are more likely to activate a prevention self-orientation and thus prefer purchasing utilitarian goods over hedonic goods.

2.2.2 The Impact of Time and Money Resources on Individual Charitable Donation Willingness

Charitable donation is crucial for social operation and sustainable development. Donations mainly include two forms: time resources and money resources. Early research suggested that activating individuals' time resource concepts, compared to money resource concepts, more easily stimulates consumers to contribute to charitable causes (Gino & Mogilner, 2014; Liu & Aaker, 2008). This is because priming individuals' money resource concepts or assigning more economic value to time resources reduces people's empathy, compassion, and willingness to voluntarily contribute time or money (Chatterjee et al., 2013). Kim (2014) found that using altruism-appealing advertisements or showing donors the positive changes brought by donation behavior is more persuasive for time resource donations; whereas using self-interest-appealing advertisements or showing donors the reality of recipients' needs is more persuasive for money resource donations. Zhou et al. (2019) pointed out that anthropomorphizing money resources can increase consumers' charitable donation intention by enhancing warmth perception. Zhang et al. (2019) compared the key roles of advertising appeals in promoting different types of resource donations, finding that emphasizing warmth and affection in donation advertising appeals can increase donors' connection with society, thereby enhancing their time donation willingness, because contributing time is usually understood as more "moral" than contributing money; whereas emphasizing competence and utility in donation advertising appeals en-

hances donors' personal competition orientation, thereby enhancing their money donation willingness, because they believe time resources are less substitutable than money resources. In summary, whether viewing time or money as a consumption resource or merely conceptually activating concepts related to time or money resources can guide people to view prosocial behaviors differently.

2.2.3 The Impact of Time and Money Resources on Individual Subjective Well-Being

Psychologists believe that compared to time resources, the connection between money resources and well-being is very weak (Diener & Biswas-Diener, 2002). DeVoe and House (2012) revealed the relationship between time, money, and well-being, proposing that the impact of time and money resources on individual well-being is not only reflected in how people use these two resources but more importantly, concepts related to time and money resources also affect the well-being consumers derive from specific activities. Reutner and Greifeneder (2018) found that focusing on time resources increases individuals' desire and possibility to interact with others and establish social connections, whereas emphasizing money resources reduces individuals' communication desires with others, thereby affecting people's attention to common problems in social activities. Whillans and Dunn (2019) proposed that although money resources can enhance people's life happiness by meeting needs, their research found that giving up part of income to obtain more discretionary time can effectively increase people's positive emotions and life happiness. Social connection is key to consumers' well-being enhancement. Previous research believed that money resources can meet people's basic survival needs, and thinking about money makes people more focused on their own goals and interests, increasing time spent on work, reducing dependence on others, and being less willing to establish connections with others. Compared to time resources, merely mentioning money resources reduces people's willingness to help strangers and decreases time spent participating in social activities, both of which are crucial for enhancing individual well-being (Mogilner, 2010). In contrast, when consumers focus on time resources, they tend to spend more time with family and friends, reduce time allocated to work, and promote well-being enhancement by strengthening individual-society connections. These behaviors are often motivated by individuals' emotional and spiritual pursuits rather than expecting to obtain economic value or utilitarian goals (Whillans et al., 2017).

2.3 The Connection Between Time, Money Resources and Green Consumption

By reviewing previous literature on time and money resources and combining the characteristics of green consumption, we can establish connections between time, money resources and green consumption behavior. Specifically, we will discuss the connections between green consumption and time and money resources from

three aspects: individualism vs. collectivism orientation, short-term vs. long-term goal pursuit, and concrete vs. abstract thinking construction.

(1) Individualism vs. Collectivism Orientation

In Hofstede's cultural dimension theory, individualism and collectivism represent two ends of a continuum (Hofstede, 1980). Individualistic individuals prioritize achieving self-related goals over maintaining collective harmonious relationships; whereas collectivistic individuals prioritize family, organizational, or collective interests and emphasize belongingness.

Research on time and money resources found that money resources are more closely linked to wealth, status, and power, and priming money resource concepts makes consumers more focused on their own achievements and work efficiency while weakening their emphasis on social relationships. In contrast, time resources cannot be accumulated, and lost time never returns; therefore, priming time resource concepts more easily makes people value precious time spent with family and friends, more willing to establish connections with others and society, and seek meaning in life (Mogilner, 2010; Vohs et al., 2006). Thus, individuals primed with money resource concepts show more obvious individualistic tendencies, while individuals primed with time resource concepts show stronger collectivistic intentions.

Green consumption usually requires collective participation rather than relying solely on individual efforts (Bamberg et al., 2015). Existing research shows that collectivistic orientation has a more positive impact on people's pro-environmental behaviors, such as being more willing to purchase green products (Choi & Kim, 2005). Ferguson et al. (2011) found that collective guilt can serve as a driver for environmental protection behavior. For example, when conveying to consumers that domestic carbon emission values are relatively high over a period, it creates a sense of collective guilt, thereby stimulating them to pay more attention to green environmental protection and sustainable development in subsequent actions. Yang et al. (2017) proposed that when purchase situations highlight consumers' personal identity, consumers evaluate green products based on personal interests; whereas when purchase situations emphasize consumers' collective identity, consumers pay more attention to and follow collective goals and interests. Cui and Mei (2021) found that compared to independent self-construal consumers who emphasize individualism, interdependent self-construal consumers who value collectivism have higher green product purchase intentions.

(2) Short-term vs. Long-term Goal Pursuit

Hofstede's cultural dimension theory suggests that individuals with long-term orientation have stronger perseverance and resilience, while short-term oriented individuals tend to be conservative, stable, and respect tradition (Hofstede & Bond, 1988).

Research on time and money resources found that some time-related information affects individuals' life goals, making them more focused on long-term in-

terests. Tong et al. (2011) explored how time resource concepts unconsciously affect individuals' trade-offs between short-term and long-term goals, finding that compared to money resource concepts, priming time resource concepts makes consumers more focused on emotional factors positively related to long-term happiness. Whillans and Dunn (2019) pointed out that money resources are external motivational sources for individuals to achieve goals, while time resources are connected to internal motivations for pursuing long-term life happiness. Individuals who value time resources more than money resources usually have higher levels of life happiness evaluation. Therefore, individuals primed with money resource concepts more easily focus on short-term benefit acquisition and cost loss, while individuals primed with time resource concepts are more inclined to set long-term goals to obtain longer-term benefits and happiness.

