

# Analysing the Costs Faced by Consumers in the Consumer Market-A Framework for Analysing Consumption

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**Abstract:** Upgrading the consumption structure is an important condition for achieving sustainable economic growth. On the basis of reviewing the frontier research on consumption cost at home and abroad, this paper gives an overview of the connotation of consumption cost and analyses its impact on consumption; at the same time, combining with the development trend of the digital economy, it tries to introduce the rational negligence theory into the consumption cost, and analyses the theoretical mechanism of the impact of consumption cost on the upgrading of the consumption structure from the perspective of rational negligence.

**Keywords:** Consumption Structure; Consumption Cost; Rational Negligence

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## 1.Introduction

Consumption is the basis of economic growth and, moreover, the engine that drives economic growth. In recent years, with the continuous upgrading of China's consumption structure, there has been an increasing number of studies on the trend of changes in the consumption structure, influencing factors and growth effects. Compared with the research on total consumption, which focuses on the long-term and overall, consumption structure pays more attention to the characteristics of consumption at different stages of development, and to the changes in consumer choice mechanisms behind the upgrading of consumption structure.

In traditional economic analysis, cost is the basis for analysing the economic behaviour of manufacturers in their pursuit of profit maximisation, and is at the heart of manufacturer theory; however, existing consumer theory research, which tends to focus on discussing the impact of income, has largely ignored the role of cost on consumer utility and consumption choices. In fact, consumers often spend more than they earn (Kappes et al, 2021), and the total value of resources spent on the consumption process far exceeds the purchase price of the goods or services, which is essentially the cost of consumption. In the 1930s Keynes put forward the concept of the consumption function and the absolute income hypothesis, in which the institutions, traditions, and capital-technological equipment determine the distance between consumers and goods. In the 1950s, Modigliani, Brumberg and Friedman followed Keynes's series of assumptions and, on the basis of them, put forward the life-cycle model of consumption and the model of persistent income, respectively, which enriched the concept of "income".

In the 1970s, Lucas's rational expectations hypothesis and Hall's random walk model emphasised the importance of the past consumption. Random walk model highlighted the irrational expectations and uncertainty under the rational man assumption that had been neglected in the past consumption theories, and Hall argued that there are other factors affecting consumption other than income, and since then the critique of rational expectations has given rise to the theory of rational negligence. In fact, the traditional consumption theory involves income only as the wealth that can pay for the price of consumer goods, without considering the constraints of other costs in consumption behaviour on the structure of consumption, and after the mid-1980s, the theories of "oversensitivity" and "oversmoothness" were proposed, and the random walk hypothesis was challenged. After the mid-1980s, the "oversensitivity" and "oversmoothness" theories were proposed to challenge the random walk hypothesis. In particular, the theoretical hypothesis of liquidity constraints, which led to the validation of a large number of empirical hypotheses, has led to a situation in which individuals actually consume less than they are expected to consume, and the path of consumption is no longer smooth. As a result, most of the attention of researchers other than income has been focused on credit constraints on consumption, ignoring the role of other factors in reality that constrain consumption.

In the early 21st century, Sim (2003) formalised the theory of rational negligence and argued that rational negligence exists in all aspects of the economy, including consumption. As the information acquired in consumption is beyond the scope of consumers' processing ability, thus they rationally choose to ignore part of the information, leading to different consumption behaviours. The degree of difficulty in acquiring and processing information varies greatly between different types of consumption, and rationally negligent behaviour towards different consumption leads to different consumption structures. Considering the data collection, analysis and decision-making prior to the implementation of the behaviour, and recognising the constraints of information acquisition and processing on consumption behaviour, the rational negligence theory is closer to reality than the rational man hypothesis. In traditional theories of consumption, changes in consumption are mainly a quantitative reflection of consumer income, Hamilton & Griskevicius (2019) viewed monetary expenditure as a cost of consumption to study the impact of financial constraints on consumer behaviour, and Payne (1982) verified the relationship between inputs and outputs in the consumption process through a cost-benefit framework, which all using monetary units of consumption as the cost of inputs. The rational neglect theory further takes into account the constraints paid by consumers to process and react to information. Watkins & Knight (1922) argued that if the cost of considering and estimating the disposable income for consumption exceeds the value of the consumer goods, consumer behaviour will no longer be rational. In this case, it is necessary to introduce consumption costs to carry out further research. However, most of the existing research on the cost of consumption is only fragmented and singularly centred around one part of it, for example, Rocklage & Nordgren (2021) examined the cost of emotional numbness in the consumption process without being supported by a unified, anchored definition or theory. Based on the rational negligence theory, Liraya (2011) found that due to the limited attention span of an individual and the limited ability of an individual to process information and the slow updating of information by the consumer, thinking about decision making, transport, and communication gaming also incur costs in the consumption process, but these costs are difficult to be measured in monetary terms. From the perspective of economics, consumers will rationally allocate their resources in order to maximise their utility, and estimate the cost of the resources they expect to spend, and consider how to reduce the cost of consumption through rational arrangements in order to increase the utility of consumption. From the perspective of the relationship between income, cost and consumption, disposable income is proportional to the consumption budget, so that the budget constraints formed by income on consumption will gradually weaken with the continuous increase of disposable income (income effect declines), but on the contrary, the cost of the consumption process in order to obtain the goods, information decision-making in advance of the cost of the final consumption of net utility is directly affecting the net utility of the final consumption (the cost effect rises), the effect on the The impact of changes in the structure of consumption is obvious. Therefore, to explain changes in the consumption structure at different stages of development, an analysis of consumption costs that incorporates both monetary expenditures in the pre-consumption period as well as the costs of other resource expenditures is needed. At this point, the cost of consumption is not limited to monetary expenditure, but is the cost, excluding the price of goods, that consumers pay to allocate their own resources and to implement consumption in order to obtain a certain consumption utility.

