# A Systematic Research on Methods for Cross-border E-commerce Enterprises to Identify and Select Customer Value—A Case Study of SHEIN

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**Abstract.** With the rapid development of economic globalization, cross-border e-commerce enterprises face challenges brought by factors such as the diversity of the global market and the complexity of global supply chain distribution when expanding into overseas markets. These factors directly affect the judgment and selection of customer perceived value by cross-border e-commerce enterprises, which in turn influences the accurate positioning of products and services in overseas markets. Taking the "small-batch quick replenishment" business model of SHEIN as an example, this paper uses soft system methodology (SSM) to conduct an in-depth analysis of the methods for identifying and selecting customer perceived value. Based on SHEIN's successful experience, this paper proposes three optimization suggestions for identifying and selecting customer value: learning customer perceived value by system methodology, leveraging digital technology to empower supply chain, and emphasizing customer participation to achieve co-created value.

**Keywords:** Cross-border E-commerce, Customer Perceived Value, SHEIN, soft system methodology, Interpretivism

## 1 Introduction

In today's booming digital economy and cross-border trade, more and more enterprises have realized that to achieve sustainable survival and development in the fierce market competition, they need to create perceived value for customers more efficiently than their competitors. Enhancing customer perceived value is not only an important means for enterprises to attract and retain customer loyalty but also a crucial source for enterprises to improve their competitive advantages. For cross-border e-commerce enterprises, how to accurately capture the customer perceived value of target markets in the globally diversified market and efficiently develop and provide products and services that satisfy consumers is a significant strategic activity. However, the global market exhibits obvious regional differences and volatility, which to a certain extent


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affects the accurate judgment and selection of customer perceived value by cross-border e-commerce enterprises. This leads to strategic mistakes in product positioning when products and services enter overseas markets, thereby putting enterprises at a disadvantage in competition. Based on this research starting point, this paper takes SHEIN, a Chinese cross-border e-commerce enterprise, as an example and uses soft system methodology to deeply explore effective approaches for e-commerce enterprises to identify and select customer perceived value, aiming to provide useful references and inspirations for Chinese cross-border e-commerce enterprises to successfully expand into overseas markets at the level of systematic methodology.

## 2 The Booming Cross-border E-commerce Industry

In recent years, with the rapid development of economic globalization and the digital economy, the global cross-border e-commerce industry has shown an explosive growth trend. According to the statistics in eMarketer's Global E-commerce Retail Forecast Report, the global e-commerce sales volume reached $6.3 trillion in 2024, with a year-on-year growth of 8.76%. China contributed approximately 33% of the global share with an online retail sales volume of about $2.1 trillion, becoming the world's largest online retail market for 12 consecutive years [1]. At present, the number of cross-border e-commerce comprehensive pilot zones in China has reached 165, covering 31 provinces, autonomous regions, and municipalities directly under the Central Government [2]. Chinese cross-border e-commerce enterprises have performed brilliantly on the international stage in recent years. In 2024, Alibaba's annual cross-border B2B transaction volume exceeded $1.2 trillion, with a year-on-year growth of 23%; the gross merchandise volume (GMV) of Temu, a brand under Pinduoduo, exceeded $90 billion, and its APP download volume ranked first among shopping APPs in the U.S. market for 12 consecutive months; SHEIN, an all-category retail enterprise focusing on fast fashion apparel, achieved a revenue of $32 billion, with a year-on-year growth of 40%. Its global market share has surpassed that of many well-known European and American brands, and it has now become the world's third-largest fashion retailer.

## 3 Challenges Faced by Chinese Cross-border E-commerce Enterprises in Overseas Markets

As an international business activity operating across regions, the challenges faced by cross-border e-commerce when entering overseas markets mainly come from the diversified global market demands and the complex and dynamic global supply chain.

### 3.1 Challenges Brought by Diversified Global Market Demands

Firstly, the diversified global market demands increase the difficulty for cross-border e-commerce enterprises to develop products and services. On one hand, due to differences in economic levels, living habits, climatic conditions, and consumption cul-

tures, consumers in different countries and regions have significant differences in their demands for products and services. Many cross-border e-commerce enterprises easily encounter "acclimatization" when expanding into overseas markets because they ignore regional differences. For example, a cross-border e-commerce platform A once sold large quantities of thick sweaters, which were popular in the domestic market, to Southeast Asia. However, these sweaters did not meet the local climatic needs, eventually leading to overstocking and clearance sales. On the other hand, differences in industrial policies, industry regulations, social values, and religious beliefs in different regions impose complex regional compliance requirements on the products and services of cross-border e-commerce enterprises. For instance, in terms of clothing chemical safety supervision, the REACH Regulation implemented by the European Union imposes strict restrictions on harmful chemicals in clothing fabrics and dyes. Similarly, clothing fabrics sold in the Middle East that contain animal components (such as wool or silk) must obtain Halal certification to ensure that the entire production process complies with Islamic law. These regional compliance requirements are usually negligible in the domestic market but become insurmountable thresholds in overseas markets.