Green consumption requires a relatively long period of accumulation to see behavioral results. When consumers perceive longer future benefit timeframes, their expectations for benefits become less ideal (Hardisty & Weber, 2009). Compared to green consumption, most traditional consumption behaviors have more direct results, but many environmental problems arise precisely because consumers tend to satisfy immediate needs. Green consumption requires consumers to have longer-term goals, delaying current enjoyment experiences to obtain more positive future results. Gu et al. (2020) found that when perceiving ecological resource scarcity, future-oriented consumers value delayed rewards more than immediate interests and are more likely to engage in green consumption. Halder et al. (2020) demonstrated the positive role of future-oriented values in enhancing individuals' environmentally friendly consumption intentions from two sub-dimensions of long-term orientation: tradition and planning. Tam and Chan (2017) believe that in countries with higher future orientation, there is a stronger connection between consumers' awareness of environmental issues and self-reported environmental protection behaviors. Overall, since the results of pro-environmental behaviors are future-oriented, consumers with long-term goal orientation are expected to have higher possibilities of showing environmentally friendly attitudes and behaviors and are more willing to leave a better ecological environment for future generations.

(3) Concrete vs. Abstract Thinking Construction

Research on time and money resources found that money resources are more concrete and value-assessable, while time resources are more abstract and value-ambiguous (Okada & Hoch, 2004). Consumers primed with money resource concepts tend to adopt analytical processing, while consumers primed with time resource concepts rely more on holistic processing (Su & Gao, 2014). Gong et al. (2020) found that individuals primed with time resource concepts perform better in creative behaviors than those primed with money resource concepts. MacDonnell and White (2015) believe that priming money resource concepts activates consumers' relatively concrete thinking patterns, while priming time resource concepts activates individuals' more abstract thinking patterns. Therefore, priming money resource concepts facilitates the establishment of concrete thinking, while individuals primed with time resource concepts tend to construct

abstract thinking.

Compared to traditional consumption, green consumption has more uncertainty and ambiguity because it is related to future benefits (Weber, 2010). For example, consumers often question what products are truly green and whether purchasing and using green products can actually achieve expected environmental effects. Therefore, green consumption behavior and its results are usually described as abstract, uncertain, and difficult to grasp (Reczek et al., 2018). Since people are more susceptible to social factors regarding unfamiliar matters, research suggests that social factors such as others' presence and social expectations more easily prompt consumers to show more positive participation intentions in green consumption (Green & Peloza, 2014). Additionally, researchers believe that sustainable behavior can be promoted by reducing the abstractness of green consumption. For example, using videos to convey visual information related to environmental issues can trigger more concrete emotions about green consumption in consumers (White et al., 2019). Yang et al. (2015) found that the effectiveness of green advertising appeals depends on whether they can successfully activate consumers' abstract thinking. When consumers pay more attention to the benefits of green consumption behavior for social environmental sustainable development, introducing green products' environmental features in more vague and abstract ways is more effective than using more concrete methods. Sun and Miao (2018) applied construal level theory to research on green advertising effectiveness, finding that the environmental attributes of green products or services are usually abstract and decontextualized, while the product or service attributes emphasized in non-green advertising are concrete and contextualized. Therefore, when consumers' construal level matches green/non-green advertising, consumers perceive higher processing fluency, which positively affects their advertising attitudes and product attitudes.

It can be seen that time and money are not only two important resources that individuals frequently encounter in green consumption processes, but when time and money resources influence consumers' cognitive thinking and decision-making behaviors in conceptual forms, they also have certain connections with the characteristics of green consumption. Therefore, it is necessary to further explore the impact mechanisms of time and money resources on individual green consumption behavior.

2.5 Summary of Existing Research and Future Prospects

Environmental issues concern humanity's long-term development; therefore, green consumption has always been a key topic in academic discussions. Research on how to more effectively promote the transformation of consumers' green consumption concepts and behaviors is not only beneficial for governments to promote green, low-carbon, civilized, and healthy lifestyles and help enterprises understand consumers' psychological needs to formulate more targeted green marketing strategies but also has positive effects on enhancing consumers' life satisfaction and subjective well-being.

Existing research has explored factors influencing green consumption behavior from social, individual, advertising, and emotional-cognitive levels (White et al., 2019). However, current discussions on factors influencing green consumption behavior remain incomplete. Future research can continue to build a more comprehensive research framework for green consumption behavior from perspectives such as environmental cues and psychological motivations. Since consumers' cognition is easily influenced by surrounding environmental cues, which subsequently generate goals consistent with cue information, and environmental cues can subtly affect consumers' decision-making methods without affecting their attentional states. As mentioned above, time and money are important resources that consumers most frequently encounter in daily life, and priming concepts of time and money resources triggers different behavioral tendencies in individuals' cognition, thinking, and goal motivation. Based on this, this study comparatively analyzes the impacts of time and money resources on individual cognitive thinking and behavioral decision-making and establishes connections with green consumption at three levels: individualism vs. collectivism orientation, short-term vs. long-term goal pursuit, and concrete vs. abstract thinking construction. Future research can further explore the potential mechanisms and boundary conditions of resource type driving green consumption by constructing a theoretical framework of how time and money resources influence green consumption behavior.

3.1 Sub-Study 1: The Impact of Time and Money Resources on Green Consumption

Research on time resources found that some time-related information affects individuals' life goals, making them more focused on long-term interests. Tong et al. (2011) explored how time concepts unconsciously affect individuals' trade-offs between short-term and long-term goals, finding that compared to money resources, time resources make consumers more focused on emotional factors positively related to long-term happiness. Additionally, increasing thinking about time resources can encourage people to show more behaviors that conform to moral norms (Gino & Mogilner, 2014). This is because time resources cannot be accumulated, and lost time never returns; therefore, priming time resource concepts more easily makes people value precious time spent with family and friends, more willing to establish connections with others and society, and seek meaning in life (Mogilner, 2010; Vohs et al., 2006). They hope to participate in social activities with intimate interactions with family or friends and are more willing to spend time maintaining interpersonal relationships (Whillans & Dunn, 2019).

Since social connection level is positively correlated with individuals' prosocial behavior, when social connection level is higher, people are more likely to donate to charities and participate in volunteer activities. Simultaneously, individuals with stronger needs for social connection can usually show more responsible prosocial behavior. For example, they are more generous when facing strangers

in need (Cross et al., 2000; Karremans et al., 2005). Based on the above analysis, we propose that views on time resources affect green consumption. More specifically, consumers who value time resources have stronger desires for social relationships. To establish and maintain good social relationships, they pay more attention to and consider others' interests, thus showing more positive attitudes and behaviors toward green products or services that benefit long-term social environmental sustainable development.

Proposition 1: Valuing time resources promotes individuals' green consumption behavior.

Unlike time resources, money resource-oriented thinking increases individuals' self-focus and reduces desire for social relationships. For example, showing more self-sufficient independent behaviors, being more willing to spend time alone and reducing time spent with others (Mogilner, 2010). This is because money resources can help people obtain higher status and greater power through accumulation. Therefore, priming money resource concepts more easily makes consumers feel self-sufficient, value their own independence and work efficiency, and weaken their desire to establish connections with others and social groups. Research shows that merely thinking about money makes people less fair and helpful in interactions with others, more likely to ignore the impact of social exclusion, and willing to put more effort into achieving personal goals (Vohs et al., 2006). Gino and Pierce (2009) found through a money-related experiment that college students were more likely to cheat in subsequent exams when seeing higher denomination bills (\$7,000) compared to lower denomination bills (\$24).