The structure of this paper is arranged as follows: in the second part, we review the frontier literature on consumption cost research, analyse the concept and connotation of consumption cost, and explore the measurement of consumption cost; in the third part, we analyse the accelerating and heterogeneous effects of consumption cost on the upgrading of the consumption structure from the perspective of rational neglect; in the fourth part, we explore the interrelationships between the digital economy and consumption cost from the perspectives of digital technology, digital products and digital ecology; in the fifth part, we review the relevant literature and elaborate the current topics that still need in-depth research. In the fifth part, it reviews the related literature and elaborates the current topics that still need in-depth research.

The marginal contribution of this paper lies in expanding the concept of consumption cost and examining the influencing factors of the upgrading of consumption structure as well as the theoretical mechanism behind it from the perspective of consumption cost. On the basis of existing research on consumption cost, the relationship between consumption cost and the digital economy is discussed from the perspective of rational negligence, taking into account the impact of changes in institutions, technology and capital on rational negligence in the digital economy, and the impact of consumption cost on the upgrading of the consumption structure in the context of the digital economy is further explored.

## **2.The nature of consumer costs: decision-making and access**

### **2.1 Study of the impact of consumption costs**

Costs are a category of value in a commodity economy category of value that is the value of commodities component of a commodity. Broadly speaking, the effort exerted by the producer is known as the cost of production and is the most obvious cost and relative to the price. Adam Smith in *The Wealth of Nations* mentions that 'the true cost of a given commodity to any one who desires to obtain it, is the toil which must be expended to obtain it' (1776, p. 21 ). The effort and price that a consumer has to pay to perform a certain consumption behaviour and acquire the value of a good is then the cost to the consumer, and this consumption cost includes both some of the transaction costs of the consumption process and the non-transaction costs of the consumer himself. In a consumer market with a low level of economic development, with a single form of consumption, asymmetric information, and limited consumer power, the costs borne by merchants are transferred to the price of consumer goods, and the expenditures for the actual purchase of goods or services by the consumer include both the production costs of goods and services, as well as a variety of consumer costs, including consumer searches, acquisition of information, and consumer decision-making. However, with the development of the consumer market, some of the corresponding costs are separated from the price of goods, and some services that help decision-making and consumption gradually develop into independent commodities. Kozinets & Ashman (2017) point out that with the development of the commodity economy and the consumer market, the concern for consumption costs began to rise, and extends to a series of consumption costs due to the relationship between limited income and the desire to consume. contradiction brought about by a range of consumption costs. Galbi & DA (2001) used empirical evidence to analyse the impact of different pricing methods and acquisition and switching costs on the elasticity of demand for a given product in long distance telephone services in the US. Thus, although monetary expenditures are easiest to quantify in the actual consumption process, consumption costs excluding commodity prices can still influence consumer behaviour to a greater extent.

Focusing on the consumption process to see, the traditional friction variables such as distance, shopping time, shop layout, and new friction variables such as web design and app operation, as well as each of the specific scenarios such as communication, trust, logistics, payment, etc., are important factors affecting consumers' purchases and consumption, which is a specific manifestation of the cost of consumption in consumption as an economic activity. Sproles & Kendall (1986) found that as the consumer market shifts towards abundant supply, variety, and channel diversity, consumption is increasingly dependent on decision aid systems (e.g., word of mouth, etc.). Typically, an increase in the cost of consumption limits the range of choices available to consumers in terms of the type of goods they wish to purchase and affects the efficiency of the consumer market and consumer welfare. The constraining effect of consumption costs on consumer behaviour is also gradually becoming evident. Lower consumption costs mean that consumption behaviour becomes easier to implement, which will strengthen the consumption impulse of the original consumption structure of a single group (Lee, 2014); and for the group with a richer consumption structure, the shift in the cost of consumption means that he will demand a lower

cost of consumption of goods in similar products, or even be willing to pay a certain price in exchange for a lower cost of consumption, which further gives rise to the consumption of third-party services between consumers and sellers. When analysing the trade costs of cross-border e-commerce platforms, Xuenan Ju (2020) found that cross-border e-commerce helps to reduce the traditional fixed trade costs, while the transformation of consumption patterns in the Internet environment makes the variable costs in cross-border consumption gradually sensitive. These variable costs in the consumption process are different from the production costs that are included in the price, thanks to the development of the Internet and the digital economy, especially the services brought by the "platform" in the platform economy to cut costs, which has changed the composition of the traditional consumption of consumer costs, the manifestation of consumer costs and the attitude of consumers to them.

Taken together, consumption costs can be narrowly defined as the costs, excluding the price of goods, incurred by consumers in collecting consumption information, allocating their own resources and carrying out consumption behaviours in order to obtain a certain amount of consumption utility. Specifically, it refers to the costs of money, time, energy and the ability to process information, including decision-making costs and acquisition costs, that are incurred from the creation of the desire to consume to the implementation of consumption behaviours, which, together with income, have an impact on consumption behaviours.