Chinese cross-border e-commerce enterprises often do not pay enough attention to the hidden thresholds in overseas markets when entering them, which puts them in a passive position. For example, when SHEIN initially entered the European and American markets, it mainly adopted a low-cost competition strategy. It quickly attracted price-sensitive young consumer groups in Europe and America by launching a large number of clothing styles at affordable prices. However, most of the clothing fabrics used in this strategy were low-cost and non-degradable, which contradicted the "environmental ethics" cultural demands prevalent in Europe and America. In November 2022, Greenpeace Germany released a test report stating that after testing 47 types of SHEIN products, 7 of them were found to contain "hazardous chemical substances" exceeding the limits set by EU regulations [3]. After these issues were exposed, SHEIN's brand image among European and American consumers was severely damaged. To repair its damaged brand image and regain the trust of European and American consumers, SHEIN later invested hundreds of millions of dollars to rebuild its "sustainable supply chain" system. For example, in the fabric selection process, it requires that fabrics contain at least 30% environmentally friendly materials; in terms of production technology, it adopts a new generation of recycled polyester technology to break through the bottlenecks of traditional recycling technologies. The setbacks SHEIN encountered in its early overseas expansion are actually a microcosm of many Chinese cross-border e-commerce enterprises, which are exploring the way forward through trial and error and continuously learning and growing from setbacks.

### 3.2 Challenges Brought by the Complex and Dynamic Global Supply Chain

The supply chains of cross-border e-commerce enterprises are often operated globally in terms of design, production, procurement, logistics, and other links. The interweaving of multiple links, multiple entities, and multiple rules increases the complexity

of supply chain management. For cross-border e-commerce enterprises, the supply chain is essentially a "double-edged sword": on one hand, it reduces costs through the integration of global resources; on the other hand, due to its characteristics of "long distance, high coordination, and strong constraints", it limits the differentiated innovation capabilities of front-end products and services. For example, when the product R&D department at the front end of the supply chain attempts to customize products differently according to market demands, it is often severely restricted by factors such as the standardized processes, long production cycles, and complex division of labor at the back end of the supply chain. This greatly limits the innovation capabilities of cross-border e-commerce enterprises in the product R&D link and reduces consumers' perceived value. This situation is particularly prominent in the field of fast-moving consumer goods (FMCG) such as clothing and home furnishings. For clothing products, for example, the overseas sales end often relies on "quickly capturing the differentiated demands of the target market and continuously iterating products" to meet the demands of the target market. However, the supply chain of such products usually has the characteristics of a concentrated production end (distributed in China and Southeast Asia) and a dispersed consumption end (distributed in Europe, America, the Middle East, etc.). Due to the long supply chain of clothing products (with an average of 2-8 weeks) and numerous transit links (procurement → production → sea/air transportation → customs clearance → overseas warehouses → last-mile delivery), the response speed to global market demands is often much lower than that in the domestic market. This response lag directly restricts the implementation of product innovation and differentiation strategies by cross-border e-commerce enterprises.

Behind the challenges faced by Chinese cross-border e-commerce enterprises when entering overseas markets, there is a common shortcoming, that is, insufficient in-depth and comprehensive understanding of customer perceived value. Enterprises have not carried out systematic operations around the concept of customer perceived value in the R&D, design of products and services, and even the entire supply chain management.

## 4 The Connotation of Customer Perceived Value

In the modern enterprise marketing management, developing products and services oriented to customer needs is an important activity, and the process of enterprises meeting customer needs is the process of enterprises creating value for customers. In this process, products and services are important carriers. Peter Drucker (1954), a master of management, pointed out that customers do not buy products but the satisfaction of their needs [4]. Early marketing theories often assumed that customers are rational decision-makers, and their purchasing behaviors are determined by functional needs and prices. Therefore, enterprises mainly focused on optimizing the combination of product, price, place, and promotion in the process of value creation. Since the 1980s, with the rapid development of the global market economy and the widespread popularization of Internet technology, customer needs have gradually shown diversified and personalized characteristics. At this time, the marketing logic of enterprises

has gradually shifted from "enterprise-centered" to "customer-centered". Enterprises not only need to provide high-quality and low-cost products but also create additional value for customers in multiple aspects such as services, brands, and social interactions to build a long-term and stable relationship between enterprises and customers. This change has prompted enterprises and the academic community to re-examine and define customer perceived value.