Additionally, Whillans and Dunn (2019) pointed out that money resources are external motivational sources for individuals to achieve goals. Therefore, individuals primed with money resource concepts more easily focus on short-term benefit acquisition and cost loss, while individuals primed with time resource concepts are more inclined to set long-term goals to obtain longer-term benefits and happiness. In summary, consumers who value money resources reduce their need for social relationships, increase their focus on self-interest, and consider less the impact of their behaviors on others and society, thereby reducing their interest and preference for green products or services. Accordingly, we propose:

Proposition 2: Valuing money resources inhibits individuals' green consumption behavior.

In the experimental design of Sub-Study 1, we use conceptual priming to manipulate subjects' thinking about time and money resources. Specifically, subjects are required to complete a scrambled-words task. Subjects are given 15 sets of scrambled words, each containing 4 words, and must select 3 words from each set to form a coherent sentence (Mogilner, 2010). In the time concept priming group, each set revolves around time-related words for combination; for example, "time, charge, pass, swift" can form "time passes swiftly." In the money concept priming group, each set revolves around money-related words for combination; for example, "cash, tissue, channel, circulation" can form "cash circulation chan-

nel.” To test whether the priming is successful, after the scrambled-words task, subjects must answer two manipulation check questions: “This task made me think of time (vs. money)” and “After completing the sentence task, I think time (vs. money) is an important resource to me” (1 = strongly disagree, 7 = strongly agree). After completing the conceptual priming of resource type, subjects are randomly shown a product from a virtual brand (green vs. non-green). For green products, low-carbon, environmentally friendly, and sustainable features should be highlighted in the title, logo, and product functions; for example, “Organic pure milk, derived from nature, focused on ecology, zero-pollution production process.” Non-green products mainly emphasize the product’s functional attributes; for example, “Organic pure milk, pursuing quality, focused on health, rich in protein and other nutrients.” Finally, after reading the product information, subjects use scales to measure their purchase intention.

3.2 Sub-Study 2: The Mediating Mechanisms of Construal Level and Values

Construal level theory is a recently developed social cognition theory whose core viewpoint is that individuals have different psychological representations of events. One is abstract representation, or high-level construal, which is decontextualized, abstract, central, essential, and goal-related; the other is concrete representation, or low-level construal, which focuses on event details and context, being concrete, superficial, secondary, and process-related. The abstractness or concreteness of construal level depends on the psychological distance people perceive from cognitive objects; different psychological distances affect people’s judgments and decisions through construal level.

Currently, research has begun to predict consumers’ prosocial behaviors from the perspective of construal level theory. Wang et al. (2017) believe that greater psychological distance enables individuals to see “the whole forest” (social interests); conversely, close distance is often attracted by “a single tree” (personal interests), often “cannot see the forest for the trees,” resulting in benefit myopia. Therefore, high-level construal enables people to rely more on global information and make decisions for overall interests, while low-level construal individuals tend to use local information and make choices based on personal interests.

MacDonnell and White (2015) found that consumers think more concretely when processing money resource-related concepts and more abstractly when processing time resource-related information. This is mainly because money resource concepts are relatively more concrete, easier to measure, and compare than time resource concepts. Additionally, time is usually associated with more abstract concepts, such as happiness, awe, and other emotionally-driven vocabulary (Aaker et al., 2011; Rudd et al., 2012); whereas money is more closely connected to concrete concepts requiring analytical drive, such as survival and work (Vohs et al., 2006; Zhou et al., 2019).

According to construal level theory, how people feel and think about things is affected by psychological distance, depending on individuals' subjective experience of distance from things (Trope & Liberman, 2010). More specifically, when individuals perceive things as distant, they tend to think about the specific features of things in an abstract way, activating high-level construal; when they believe things are close to themselves, they activate low-level construal and adopt concrete thinking patterns to represent objects (Trope & Liberman, 2003). Based on the above analysis, we propose that priming consumers' time resource concepts activates abstract high-level construal, thereby promoting green consumption; conversely, priming consumers' money resource concepts activates concrete low-level construal, thereby inhibiting green consumption. Accordingly, we propose:

Proposition 3: Valuing time resources promotes individuals' green consumption behavior, with high-level construal playing a mediating role; valuing money resources inhibits individuals' green consumption behavior, with low-level construal playing a mediating role.

Consumers' decision-making behaviors are also influenced by human values (Schwartz & Bilsky, 1987). Values are important factors guiding consumers' daily lives. For example, people usually prefer products or brands consistent with their own values (Torelli et al., 2012). Schwartz (1992) proposed a human values model with ten motivationally distinct values, which are further divided into four higher-order types: self-transcendence values, self-enhancement values, conservation values, and openness values. Among them, self-transcendence and self-enhancement are a pair of motivationally conflicting values that independently affect consumers' decision-making behaviors (Liu et al., 2022). Specifically, self-transcendence values emphasize reducing individuals' focus on self-importance and taking improving others' and society's well-being as ideals and beliefs, mainly including sub-values promoting collective interest goals such as responsibility, care, environmental protection, and helpfulness. In contrast, self-enhancement values reflect individuals' emphasis on enhancing their own abilities and personal well-being, including sub-values promoting personal interest goals such as power, success, social status, and influence (Schwartz & Sagiv, 1995). Yan et al. (2023) introduced self-transcendence and self-enhancement values into sustainable consumption research, finding that when consumers prioritize self-transcendence values, awe emotion is more effective in promoting green consumption behavior, whereas when consumers prioritize self-enhancement values, pride emotion plays a more significant role in enhancing green consumption behavior.

Since valuing time over money increases consumers' reflection on self-worth and makes them more aware of the impact of their behavioral patterns on society and others, time resource orientation activates individuals' self-transcendence values, prompting consumers to prioritize and help others and cultivate good social relationships in life (Lee-Yoon & Whillans, 2019). Therefore, when time resource-oriented consumers engage in pro-environmental green consumption activities, their pursuit of self-transcendence values encourages them to make more

product purchase decisions that contribute to the social environment and helps them obtain more satisfaction and happiness in green consumption. Conversely, consumers who value money resources more, out of consideration for maximizing economic value, are more likely to activate self-enhancement individual values, thereby increasing self-focus, prioritizing personal interests and achievements, and reducing connections with social groups (Whillans et al., 2015). Therefore, when money resource-oriented consumers participate in pro-environmental green consumption activities, influenced by self-enhancement values, they reduce participation in green consumption behaviors that enhance others' welfare or increase their own costs and reduce the satisfaction and happiness they obtain from them. Accordingly, we propose:

Proposition 4: Valuing time resources promotes individuals' green consumption behavior, with self-transcendence values playing a mediating role; valuing money resources inhibits individuals' green consumption behavior, with self-enhancement values playing a mediating role.