## 2.2 Decision-making costs

Traditional consumption theory focuses on preferences and income constraints, but in addition, consumers' perceived decision-making effort to obtain and process information about each product to achieve the expected utility is also an important factor influencing consumers' choices, as demonstrated by VanBergen & Chen (2022), who showed that consumers are more inclined to make decisions by using rational reasoning than by perceived preferences. The process of rational reasoning and decision-making involves both the collection of consumer information, the planning and anticipation of consumer utility, and the allocation of one's own resources, all of which require the consumer's effort. As early as 1980, Steven M. Shugan conducted a study on the cost of thinking in the consumer decision-making process, defining the costs of consumer decision-making to include, but not limited to, the prevalence of information, the multitude of alternatives, time pressures, the consumer's limited ability to process information, and thinking about choosing an option. According to Higgins & Jun (2020). Decision-making costs arise from the consumer's quest for appropriate, suitable, and correct decisions, and identifies the difficulties and efforts faced by consumers in making utility predictions and consumption choices for different consumer products based on characteristics as well as preferences. This effort reflects the conflict between the finite nature of their resources and the infinite nature of their consumption desires, which allows for the definition of a clear and measurable unit of thought.

For the same type of consumption, the decision costs vary with the environment and the market, and differ across consumption behaviours. Firstly, the information sets contained in different consumer products are usually specific and therefore heterogeneous. Attribute information presents scale and thus has a significant impact on consumer decision-making, not only does the cost of acquiring different sets of information vary, but the decision-making cost of finding the best product from one set of more varied products may be much smaller than the decision-making cost of finding the best product from another set of less varied products (Wilcox & Prokopec, 2019). Heterogeneity caused by information also converges or diverges with information. Second, decision costs are constrained by consumer ability. In practice, consumers do not have random choice characteristics, but are more likely to show tendency characteristics after memory learning, and the consumption cost after repeatedly performing the same consumption behaviour will gradually decrease, for example, without repeatedly acquiring the inherent information of the already consumed product. Zhang Xiao (2021) argues that it is necessary to consider the social learning of online reviews and the self-learning behaviour of offline experience, and establish consumer social learning models and self-learning models for online and offline information search channels respectively, in order to explore consumer utility. The consumer utility models established by previous studies do not take into account consumer learning behaviours, thus making it difficult to accurately describe consumer preferences and behaviours. Finally, based on the rational neglect theory, consumers will make selective decision-making cost simplification through the

judgement of their own resources, and together with the utility to determine the specific behaviour of consumers. Otto & Martin (2022) argued that concentrated information is not always important, consumers can simplify the decision-making rules by hierarchical sorting, filtering and ignoring the unimportant information, so as to reduce the decision-making costs. This simplified decision-making behaviour is not only found in different stages and contexts of the same consumption, but also between different types of consumption. Kupor & Laurin (2020) point out that different decision-making behaviours also produce different consumption behaviours, and explain why, in the actual process of consumption, consumers usually choose a "satisfied" decision over a "satisfied" one. "decision rather than the "optimal" decision. The reason for this is that the simplified rule makes consumption decisions significantly less costly, compensates for some of the loss of consumption utility, and results in net utility.

The impact of the balance between decision costs and consumer utility on consumer behaviour is confirmed by John R. Hauser (1990). Excessive decision costs lead consumers to make comparisons in fewer decision sets, and this "fewer" is reflected not only in a reduction in the number of choices, but also in a reduction in decision time. Products that do not require effort to evaluate and make decisions are preferred by consumers. From the consumer's point of view, the easier it is to evaluate and make a decision, the lower the decision cost, and the same decision cost can be used to compare and choose from a larger set of decisions. This is especially true for experiential goods as well as services, whose information and utility can only be judged after the product is purchased or used, and it is difficult to obtain information through pre-consumption efforts (Stigler, 1961). Therefore, from the practical point of view, excessive decision-making costs often lead consumers to choose to abandon such consumption. Some scholars' studies on the difference between the concept of green consumption and actual actions have found that green consumption is also in line with this conclusion, with Xiao Jie (2022) introduced information richness into green consumption, focusing on the effects of different self-construals and temporal distance on consumers' green consumption decisions, and found that higher information preferences produce stronger purchase intentions. Zhang Mei (2022) analysed the dilemmas and breakthroughs in the application of eco-labels for green commodities, and concluded that the limitations of one's own knowledge, the indirectness and uncertainty of the information provided, and the "greenwashing" behaviour of enterprises would cause distrust in their information, thus limiting their application.

### **2.3 Acquisition costs**

Unlike decision costs on consumption, which link benefits to individual perceptual views and are choice costs that arise from the psychological level, access costs are costs that affect consumption as determined by the production system, the consumption environment, the system, and the consumer's ability. These include time (Yuan Ming, 2020), transport (Wang Lei, 2021), and expertise (Song Quanyun, 2019). In a relatively stable consumer market, acquisition costs have received little attention in traditional consumption theory due to the uniformity of the consumer market and fewer major changes in acquisition costs. Specifically, acquisition costs are concerned with the effort involved in obtaining the power to consume a given good, mainly in the form of exchange, both direct and indirect. They are most commonly and intuitively expressed in terms of monetary expenditures, but are not limited to monetary expenditures. Monga & Bagchi (2017) find that for consumers, resources such as time can be used for consumption in the same way as money, and that such acquisition costs are typically tied to the social production system, as well as to the institutions and habits of the consumer market. In general, an increase in social productivity and the optimisation of institutions significantly reduces the cost that consumers have to pay to obtain a good and helps them to obtain a good more easily. Historically, hierarchical societies often reflect their class value by making it more difficult to acquire knowledge and art; low productivity societies need to spend more money on transporting goods, thus giving rise to the phenomenon of "speciality"; countries with underdeveloped trade may even have great price differences for the same commodity in different cities. As societies develop, all of these aspects change, and access costs tend to decline. What's more, the concept of access cost is also enriching its connotation, gradually shifting from the measurement of time and distance to the study of the convenience of purchasing a certain commodity, i.e. the theory of accessibility of goods and services (Nedungadi & Hutchinson, 1985). Wang Qi (2022) argues that rural logistics is an important link between urban and rural production and consumption, and that the improvement of market accessibility can not only release the consumption potential of the region, but also greatly reduce interregional consumption inequality and differences in

consumption structure caused by differences in market accessibility.