Sub-Study 2 plans to conduct four laboratory experiments. Studies 2a and 2b verify the mediating mechanism of construal level, while Studies 2c and 2d verify the mediating mechanism of values. Specifically, after completing the resource concept priming task in Study 2a, subjects are shown a product from a virtual brand (green vs. non-green) and their product purchase preference is measured. Then, subjects' construal level is measured using the Behavioral Identification Form (BIF), which contains 25 activities, each with two different expression forms: one is a concrete description of the activity behavior, representing low-level construal; the other is an abstract expression of the activity behavior, representing high-level construal. For example, when introducing reading activities, the low-level construal behavior description uses "write things down item by item," while the high-level construal behavior description uses "improve work efficiency."

In Study 2b, measuring subjects' construal level is changed to manipulation to better understand the role of construal level in the process of resource type affecting green consumption. The specific experimental procedure is: first, use the previously developed time and money resource cognition scale to divide subjects into two groups; then, randomly manipulate construal level for both groups. In the high-level construal group, subjects are guided to think about the "why" question of "promoting and protecting the ecological environment" and are required to provide 4 different answers; when priming low-level construal, subjects are asked 4 times "how" to "promote and protect the ecological environment" and are also required to write 4 different answers. Finally, each subject sees two different types of products from a virtual brand (green vs. non-green) in the experiment and needs to make a clear choice between them. The order in which subjects see the products (left/right) is random.

Study 2c measures subjects' dominant value types using a values scale after priming resource types and measuring green product purchase behavior (Schwartz, 2017). Subjects must answer to what extent the following statements are similar

to themselves (1 = very unlike me, 7 = very like me). The self-transcendence values scale includes: “I think protecting the environment is important; I am committed to pursuing equality, justice, and protecting all people; I can accept and understand people different from myself; I will work hard to improve the welfare of group members.” The self-enhancement values scale mainly includes: “My definition of success mainly depends on social standards; I will gain power by controlling others; I will gain power by controlling material and social resources.”

Similarly, Study 2d changes the measurement of self-values to manipulation. Specifically, after dividing subjects into time-oriented and money-oriented groups using the resource cognition scale, subjects are randomly shown posters with different values and product types. The green product group emphasizes the product’s environmental features and contributions to improving the social environment; the non-green product group emphasizes the product’s use value and unique advantages over other products. Self-transcendence values can be activated by using slogans like “protecting the environment is everyone’s responsibility” and “we have the responsibility to protect our common home” in posters; self-enhancement values can be manipulated by emphasizing slogans like “be a better self” and “make influential choices” in posters. Finally, subjects’ value orientations and product purchase intentions are measured.

3.3 Sub-Study 3: The Moderating Role of Individual Factors

Compared to traditional non-green consumption, green consumption involves consumers’ trade-offs between personal interests and others’ interests. This is because green consumption brings better ecological environments and enhances social and others’ interests, which can be shared socially, but simultaneously requires individuals to pay additional effort and costs (spending money and time). Holmes et al. (2002) believe that most pro-environmental behaviors are based on egoistic considerations; when a self-beneficial choice appears, consumers are more inclined to participate in prosocial green consumption. Peattie (2001) also points out that consumers prefer green products that emphasize cost savings, but if consumers’ personal interests are harmed, they develop resistance to green products, affecting subsequent purchase decisions (Luchs et al., 2010). Other research supports that when purchasing green products, consumers pay more attention to environmental benefits than personal interests. Particularly, when consumers realize that purchasing green products can benefit society and others, they are more likely to sacrifice or give up some personal interests (Griskevicius et al., 2010). Furthermore, Peattie and Crane (2005) point out that compared to enhancing consumers’ personal interests, long-term goals that provide more future benefits for the next generation often have higher efficiency and better persuasive effects in promoting individual green consumption behavior.

White et al. (2019) propose that the trade-off between self-interest and altruism is a key factor affecting consumers’ sustainable behaviors. Ross and Milne

(2021) examined how consumers' trade-offs between egoism and altruism affect their consideration of product price, quality, and sustainability attributes in green consumption, finding that socially-oriented consumers pay less attention to self-interest-related product attributes such as price and quality and instead focus more on social-interest-related product sustainability attributes. Therefore, they show more positive green product purchase tendencies than self-oriented consumers. Additionally, scholars have explored ways to enhance individual green consumption intentions from a matching perspective. For example, Yang et al. (2015) proposed based on construal level theory that when the beneficiary of green consumption is society or others, abstract green advertising appeals better stimulate consumers' positive purchase intentions; when the beneficiary is the consumer themselves, concrete green advertising appeals produce better persuasive effects. Septianto et al. (2019) found that when promoting organic food, companies combining illustrations with altruistic appeals or matching photos with egoistic appeals can more effectively enhance green advertising effectiveness.

Previous research points out that priming money concepts stimulates consumers to engage in more egoistic behaviors; merely thinking about money makes people less helpful and fair in interactions with others (Vohs et al., 2006). Li et al. (2015) propose that money concepts activate individuals' egoistic self-schema, temporarily suppressing the guiding role of moral identity on behavior. In contrast, priming time concepts encourages consumers to engage in self-reflection. To maintain a positive self-image in social activities, they reduce the likelihood of engaging in dishonest behaviors and show more behaviors conforming to moral norms, such as being more generous in charitable donations (Gino & Mogilner, 2014). Additionally, time resources activate individuals' abstract thinking patterns. When green products emphasize benefits to others and society as a whole, matching with time resource-type cues more easily prompts consumers to generate positive product purchase intentions. Conversely, money resources activate individuals' concrete thinking patterns. When green products emphasize benefits to consumers themselves and their families, matching with money resource-type cues more easily prompts consumers to generate positive product purchase intentions. Accordingly, we propose:

Proposition 4: The altruism and egoism reflected in green consumption moderate the impact of time (vs. money) resource cues on green consumption. When green consumption emphasizes benefits to consumers' society and others, time resource-type cues more easily enhance consumers' green product purchase intentions; when green consumption emphasizes benefits to consumers themselves and their families, money resource-type cues more easily enhance consumers' green product purchase intentions.

Regarding the differences in benefit appeals of green consumption, this study proposes that benefit trade-offs affect changes in consumers' emotional levels. Consumers' emotional response level mainly includes two dimensions: pleasure and arousal. Pleasure refers to the degree to which individuals feel happy, joyful,

or satisfied in specific situations (Mazaheri et al., 2012). Arousal refers to the activation degree to which individuals feel happy, joyful, or satisfied in specific situations (Russell & Fledman, 1999).

Research shows that emotional response level affects how consumers process and interpret information, thereby guiding subsequent decision-making behaviors. When the personal benefit information that products want to convey matches consumers' thinking patterns and psychological needs, it more easily brings higher levels of pleasure and emotional arousal, thereby generating more positive attitudes and purchase intentions toward the product. As mentioned above, green consumption emphasizing altruism focuses more on ecological environmental protection and social sustainable development. When priming individuals' time resource concepts in consumption situations, consumers' activated abstract thinking pays more attention to the long-term benefits of purchase behavior, matching better with green consumption information emphasizing altruism at the cognitive level. Similarly, green consumption emphasizing egoism focuses more on providing health and safety guarantees to consumers themselves and their families while benefiting environmental protection. When priming individuals' money resource concepts in consumption situations, consumers' activated concrete thinking pays more attention to immediate benefits from their own behaviors, matching better with green consumption information emphasizing egoism at the cognitive level. Accordingly, we propose:

Proposition 5: Emotional response level mediates the interactive effect of time (vs. money) resource priming and individual factors (egoism vs. altruism) on consumers' green product purchase intentions.

In the experimental design of Sub-Study 3, we use a different resource concept priming method from Sub-Study 1. Subjects in the time and money groups see pictures themed around time or money respectively and are required to describe the content in the pictures and write down thoughts triggered by seeing the pictures (Su & Gao, 2014). Manipulation checks are also conducted on subjects after the priming task. Subsequently, subjects are guided to randomly read stimulus materials emphasizing either egoistic or altruistic features of green products. For example, in the green product egoistic feature group, it emphasizes "This brand's environmentally friendly bamboo pulp natural color paper is green and healthy, using high-quality bamboo pulp to produce healthy good paper, with soft and comfortable texture, bringing you and your family a healthier and safer use experience." In the green product altruistic feature group, it emphasizes "This brand's environmentally friendly bamboo pulp natural color paper is green and environmentally friendly. The paper production process uses bamboo instead of wood to protect forest resources, does not add bleaching agents, can reduce environmental pollution, and the pure and degradable paper will not burden the ecological environment." Finally, after completing the reading task, subjects need to report their purchase intention for the brand's bamboo pulp natural color paper. The measurement of the mediating mechanism, emotional response level, references Mehrabian (1995) and Ge (2020)

and includes six questions: “Purchasing this product makes me feel (dissatisfied/satisfied, unhappy/happy, unhappy/happy, relaxed/excited, calm/excited, sleepy/awake).”

3.4 Sub-Study 4: The Moderating Role of Enterprise Nudging Strategies

Nudging has become an effective strategy for promoting green consumption. Compared to traditional environmental governance methods such as rewards and punishments, nudging’s advantage lies in that it does not require mandatory intervention measures or economic incentives but can prompt people’s decision-making behaviors to change in expected directions by providing appropriate choice architecture (He et al., 2018). Among many nudging strategies, setting default options is a relatively common method. Default options refer to options that individuals need to accept when they fail to make explicit decisions (Johnson & Goldstein, 2003). For example, Bonini et al. (2018) found that if the default option of printers on campus is changed from “single-sided printing” to “double-sided printing,” nearly 7 million pages of paper can be saved in one semester.

There are two main ways to set default options. One is that decision interveners need to pre-set target options as default opt-in, but consumers have the right to opt out. For example, environmentally friendly hotels provide green services to consumers by default (no daily room cleaning and new towel replacement during renewal periods), and consumers can actively request to turn off this green service (Theotokis & Manganari, 2015). The other does not pre-set default options and requires consumers to make explicit choices actively. For example, banks provide paper vouchers to consumers, but consumers can actively request electronic vouchers that better meet environmental requirements. Since consumers generally have choice inertia and prefer not to expend additional cognitive resources and effort when making choices, default opt-in option settings are more suitable for prompting consumers to complete the transformation from traditional consumption to green consumption habits imperceptibly. However, when consumers perceive high manipulation in default opt-in option settings, it also reduces their active participation in environmental protection to some extent. Therefore, giving consumers more choice rights and control, encouraging them to actively participate in green consumption nudging methods is more effective (Robinson et al., 2012).

People’s value judgments of time resources have certain ambiguity, causing consumers to rely more on overall memory and experience for judgment and decision-making when processing this ambiguous, difficult-to-process time resource information (Epstein et al., 1996; Saini & Monga, 2008). Okada and Hoch (2004) found that precisely because consumers use experiential systems to infer time resource value more ambiguously and difficultly, they are more willing to invest time resources in high-risk and high-return decisions. The opposite is true when making investment decisions related to money resources.

Tong et al. (2013) found that priming individuals' money resource concepts prompts them to adopt more harm-avoidance-oriented goal systems, focusing more on how to avoid losses, and thus tend to pursue safety and functional goals in consumption choices (Li et al., 2016). Based on the above analysis, consumers influenced by time resource cues more easily make decisions based on intuition, emotion, and other irrational factors; their cognition of costs is more ambiguous, and they are more willing to accept high-risk, high-return choice decisions. At this time, green consumption through encouraging consumers to actively choose nudging methods is more conducive to enhancing consumers' willingness to participate in green consumption. Conversely, consumers influenced by money resource cues tend more to make decisions using analysis, non-emotion, and other rational factors; their cognition of costs is clearer, and they are less willing to accept higher-risk choices. At this time, using default opt-in forms for green consumption nudging methods can reduce additional cognitive resources needed in information processing, which is more conducive to enhancing consumers' willingness to participate in green consumption. Accordingly, we propose:

Proposition 6: The choice of enterprise nudging methods moderates the impact of time (vs. money) resources on green consumption. When enterprises provide active-choice green consumption modes, time resource-type cues more easily enhance consumers' green product purchase intentions; when enterprises provide default opt-in green consumption modes, money resource-type cues more easily enhance consumers' green product purchase intentions.

Regarding differences in enterprises' nudging method settings, this study proposes that the choice of green consumption participation methods affects the realization of consumers' environmental self-standards. Environmental self-accountability refers to individuals' motivation to practice self-standards in the field of environmental protection behavior (Peloza et al., 2013). In the green consumption field, when consumers' motivation to practice environmental self-standards is higher, individuals' environmental self-accountability is also stronger.

Green products or services can enhance individuals' environmental self-standards by conveying information, thereby prompting consumers to generate higher levels of environmental self-accountability. As mentioned above, consumers primed with time resource concepts have stronger approach motivation; enterprises using active-choice nudging methods to encourage consumers to independently choose to activate products' environmental protection modes better matches their cognitive styles. Consumers primed with money resource concepts have more obvious harm-avoidance motivation; enterprises presenting products' environmental protection modes as recommended options, that is, using default opt-in nudging methods to encourage consumers to show more environmental protection behaviors, better matches the cognitive thinking of consumers primed with money resource concepts. We believe that when nudging methods match individual cognition or thinking patterns, they can

more effectively enhance consumers' environmental self-accountability levels, thereby prompting them to generate positive attitude evaluations and purchase intentions toward green products.

Proposition 7: Environmental self-accountability mediates the interactive effect of time (vs. money) resource priming and enterprise nudging methods (active choice vs. passive opt-in) on consumers' green product purchase intentions.