Analysed from the perspectives of time, distance, cost and threshold in the consumption process, we can find that the concepts of acquisition cost and accessibility are relatively similar, and few scholars have indeed made a distinction between the two in their studies. However, when analysed in depth, the difference between the two lies in the following: on the one hand, accessibility focuses on the psychological conversion of the cost of obtaining consumer goods, and measures the degree of difficulty in the process of consumption; on the other hand, acquisition cost focuses on the cost of obtaining a certain consumer product, which is directly related to the time spent, money paid, and effort expended in obtaining the consumer product, and so on. At the same time, acquisition cost and accessibility are a set of relative concepts. The degree of accessibility in the concept of accessibility is closely related to the measurement of acquisition cost, and its improvement will lead to the reduction of acquisition cost, and vice versa will lead to the increase of acquisition cost; and the change of convenience in the concept of accessibility corresponds to the increase or decrease of the cost price paid for the process of reaching consumption. increase or decrease in the cost price. Accordingly, access costs can also be viewed as the costs of crossing barriers to consumption, which vary across different types of consumption in different social contexts depending on the cost of access, and vary with changes in consumer markets, institutions, and technology.

The most intuitive example of acquisition costs lies in tourism consumption, which from its inception to its popularity is also accompanied by changes in its acquisition costs, not changes in its consumer prices such as entrance fees and tour fares, but the costs between the decision to travel and the actual acquisition of consumer utility through monetary exchange are the acquisition costs that affect the popularity of the tourism industry. Vale (2020) examines how absolute geographic distances in tourism consumption are associated with different levels of travel costs under the consumer market, including a range of costs incurred in the consumption process such as time, communication, comfort, and cost. In the category of tourism consumption, acquisition costs can be understood as expenditures made to arrive at a destination for tourism consumption (Gehrke & Reardon, 2020; Reitsamer & Brunner-Sperdin, 2017; Zhu & Diao, 2020), and are the power to gain access to tourism consumption in order to cost price paid, rather than the price of tourism consumption. Among other things, the effect of transport on geographic distance and the degree of monopoly and coordination in the market can bring about changes in tourism costs, which are often considered to be the main factors influencing tourists' travelling decisions in tourism consumption (Hooper, 2015; Park, 2019; Reitsamer, 2017). Ceccato (2020) examined the accessibility of tourism development and found that a range of policies developed for the disabled tourism market to reduce their transport, communication, and access costs have contributed significantly to the development of the disabled tourism market.

Looking beyond the specific type of consumption that is tourism, acquisition costs are present in all aspects of consumption, and Nelson (1974) examines goods with added value or experiential goods, and finds that they often raise the barriers between consumer goods and consumers by charging membership fees and deposits. Throughout the existing research, it can be found that this part of the increased acquisition cost is not a cost that producers and merchants must pay during the process of production, sales and consumption of consumer goods, but a cost that sellers attach to consumers in order to ensure the smooth running of consumption, increase their own sales interests and the "distance" between consumers and consumer goods. It is a cost imposed by the seller on the consumer in order to ensure the smooth running of the consumption, increase his own sales interests and the "distance" between the consumer and the consumer goods.

### **3. Consumption costs and consumption behaviour**

#### **3.1 Rational Negligence and the Cost of Consumption**

Traditional consumption theories, both Life Cycle Theory or Durable Income Theory, are based on the assumption that actors are perfectly rational; however, the assumption of perfect rationality does not correspond to our observed reality, and a large body of empirical studies also proves the point that actors are not always rational. In light of this, the New Keynesianism proposes the concept of rational negligence. Sims (2003) argues that information processing capacity constitutes a constraint on economic agents due to the processing of information capacity constraints, negligent behaviour arises. It is worth noting that this negligent behaviour does not arise because the economic agent is irrational, but precisely because it is rational. These costs are generated by information, but they are not constituted by information alone. At the same time, it breaks

the original perception that lack of information creates information asymmetry, which in turn harms consumer welfare. Woolley & Rise (2021) argue that in the face of these costs, even though there is more information available today than ever before, consumers often ignore it. Or not as rational expectations stated at every point in time, they choose to update themselves with new information already at their disposal, which comes at an additional cost. Wang Jun (2013) argues that due to limitations in the "capacity" to process and react to income information and the need to acquire information requires This limitation and constraint creates endogenous information friction, resulting in consumers not being able to make accurate and quick decisions. In actual consumption, consumers need to process and reflect on much more than income information, including information about the attributes of consumer goods and social information, and Mittelman & Andrade (2020) found that consumers rationally choose to ignore relatively unimportant information, focusing on the impact of what is in front of them and ignoring unseen information in the consumption environment that they are unlikely to consider spontaneously. information. Thus, faced with these costs, economic agents choose to be negligent, i.e., consciously ignore certain information, or not, as is rational expectations says, choosing to update the new information already available at each point in time. Irmak & Sen (2017) find that a consumer who is browsing and is exposed to new, unknown information about a good already in his or her shopping cart experiences more cognitive dissonance due to the lack of information about the corresponding new attribute in the competing good, which makes it difficult to make a judgement based on the new information. At this point, rational consumers will choose to ignore this newly acquired information about the product. This is a reflection of the well-known fact, suggested by Akerlof & Yellen (1985), that a moderate deviation from the optimal choice in a near-optimal situation does not have a significant impact. People use a piece of information very infrequently, not because they cannot use it accurately and the utility of using it is low. Therefore, the limited information-processing capacity has to be used for other, more important purposes.