In the experimental design of Sub-Study 4, we attempt to combine resource type concept priming with product or service information (Mogilner & Aaker, 2009) and use environmentally friendly hotel services as experimental stimuli different from previous studies. Specifically, in the time group's service introduction information, it prompts "Please spend a little time experiencing the green service mode," while in the money group's service introduction information, it prompts "Please spend a little money experiencing the green service mode." Additionally, through product information provided by online travel platforms, we combine them into two versions of green nudging information: active and passive. Both experimental material groups contain introductions to green service modes: "When the green service mode is activated, the hotel will no longer provide disposable daily necessities, provide degradable bagged environmentally friendly towel sets, and automatically exempt renewal cleaning services." The difference is that the active choice group emphasizes "The hotel's green service mode's initial status is default opt-out; you can contact the front desk to adjust according to personal needs," while the passive participation group emphasizes "The hotel's green service mode's initial status is default opt-in; you can contact the front desk to adjust according to personal needs." Finally, after completing the reading task, subjects need to report their booking intention for the brand's environmentally friendly hotels. The measurement of the mediating mechanism, environmental self-accountability, includes five questions: "At this moment, I feel I have great responsibility for environmental protection," "At this moment, my motivation to undertake social responsibility is very strong," "At this moment, I think environmental sustainable development has little to do with me," "At this moment, I very much want to contribute to environmental protection through my own actions," "At this moment, I think I have the obligation to care for the natural environment" (Peloza et al., 2013; Wu, 2014).

3.5 Sub-Study 5: The Moderating Role of Product Innovativeness

To better meet consumers' demands for green products' environmental value and functional value, enterprises need to continuously conduct product innovation. Compared to traditional product innovation, green innovation emphasizes adopting new technologies and concepts to achieve efficient resource utilization and effective pollution reduction (Xie & Zhu, 2021). However, some research points out that product innovation for green consumption comes at the expense of traditional functional advantages, increasing consumers' risk perception (Lin et al., 2013). Since some attributes and features are more important than oth-

ers for consumers' product evaluation, enterprises can either add green elements to green products' central attributes or make green improvements to products' peripheral attributes.

Traditional product innovation focuses more on central attributes, i.e., attributes related to products' core functions, such as the engines of new energy electric vehicles and main additive ingredients of environmentally friendly laundry detergent. In contrast, peripheral attributes have lower coupling with other parts of products compared to central attributes. Therefore, innovating peripheral attributes does not substantially affect products' core functions (Newman et al., 2014). Specifically, suppose two companies simultaneously launch new products with environmental features—laptop computers—both claiming that by using recyclable materials, each computer can reduce 37.8 cubic meters of waste annually. The difference is that one laptop's environmental feature is reflected in the central processing unit, while the other chooses to replace the sound card with recyclable materials. Gershoff and Frels (2015) believe that consumers' perception of these two laptops' greenness depends on whether companies choose to conduct green innovation on products' central or peripheral attributes.

Time resource concepts are usually associated with consumers' emotional utility maximization because time resources have lower substitutability; lost time cannot be compensated, and people feel stronger pain from losing time compared to losing money (Leclerc et al., 1995). Therefore, when consumers consider time-related factors, they more easily evoke attention to emotional needs, making them more focused on products' long-term environmental benefits in green consumption processes. At this time, companies choosing to conduct green innovation on products' central attributes better meets consumers' psychological needs because emphasizing products' green attributes can meet consumers' requirements for ecological environmental protection and long-term sustainable development, enhancing enterprises' social image and reputation. When consumers perceive higher greenness and environmental value of products, they are more likely to generate positive purchase and use intentions (Gershoff & Frels, 2015). Compared to time resources, priming money resource concepts more easily activates consumers' thinking of maximizing economic value because money resources themselves are more closely related to product value acquisition; thinking about money resources inhibits people's desire for emotional needs, prompting them to focus more on the actual utility brought by products in green consumption processes. At this time, companies choosing to conduct green innovation on products' peripheral attributes better meets consumers' goal pursuits, i.e., reducing the impact of green environmental attributes on product quality and performance, which can better enhance consumers' green consumption intentions. Accordingly, we propose:

Proposition 8: Companies' choices of green product innovativeness moderate the impact of time (vs. money) resources on green consumption. When companies conduct central green innovation, time resource-type cues more easily

enhance consumers' green product purchase intentions; when companies conduct peripheral green innovation, money resource-type cues more easily enhance consumers' green product purchase intentions.

Regarding differences in green consumption product innovativeness, this study proposes that value assessment affects consumers' attention to product effectiveness. Perceived product effectiveness refers to consumers' subjective inference about whether a product's use effect meets expectations (Lin & Chang, 2012). Existing research shows that increasing perceived product effectiveness has a positive impact on improving consumers' attitudes and purchase intentions toward green products (Usrey et al., 2020).

As mentioned above, emphasizing central innovation in green consumption has higher greenness, but also increases concerns about product risk. Such products are more suitable for consumers driven by emotional needs who value time resources. When facing consumers driven by value needs who value money resources, companies launching green products with peripheral attribute innovation can meet green environmental requirements while ensuring traditional functional attributes are unaffected, better meeting consumers who focus on their own interests. When the information conveyed by product innovation methods matches individuals' thinking patterns, it can effectively enhance consumers' perception of green product effectiveness, thereby prompting them to generate positive purchase intentions toward green products. Accordingly, we propose:

Proposition 9: Perceived product effectiveness mediates the interactive effect of time (vs. money) resource priming and product innovativeness (central vs. peripheral) on consumers' green product purchase intentions.

In Sub-Study 5, the experimental design uses the same resource concept priming method as Study 1. Subsequently, subjects are guided to randomly read stimulus materials about green products with different innovativeness. For example, the central innovation group emphasizes "This brand's laundry detergent has made green innovations to product ingredients, using innovative plant extraction technology, extracting multiple plant raw materials, with pure natural environmentally friendly formulas rich in natural active ingredients, gentle and skin-friendly without irritation, green and environmentally friendly without residue." The peripheral innovation group highlights green innovations to products' non-core attributes, emphasizing "This brand's laundry detergent has made green innovations to product packaging, using innovative plant ecological bottle packaging. The bottle body uses 75% plant-based plastic and 25% renewable plastic. The packaging bottle is recyclable and reusable, being friendly to the ecological environment." Finally, after completing the reading task, subjects need to report their purchase intention for the brand's green laundry detergent. The measurement of perceived product effectiveness includes four items: "This product has good effects during use," "This product is an effective product," "Products with environmental protection functions usually have low effectiveness (reverse scored)," and "There is no situation where this product is both

environmentally friendly and effective (reverse scored)” (Chen & Chiu, 2016). To ensure the quality of online questionnaire responses, attention check items can be added to the test, such as asking subjects to recall the product’s features after reading product information to screen whether subjects carefully complete reading tasks.

3.6 Sub-Study 6: The Moderating Role of Product Typicality

Product typicality is defined based on the degree to which a product represents a certain product category (Mervis & Rosch, 1981). For example, orange juice is considered more representative than guava juice; therefore, orange juice can be regarded as a typical product in the fruit juice category. Loken and Ward (1990) proposed another classification standard: selection frequency, i.e., when a product is selected with higher frequency, it is determined as a typical product in that category. Typical products lack unique features (e.g., traditional cars) and mainly target mass markets, while atypical products can meet market demands for uniqueness (e.g., hybrid vehicles). Huang and Sengupta (2020) explored how exposure to disease-related cues affects consumers’ preferences for typical (vs. atypical) products based on the behavioral immune system theory (BIS) in the context of the pandemic. Their research found that due to avoidance motivation for infectious diseases, consumers prefer atypical products associated with few people rather than typical products associated with many people.

In real life, there are many types of green products, including automobiles, home appliances, and personal care products. Consumers tend to rely on single categories to infer product attributes. In this process, consumers’ previously held mental representations affect their evaluation processes. When their subjective judgments and psychological perceptions of a product type are consistent, it is more conducive to enhancing consumption intentions. Previous research points out that consumers’ attitudes toward sustainable green products are not entirely positive. For example, Newman et al. (2014) found that consumers usually believe that enterprises’ green innovation or adding green product attributes requires sacrificing traditional product advantages as a prerequisite. Usrey et al. (2020) proposed that typical and atypical products also exist in green product categories, and product category and green attributes jointly affect consumers’ product evaluation and purchase intentions. More specifically, when consumers infer that a product belongs to typical green products (green products are relatively common in this product type), using direct and obvious environmental protection slogans in green product innovation makes it easier for consumers to generate cognitive consistency, i.e., typical green products with higher green attributes generally do not affect consumers’ perception of products’ traditional functions, thus more easily generating relatively positive attitude evaluations and purchase intentions.

As mentioned above, time resources cannot be accumulated, exchanged, or generated; thinking about time resources makes people value social interaction more

and pay attention to commonalities between things (Reutner & Greifeneder, 2018). Since typical green products in the market are generally common products that conform to consumers' green cognition, such as fluorine-free air conditioners and phosphorus-free detergents, these products often represent the choice tendencies of most people, better matching the internal motivation of valuing social interaction triggered by time resources. Money resources are usually related to status, power, and independence; increasing consideration of money resources reduces individuals' desire and possibility to interact with others (Vohs et al., 2016). Since typical, common green products more easily bring consumers psychological perceptions of environmental protection, altruism, and prosocial behavior, they do not match the cognitive thinking of consumers who value money resources. Emphasizing the atypicality and uniqueness of green products better meets consumers' needs for novelty, status, and reducing connections with others. Accordingly, we propose:

Proposition 10: Companies' choices of green product typicality moderate the impact of time (vs. money) resources on green consumption. When companies launch typical green products, time resource-type cues more easily enhance consumers' green product purchase intentions; when companies launch atypical green products, money resource-type cues more easily enhance consumers' green product purchase intentions.

Furthermore, this study believes that perceived product effectiveness also mediates the interactive effect of time (vs. money) resource priming and product typicality (typical vs. atypical) on green product purchase intentions. Specifically, green consumption emphasizing product typicality represents the choice of most people and also makes it easier for consumers to generate expectations for green products' environmental attributes. At this time, priming individuals' time resource concepts in consumption situations, out of motivation to establish connections with others and society and expectations for products' green attributes and environmental functions, consumers perceive higher fluency when processing green product information. Similarly, green consumption emphasizing product atypicality reflects the choice of few people and also reduces consumers' expectations for products' environmental attributes to some extent. The pursuit of product uniqueness means that atypical green products better enhance consumers' attitudes and evaluations of product effectiveness, thereby prompting them to generate positive purchase intentions toward green products. Accordingly, we propose:

Proposition 11: Perceived product effectiveness mediates the interactive effect of time (vs. money) resource priming and product typicality (typical vs. atypical) on consumers' green product purchase intentions.

In Sub-Study 6, we use the same resource concept priming method as Sub-Study 1. Subsequently, subjects are guided to randomly read stimulus materials describing typical (vs. atypical) green products. For example, the typical group emphasizes "This green product is very common among personal care products. The latest industry report shows that more than 50% of manufacturers provide

environmentally friendly pure natural shampoo.” The atypical group highlights the uniqueness of green products in the industry; for example, “This green product is not common among personal care products. The latest industry report shows that less than 10% of manufacturers provide environmentally friendly pure natural shampoo.” Finally, after completing the reading task, subjects need to report their purchase intentions and perceived product effectiveness for the brand’s green personal care products.

4. Theoretical Construction and Research Significance

As two important resources in daily life, time and money have profound impacts on consumers’ decision-making behaviors and psychological well-being. However, previous research shows that time and money resources have distinctly different effects on consumers’ cognitive thinking and decision-making behaviors when they appear as concepts (MacDonnell & White, 2015). Based on previous research, this study introduces time and money resources that consumers frequently encounter in daily life into green consumption research in conceptual forms, focusing on the driving mechanisms of green consumption behavior (as shown in Figure 1 [Figure 1: see original paper]).

On one hand, based on construal level theory and human values, this study analyzes the promoting effect of time resources on green consumption behavior and the inhibiting effect of money resources on green consumption behavior. Specifically, time resources more easily trigger consumers to generate abstract high-level construal and self-transcendence values, thereby prompting consumers to more easily focus on long-term environmental protection goals. In contrast, money resources more easily induce consumers to generate concrete low-level construal and self-enhancement values, thereby prompting consumers to focus more on immediate self-interests and neglect the importance of sustainable consumption. Therefore, different types of resources produce different or even opposite effects in promoting green consumption behavior. On the other hand, this study demonstrates the interactive effects of resource type (time vs. money) on green consumption behavior from three levels—individual factors, enterprise nudging, and product factors—and introduces emotional response level, perceived product effectiveness, and environmental self-accountability as mediating variables to construct a theoretical model of resource type’s impact on green consumption behavior. Since time and money resources essentially trigger different cognitive thinking patterns in consumers, when the benefit appeals, nudging methods, and product innovativeness and typicality of green consumption match consumers’ cognitive thinking patterns, they promote information processing consistency and fluency, thereby facilitating green consumption behavior.

Figure 1. Framework of This Study’s Model

The theoretical significance of this study lies in:

First, this study introduces time and money resources into research on the driv-

ing mechanisms of green consumption behavior, focusing on how consumers' thinking about time and money resources in daily life specifically affects their green consumption behavior. Although previous research pointed out that time and money resources have significant differences in influencing individual cognitive thinking and decision-making behavior, it did not apply these differences to specific consumption behaviors. This study believes that consumers' thinking about time resources promotes green consumption behavior through attention to long-term goals and collective interests, while thinking about money resources reduces green consumption willingness by increasing attention to short-term interests and personal goals. This study's conclusions establish connections between resource type and green consumption, not only deepening the understanding of how time and money resources affect consumer behavior but also enriching relevant research on time and money resources in the green consumption field, providing new ideas for analyzing key factors influencing green consumption behavior.