### **3.2 Heterogeneous effects of consumption costs on consumption**

Consumption structures at different stages of social development have their own characteristics, in which the cost of consumption of different types of consumption naturally has certain differences, and the specific impact of the cost of consumption on consumption behaviour also has different degrees and forms. The impact of consumption cost on the upgrading of consumption structure is not single, but has a certain duality. With the continuous enrichment and updating of consumer goods, the content of consumption cost is also expanding, the type and degree of consumption cost to be paid for the purchase of different consumer goods have certain differences, and the consumer's decision-making response to different consumption cost also has certain differences. On the one hand, the reduction of access costs makes people with a single consumption structure more willing to consume goods or services that they would not otherwise consume, and thus promotes the popularisation of hedonistic and educational consumption among the general public in order to upgrade the consumption structure. For example, the promotion and development of accessible travelling is facilitated by the reduced difficulty of accessibility (Frye, 2015; Ceccato, 2020) . In particular, access costs arise before the consumption behaviour and are sunk costs, and switching costs are formed when consumer behaviour shifts. Geyskens & Warlop (2008) argued that immediate consumption will stimulate consumption more than the absence of an immediate consumption opportunity because people tend to prefer products with high feasibility (greater ease of use) for the sake of an upcoming decision (Lee & Zhao, 2014; Wan & Agrawal, 2011). Liang & Tung's (2014) study also verified that sunk costs incurred by paying prior to consumption behaviour usually have a significant impact on actual consumption. It can be seen that the impact of acquisition costs varies in the face of different types of consumption. Rosário & Raimundo (2021) and Liang (2022) analysed the acquisition costs such as dues and deposits in the behaviour of online shoppers, respectively, and concluded that acquisition costs have a greater impact on experiencing the product. This is because when making the trade-off between acquisition costs and consumption utility, the cost of information likewise influences this representation; searching for a product provides complete information about the product prior to purchase, whereas experiencing a product has attributes that can only be known after the product is purchased and used, or the relevant information search is more costly or difficult to carry out than obtaining a direct experience ( Klein, 1998 ).

On the other hand, both decision-making and information costs influence consumers' negligent behaviour. As the cost of

decision-making decreases, consumers' rational negligent behaviour also decreases, and they are less likely to rationally choose to ignore potentially valid information because it is too much and difficult to process. At the same time, it makes the people with rich consumption structure initially put forward higher requirements for quality, function and other additional attributes of consumption, instead of being satisfied with basic functional needs, thus promoting the improvement of consumption quality to achieve the upgrading of consumption structure. The information cost in the process of consumer decision-making determines the size of the consumer decision-making set, and its impact on consumption is mainly reflected in the perceived differences and price sensitivity in the process of consumption. Whether rational consumers who are not inclined to plan, most of them will consider opportunity costs when they perceive constraint prompts, except that consumers who are inclined to plan will consider opportunity costs even if they are not prompted by direct constraints ( Spiller , 2011).

### **3.3 Impact of consumption costs on the upgrading of the consumption structure**

Based on reinforcement learning theory, direct summaries of relevant information in consumption, and indirect feedback from recent or past time information, are able to influence decision-making and other goal-directed behaviours in complex and possibly unexpected ways (Langdon & Niv, 2019). The two major learning capabilities of memory and comprehension, and the increasing ease of searching for information on services on the Internet, have the potential to alter individual consumption decisions and their seeking behaviours (chen & Tsai, 2018), fundamentally negating the invariance of consumption costs, especially decision-making costs. In real life, consumer decision-making typically makes judicious use of previews as well as online reviews to aid decision-making based on consumer product characteristics (e.g., quantity, price point, and variance). However, not all online reviews help consumers learn, and Choi & Oh (2019) found that consumers' desire to consume through previews decreases with increased reading of partially in-page reviews. Low-quality reviews that struggle to provide valid information not only do not reduce consumption costs through consumer learning, but are also ignored by consumers because they increase the cost of processing information. Meanwhile, Tsai & Soman (2021) argued that consumers usually seek to be consistent with other consumers. This both exacerbates the propensity to purchase a particular consumer product after memory learning and increases the cost of aligning consumers with other consumers after acquiring more low-quality information. Therefore, the continuous development of consumption influences the change of consumer structure, and is also closely related to the continuous improvement of consumers' learning ability and channels, and technological and institutional advancement, which can significantly reduce the cost of collecting and processing information, and thus influence specific consumer behaviour through the reduction of consumption costs.

With constant consumption costs, as technology improves and becomes more widespread, emerging products that were originally sold at high prices and had barriers to consumption access will gradually open up markets as the value of the technology declines and economies of scale increase, and resolving the barriers to consumption and lowering the cost of consumption is a key factor in rapidly increasing the share of consumption on top of it (Kapustin & Grushevenko, 2020 ). However, the cost of consumption, the price of goods and the experiential utility of consumption, together influence consumer behaviour. Kanay & Cézéra (2021) found that labelling in the form of numbers and graphics can effectively increase consumer understanding of the product and reduce the decision-making cost of that consumption behaviour through indirect feedback of information. And the utility of the experience of the same commodity is fixed, in the case of technology sinking, product price reductions are consistent, the consumption of the same commodity will be accelerated with the reduction of costs, but also can accelerate the breaking of consumption barriers through the reduction of consumption costs, and promote the upgrading of the consumption structure. At the same time, the scarcity caused by high consumption costs gives some added value to some consumption, when the utility is proportional to the cost, and the more difficult to obtain consumption the higher its experiential utility (Park & Spence, 2022). Overall, human learning ability has a decreasing influence on consumption cost, and on this basis, the influence of external factors on consumption cost can also accelerate the time needed for consumption structure change to a certain extent, and will further accelerate the transformation and upgrading of consumption structure.

## **4. Consumer markets in the digital economy**

### **4.1 Study on the impact of the digital economy on the structure of consumption**

With the popularisation and promotion of the new generation of digital information technology and the arrival of the tide



of the digital economy on a global scale, the application of cloud computing, big data, the Internet of Things, mobile computing, smart cities and other emerging digital technologies has made the system, technology and other factors that are not susceptible to short-term changes in Keynes's theory of consumption always face the impact of digitisation, and the consumption traditions and habits have given way to the more convenient and diversified modes of operation in the new economy. Various industries, including consumption, are changing at an extraordinary rate. A new round of upgrading of the consumption structure is taking shape. Consumption habits that used to be regarded as unchanging, and consumption costs such as the efforts made to obtain consumer goods, are changing along with the changes in the consumer market, and the impact of the improvement of consumers' capabilities and qualities on their consumption behaviours is becoming more and more significant. For example, as information becomes more widely available and consumers learn, the cost of processing information for decision-making is declining. Meanwhile, with the development of technology and the improvement of institutions, communication-based consumption behaviour is easier to make attribute judgments (Zhang, 2021). Pancer & Noseworthy (2019) stated that as digital elements are gradually embodied in every aspect of daily life, the readability of information is gradually improving, and in turn, the cost of consumption will also decline. As a notable example, the impact of the digital economy on the upgrading of the consumption structure deserves due attention, Chiles & McMackin (1996) have demonstrated that the popularity of Internet consumption is due to the significant reduction in transaction costs. The digital economy as a further development of the Internet, the display of product information, the enrichment of the review system, the community interaction system, etc., all have a significant impact on the reduction of transaction costs. Park & Kwon (2022) have also proved that the higher the accuracy of the information about the attributes of the products that are not known, the more the willingness to consume will be promoted.

The application of digital technology has enhanced the convenience of consumption, giving rise to a range of intermediary services that help to reduce the cost of consumption. The combination of this service-based consumption and consumption amenities significantly reduces the emotional, material, time and ability costs that need to be invested in consumption, as well as some of the thresholds for consumption, and improves the sustainability of consumption by reducing the costs of a large amount of consumption with a small amount of monetary resources (Seregina & Weijo, 2017). On the other hand, the gradual application of digital technology in various aspects of consumption makes it easier to separate and value create consumption costs from the act of consumption. When consumption costs become a commodity, consumers need to pay an additional cost for this type of service, which gives them the possibility of becoming a commodity on their own. Competition and trade in a transparent consumer market ensures consumer utility and creates new consumer welfare. However, what role does the cost of consumption play in the upgrading of the consumption structure, and what role do the Internet and the digital economy, as products of technological development, play in the influence of the cost of consumption on consumption habits and the structure of consumption, which still needs to be further researched.

## **4.2 Research on reducing consumption costs in the digital economy**

### **4.2.1 Digital technology and consumer costs**

In the past, information retrieval and searching was usually a major barrier to consumption in the real economy, and for goods that can be searched for prior to purchase, and for which information is gathered to aid decision-making, has a high degree of certainty (Suwelack & Hoyer, 2011) which makes consumers more dependent on information when purchasing such products, and leads to such consumer goods requiring higher information searching and analysing skills, as well as having stronger barriers to consumption and exclusivity. Dietvorst & Bartels (2022) argue that algorithms are more likely to be used to maximise benefits than human decision makers. The development of technologies such as big data and artificial intelligence in the digital economy enables the use of certain devices to convert various information, including: graphics, text, sound, and images, into electronic computers that can recognise the Binary numbers "0" and "1" after computing, processing, storing, transmitting, disseminating, and restoring, through the visual organisation (Van der Lans & Wedel, 2021), visual breadth (Streicher & Bühler, 2021), and visual width (Streicher & Bühler, 2021) brought about by the click-stream data. Streicher & Büttner, 2021) expansion to accelerate consumer product search and reduce related decision-making, acquisition costs. At the same time, new ways of consuming in the digital economy make it easy for consumers to find other customers'

opinions online, including quality, sustainability, and price (Lu & Yao 2018). A study by Dabholkar & Sheng (2012) further affirms that the use of decision-making tools derived from digital technology to analyse information about goods to further assess product utility can further reduce the decision-making costs of consumption. Although over-abundance of information can help reduce decision costs by providing exhaustive decision elements, it can also increase the cost of time spent on decision making due to the increase in information elements collected, expanding the decision set, digital technology has never had more than one side to it, and has more significant duality in assisting consumers in decision making through digital, information elements. You & Fei (2022) argued that i.e. digital technology helps to disseminate more information, but also makes the perceived time cost greater; Rathee (2021) stated that digitised logistical distances shorten the relative logistical time at absolute distances, but affects the consumer's psychological perception of distance as an acquisition cost.