Second, this study reveals the mediating roles of construal level and values in the process of time and money resources affecting green consumption behavior. Compared to the substantive features of money resources that can be calculated, accumulated, and exchanged, time resource concepts are more abstract and difficult to describe. Therefore, when consumers think about time resources, they more easily activate high-level construal and focus on long-term, abstract goals, while consideration of money resources activates low-level construal and focuses on short-term, concrete attributes. Additionally, attention to time resources activates consumers' self-transcendence values, prioritizing society and others' welfare over individuals, while attention to money resources activates consumers' self-enhancement values, placing personal gains before collective interests. Compared to traditional non-green consumption, green consumption is more environmentally friendly and sustainable, more conducive to ecological environmental protection and restoration, and can bring better living environments and development space for future generations. However, the cost of green consumption is immediate, while the welfare brought to society and the environment cannot be seen in the short term. Therefore, high-level construal and self-transcendence values triggered by time resources better help consumers understand the abstract, long-term, prosocial benefits of green consumption, while low-level construal and self-enhancement values triggered by money resources better guide consumers to focus on the concrete, short-term cost burdens and negative impacts on personal welfare brought by green consumption. This study clarifies the logical relationships between resource type, construal level, human values, and green consumption and verifies the mediating roles of construal level and values through experimental design and questionnaire surveys, thereby providing theoretical basis and empirical evidence for deeper understanding of how resource type affects green consumption behavior.

Third, this study discusses from the perspective of individual factors how resource type affects green consumption behavior when green consumption emphasizes different benefit appeals. The externality characteristics of green consump-

tion determine that it can both satisfy consumers' own interests and needs and bring welfare improvements to others and society as a whole. However, previous research on green consumption egoism and green consumption altruism has not reached consistent conclusions. This study's inference finds that consumers' perception of green product benefit appeals is related to how resource type activates individual cognitive thinking. Specifically, when green consumption emphasizes the benefits of products or services to society or others, using time resource cues to activate consumers' abstract thinking better enhances their attitude evaluations and purchase intentions toward green products or services. Meanwhile, when green consumption emphasizes that products or services satisfy consumers' personal or family interests, using money resource cues to activate consumers' concrete thinking better enhances their attitude evaluations and purchase intentions toward green products or services. This provides new research directions for better using resource cues to meet differentiated green consumption benefit appeals. Additionally, this study proposes that trade-offs of green consumption benefit appeals affect consumers' emotional response levels. When benefit information emphasized in green consumption matches the cognitive mode activated by resource type, it can promote green consumption by enhancing emotional response levels, thereby discovering new paths for researching the psychological mechanisms of green consumption behavior.

Fourth, this study explores from the enterprise nudging perspective how resource type affects individuals' participation methods in green consumption. Compared to traditional consumption modes, green consumption brings consumers new experiences while also requiring consumers to develop habits of actively participating in green consumption. According to enterprises' default option settings, there are two main ways for consumers to participate in green consumption: one is passive participation, where enterprises set default opt-in options, defaulting consumers to choose green products or services, thereby imperceptibly cultivating consumers' green consumption intentions; the other is active participation, where enterprises provide options for green products or services, encouraging consumers to make active choices. Research shows that nudging is beneficial for cultivating individuals' green consumption lifestyles, but there is no deeper discussion on consumers' preference degrees for active choice or passive acceptance. According to this study's inference, the choice of enterprise nudging methods can be adjusted based on the importance consumers perceive in resource cues. Specifically, when enterprises set nudging methods encouraging consumers' active participation, using time resource cues to activate consumers' experiential processing systems better enhances their attitude evaluations and purchase intentions toward green products or services. Meanwhile, when enterprises set nudging methods encouraging consumers' passive opt-in, using money resource cues to activate consumers' rational processing systems better enhances their attitude evaluations and purchase intentions toward green products or services. Additionally, this study proposes that trade-offs of green consumption participation methods affect consumers' environmental self-accountability. When the choice method emphasized in green consumption

matches the cognitive mode activated by resource type, it can unconsciously promote green consumption by enhancing environmental self-accountability, thereby further enriching relevant research in the green consumption field.

Fifth, this study analyzes from the perspective of green product features how individuals' cognition of resource types affects green consumption. On one hand, to better meet consumers' constantly evolving product demands, enterprises need to continuously update and iterate green products' functional attributes. According to this study's conclusions, when enterprises conduct central innovation of green products, consumers perceive higher greenness but also increased concerns about product risk. Such products are more suitable for consumers driven by emotional needs who value time resources. When facing consumers driven by value needs who value money resources, enterprises launching green products with peripheral attribute innovation can meet green environmental requirements while ensuring traditional functional attributes are unaffected, better meeting consumers who focus on their own interests. On the other hand, every industry has typical and atypical products, and the green consumption market is no exception. However, previous research rarely focused on consumers' purchase behaviors toward typical vs. atypical green products. According to this study's conclusions, typical green products are associated with most consumers in the market, and consumers who value time resources are more willing to establish connections and commonalities with others in society. In contrast, atypical green products are the choice of few enterprises in the industry, being more unique, and consumers who value money resources are less willing to establish connections with others in society. Compared to typical green products chosen by most people, they are more willing to purchase atypical green products out of status, identity, and conspicuousness motivations. Additionally, this study proposes that trade-offs of product innovativeness and typicality affect consumers' value perception of green products. When product innovativeness and typicality emphasized in green consumption match the cognitive mode activated by resource type, they can promote green consumption by enhancing product effectiveness perception. This study combines the impact of time and money resources on consumers' cognitive thinking with specific product types in the green consumption market, revealing the mediating role of product effectiveness perception in this process, analyzing, understanding, and predicting consumers' green consumption behavior from a new perspective.

Since previous research tended to examine how to consciously influence individuals' green consumption behavior, in practical application, it easily makes consumers aware and generates a perception of being manipulated, thus failing to achieve the goal of promoting green consumption well. Time and money are very common and important resource types in consumers' daily lives, and they have completely different effects on consumers' cognitive thinking and decision-making behavior. Therefore, using time and money resource cues in consumption situations can, without consumers' awareness, enhance their attitude evaluations and purchase intentions toward green products or services by matching appropriate green marketing strategies. This study demonstrates the

effects of time and money resources on green consumption, reveals the mediating roles of construal level and values, and specifically analyzes the positive roles and internal mechanisms of different resource types when enterprises adopt green product marketing strategies, constructing a theoretical model of resource type's impact on green consumption behavior. The research results not only help further enrich and expand relevant research on time and money resources in the green consumption field and provide new ideas for future experimental design but also provide theoretical basis for enterprises to better apply the matching relationship between resource cues and green consumption in green marketing practice.

Note: Figure translations are in progress. See original paper for figures.

Source: ChinaXiv — Machine translation. Verify with original.