And the impact of digital technology on consumption costs also includes the quality of information. On the one hand, high-quality information can help consumers better understand the differences between two goods beyond price, but low-quality information can only result in additional decision-making costs for consumers. Lo & Tojib (2019) find that lowering the cost of searching for high-quality information reduces consumers' price sensitivity by creating a greater perceived difference between different consumptions. Accordingly, once the search cost of low-quality information is lower than that of high-quality information, it leads to an increase in the cost of this type of consumption. On the other hand, low-quality information leads consumers to perceive the product as a less typical version of its category, thus increasing price judgement costs but lowering quality expectations (Baskin & Liu, 2021), which not only makes it difficult to help with decision making, but also exacerbates the consumer's rational negligence and intensifies the selective ignoring of the information that has been collected. Therefore, intelligence reduces quality search costs and can have the opposite effect on differentiation and price sensitivity, due to the fact that intelligence filters out a range of alternatives and recommends only a few alternatives that perfectly match the customer's quality preferences ( Diehl & Lynch , 2003). Perrigot & Pénard ( 2013 ) found that most of these factors enhance online shopping intentions and behaviours by billing consumption costs extra. Although the impact of the expansion of the decision set on decision costs is uncertain, from the perspective of consumption costs, the application of digital information technology greatly reduces the control of consumption costs by digital elements of consumption costs, and provides possible room for manoeuvre to guide the direction of the upgrading of the consumption structure (Lin Chen et al., 2020).

#### **4.2.2 Digital products and consumer costs**

Digital products are based on exchanges in digital format or delivered via the Internet in a bit stream, eliminating the physical boundaries between production and use, and the new "digital+" forms of consumption born from digital elements have different manifestations, which can be broadly classified into three categories: digital information and entertainment; digital tools; and digital goods. li et al. (2020) argues that a digital economy based on high-tech development, business and social transformation, and information-driven changes in the region's growth can create new value chains and further remove the traditional barriers to business history, and considers research directions in which traditional consumption is closely linked to the digital economy, such as artificial intelligence, the platform economy, digital trade, and fintech innovation. For consumers who would otherwise have had to forgo experiences due to cost thresholds, the value of experiences gained through the loss of some utility far exceeds the net utility experienced in the past at high cost. Qianqian Li (2021) studied experience-based consumption based on Internet social scenarios, which transforms the high cost threshold of traditional experience-based consumption into network social costs, but allows consumers to feel the interest and enjoyment of participating in openly hedonic experience-based consumption in the process.

Tan & Cheng (2016) argued that while digital goods industries such as entertainment, software, and publishing are growing rapidly, traditional supply chain contractual models have failed to evolve with the new digital economy. The creation of new digital products has created other barriers while reducing some of the costs of consumption. The development of digital products based on the digital economy inevitably puts higher demands on consumers to apply digital technology and equip the digital society. Guan Leining (2022), in introducing the new type of consumption in the meta-universe, mentions that digital products within the meta-universe are transformed from one-way communication from merchants to consumers to

multi-subject instant interaction, which is also based on certain digital devices. The price of digital products will often not include the relevant equipment, which is more likely to generate bundled sales with new consumption costs compared to physical goods. Bockstedt & Goh (2014) stated that while the reduced transaction and search costs of digital products increase the diversity of supply-side offerings, customised bundling may introduce new types of frictions in the consumption process.

#### **4.2.3 Digital ecology and consumer costs**

The digital economy in consumption is mainly embodied in the combination of digital elements and various aspects of consumption, which promotes the intelligentisation of the consumption process, gives rise to new consumption methods and guides new consumption habits. In reality, e-commerce has replaced brick-and-mortar consumption to a certain extent (Ding & Lu, 2015; Lee & Handy, 2017), and young people have reduced the frequency of brick-and-mortar shopping while doing e-shopping (Shi & Witlox, 2019; Saphores & Xu, 2021), however that older people still tend to do offline shopping rather than online shopping. This is due to the reduced cost of consumption in the digital economy, which itself places certain demands on consumers' ability to use digital technology, creating a new cost of consumption that is reflected differently in different types of consumption (Arranz-López & Soria-Lara, 2022). At the same time, under the same consumer market, there are different consumption costs for different consumers, and the same-side and cross-side effects of consumer feedback platforms reduce the cost of consumers' fulfilment of their power to varying degrees, but the cross-side network effects of the platforms generate economic considerations and thus new costs (Kozinets & Chimenti, 2021). In the ecology of the consumer market in the digital economy, the process of consumer consumption is the process of storing consumer memories and habits in the consumer market, which can be retrieved at any time, enabling sellers to collect and analyse information and needs of different customers at a very low cost, reducing the decision-making costs arising from the transmission of communication and information, and reducing the cost of acquiring personalised goods and reducing barriers to transactions by means of a flexible and adaptive production system as well as a mass production method of tailor-made production. acquisition cost of goods, reduce transaction barriers, reduce market friction, and promote the upgrading of a new type of consumption structure (Chang, 2019). In addition, the digital consumption ecology collects and provides product and commodity information while providing consumption venues, reducing the information cost for online buyers to search for desired items and also exploiting underutilised private resources (Basili & Rossi, 2020). But this reduction in the cost of consumption depends on the application of technologies such as deep learning to artificial intelligence, and is even more determined by the institutional and ecological logic of the consumer market in the digital economy (Lu, Taihong, 2017).

### **5. Literature Review and Topics for Further Research**

The structure of consumption and the stage of social development are mutually constraining, promoting and symbiotic. As society develops, the consumer market and consumption habits will continue to change in line with changes in institutions, capital and technology, and the structure of consumption is bound to escalate at different stages. In modern society, the consumer market has become more and more active, with a wide variety of goods and services, and the ways and forms of consumption are also being constantly innovated. The information, time communication and psychological distance conveyed by different consumption methods are different (Kaju & Thomas, 2018), and consumers will choose different products or different consumption behaviours due to different negligence behaviours and incur costs to match. Consumption costs are a niche topic and rational negligence is an emerging theoretical proposition. Happily, the existing literature has explored the study of consumption costs under the rational negligence perspective, resulting in a valuable body of literature. However, in the mainstream consumption research paradigm, economists' studies on the proposition of "why the consumption structure is upgrading" are more based on the rational consumer hypothesis and centred around income, ignoring other influencing factors to a considerable extent, which makes it difficult to accurately explain the causes of the upgrading of the consumption structure. In particular, in the second and third consumption upgrading that is gradually advancing under the continuous progress of science and technology, has the influence of technology, institutions and economic patterns on consumption upgrading been neglected? Or what kind of influence does it have on the consumption structure? From the perspective of the upgrading trend of consumption structure and the impact of consumption costs on it, based on the research progress in the existing literature, there is still a need for in-depth studies including but not limited to the following topics:

From the consumer's point of view, can the factors that determine his or her consumption behaviour and structure be expanded and deepened? How do consumer habits determine the cost of consumption? These are all questions worth pondering. The different resources that consumers have at their disposal for consumption can be translated into different combinations of costs, which are varied and do not relate to utility on an increasing or decreasing scale. Some consumption costs can only be invested in such a way as to avoid a bad outcome, but for a given consumer good, the utility obtained in the end is likely to be the same, regardless of how much time is ultimately spent on understanding it and how much cost is invested in it. This shows that consumer costs are not static, but consumer utility is difficult to change. With the accumulation of consumer experience as well as the continuous development and improvement of consumption technology and institutions, the ability of consumers increases and negligent behaviour decreases, and under the premise of unchanging consumption utility, the change of consumption cost will promote the increase of consumption and structural upgrading. Based on the theory of rational negligence, this change will bring about differences in the consumption structure, different types of consumption and different consumption behaviours of the cost of consumption there are differences, the overall cost of consumption can only increase the net utility of consumers, but can not be between different types of consumption to produce behavioural decision-making differences, the cost of a certain consumption will bring about the cost of a consumption in the overall consumption of an increase in the proportion of the cost of the cost of the cost of the cost of the cost of the cost of the cost of the cost of the cost of the cost. And what factors influence differences in consumption costs? It is worth exploring in depth in the future.

Looking at consumer markets, whose institutions and technologies have a direct impact on consumption costs, how do environmental changes in consumer markets and consumer habits determine consumption costs? How to measure the change of consumption cost under a specific consumer market? All are the problems that need to be solved nowadays. Consumption costs under market competition are decreasing, and consumption costs may also become new consumer goods. The attribute of information explosion in the digital ecology expands the way consumers obtain information about the attributes of commodities, the innovation of data algorithms can assist consumers in decision-making through scientific and technological means, and the upgrading of the digital industry greatly reduces the cost of production and circulation within various types of consumption, which in turn can reduce the cost of acquisition for consumers. The upgrading of the consumption structure is not only a shift in the proportion of consumption types, but also implies that an originally scarce or new type of consumption is gradually becoming popular among the general public, which is a historical development phenomenon that inevitably occurs with the reduction of consumption costs. The upgrading of the consumption structure is the process of shifting from essential to non-essential consumption, and it is also the process of a new type of consumption gradually coming into thousands of households, non-essential consumer goods gradually transformed into essential consumer goods sinking process, and it is the process of forming a new consumer market. Consumption cost is one of the gears, and the faster it turns, the faster the upgrading of the consumption structure will be, and the direction of the gear's rotation also influences the direction of the upgrading of the consumption structure, and the dynamic relationship between the consumption cost and the consumption structure in different socio-economic environments, and the mechanism of the influence between the consumption cost and the upgrading of the consumption structure are waiting to be analysed more in depth.

Rational negligence highlights the profound impact of consumption costs on the upgrading of the consumption structure. Due to the high cost of consumption, the ability to process and react to information in the rational negligence theory constrains consumers' understanding of attribute information and decision-making on consumption behaviour, and a lower ability generates excessive consumption costs, reinforcing consumers' judgement on price and ultimately ignoring other factors that may be involved in decision-making (Baskin & Liu, 2021). For information that is difficult to access and process, consumers rationally consider it to be relatively unimportant information, leading to the choice to ignore them, which places higher demands on consumers' ability to process information. Different consumer market mechanism determines different information costs, the same information on the ability of the requirements also have differences, lower decision-making costs can avoid because of the high cost of processing part of the information generated by the rational negligence, on the contrary, the reduction of rational negligence can also strengthen the importance of information, information on the attributes

of consumer goods will also reduce some of the cost of consumption, weakening its constraints on the consumption behaviour of the economic agents, and further promote consumption. Promote consumption. In general, there are mutual constraints and influences between consumption cost and rational negligence, but how to verify the correlation between rational negligence and consumption cost and the influence mechanism and how to study it in depth is still a topic to be answered.

In the era of digital economy, how does this new economic form with "digital" as the centre of gravity promote the upgrading of the consumption structure by reducing the cost of consumption through rational negligence? In the era of digital economy, science and technology have changed the rules and habits of the consumer market, and big data technology has made information no longer a scarce resource, and the transformation of the value of consumer information has brought about changes in the consumption system. The "ability" to collect and process information in the process of consumption has been highlighted, and with the improvement of the "ability", the cost has been reduced, and consumers can make more rational choices, think about the costs behind consumption, and reduce the negligence of some information compared to the past; The digitisation of consumer markets and rules has greatly reduced the cost of acquiring part of the consumption, increasing the net utility of the consumption while the experiential utility of the consumption remains unchanged, leading to a shift in the original consumption structure. This further validates that income is not enough to fully explain the formation mechanism of this consumption upgrade, and the proposal of consumption cost breaks through the income-consumption research framework and explains the problem of the direction and speed of the upgrade of the consumption structure, which was difficult to explain through income in the past. In future research, the digital economy and the cost of consumption will be a pair of concepts that grow together, how does the digital economy ecology change the connotation of the cost of consumption? How does it affect the consumption structure? Further research is needed.

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