Valarie A. Zeithaml (1988), a marketing professor at the University of North Carolina in the United States, was one of the early scholars to propose the concept of "customer perceived value". She believed that consumer perceived value is the overall evaluation of the utility of a product or service by consumers after weighing the perceived benefits (such as quality, benefits, utility, etc.) and perceived costs (such as price, time, energy, etc.) of the product or service. She pointed out that consumers' value judgment of a product or service is based on the trade-off between the benefits and costs they subjectively perceive, rather than just the objective attributes, and it depends on consumers' personal experiences and perceptions. Due to the differences in the perceived weights of price and quality among different consumers, value judgment has individual heterogeneity. She pointed out that high perceived value will enhance consumers' purchase intention, satisfaction, and loyalty; while low perceived value may lead consumers to switch to substitutes or abandon purchases [5]. Philip Kotler (1994), a professor at Northwestern University in the United States, pointed out that customer perceived value is the difference between the total benefits obtained by customers and the total costs incurred. In a competitive market environment, enterprises can only attract customers' attention to their products and services if they create better perceived value for customers than their competitors. Enterprises need to integrate internal resources through a "value delivery system" to maximize customer perceived value [6]. Sheth (1991) proposed the Theory of Consumption Values (TCV), aiming to break through the traditional single-dimensional framework for explaining consumer behavior and put forward a multi-dimensional consumption value framework including functional value, social value, emotional value, cognitive value, and conditional value, so as to more comprehensively explain the driving logic behind consumers' choice of products and services.

Since the 21st century, with the vigorous development of the digital economy, digital technology empowerment has profoundly changed the way and mechanism of creating customer perceived value. In the context of digital empowerment, consumers' experience value or emotional value plays an important role in their value judgment of products and services. At this time, the process of enterprises creating customer perceived value is no longer a one-way output from enterprises to customers. With the empowerment of digital technology, there are more and more scenarios where users participate in the creation of products and services by enterprises. For example, Xiaomi Group attaches great importance to listening to customers' opinions in the product R&D link and will take the initiative to invite customers to participate in product technology iteration projects. Many inspirations for technological innovation come from customers' feedback. Users' participation in the process of creating customer perceived value not only brings users a more personalized consumption experience but also makes enterprises' products and services more in line with the real needs of

consumers. In this context, value co-creation and experience value have gradually become hot directions in the academic research on customer perceived value. The research team led by Professor Zhao Ping from Tsinghua University (2018) developed a "customer perceived value evaluation scale" based on the "China Customer Satisfaction Index (CCSI)", dividing customer perceived value into four dimensions: product value, service value, digital experience value, and social identity value. The team verified the reliability and validity of the scale through 200,000 samples from 30 industries across the country. Their research found that in industries with a high degree of digitalization such as e-commerce and finance, the contribution rate of digital experience value to customer satisfaction reaches 38%, exceeding the 32% of traditional product value [7]. Ravald (2019) studied the B2B field of e-commerce and proposed the "value chain co-creation model". This study believed that customer perceived value is a dynamic result jointly created by suppliers and customers in knowledge sharing and process collaboration, rather than an attribute unilaterally transferred by enterprises. Through manufacturing cases, this study found that when customers are deeply involved in the product R&D link, their perceived value can be increased by more than 35%, and the repurchase rate can be increased by 28% [8]. Researchers such as Lähteenmäki from Aalto University in Finland (2022) proposed a "three-dimensional framework" for digital customer perceived value based on the case of digital transformation in financial services: functional value (such as the efficiency of intelligent risk control), experience value (such as the sense of immersion in VR service scenarios), and social value (such as the identity recognition of social financial tools). Through a questionnaire survey of 2,000 users, this study found that the impact coefficient of experience value on customer loyalty of young groups (18-35 years old) is as high as 0.72, exceeding the 0.58 of traditional functional value [9]. The research reveals that the empowerment of digital technology has a profound impact on the customer value creation of traditional financial services. Traditional financial services, through technology empowerment, open interfaces to customers, endow customers with more control over financial service scenarios such as time and space, resources, and processes, and realize a paradigm revolution in value creation from "static value transfer dominated by providers" to "dynamic value integration dominated by customers".

While the digital economy is developing rapidly, the concept of green development that emphasizes sustainable development and ecological environmental protection has brought a new interpretive dimension to the understanding of customer perceived value. Chinese scholars such as Yang Xiaoyan (2006) added the green value dimension that emphasizes ecological environmental protection to customer perceived value. Taking women's green cosmetics as the research object, this study verified the importance of green value to customer perceived value through exploratory factor analysis and confirmatory factor analysis [10] . Finnish scholar Jukka Rokka et al. (2023) expanded the connotation of sustainability for each dimension of Sheth's consumption value model and added a new dimension of "ethical-environmental value" based on this value model. This dimension breaks the logic of the traditional value model that "focuses on consumers' own needs" and shifts to the balance of three values: "ecological environmental protection - social sustainability - individual needs" [11]. For ex-

ample, when we want to buy a piece of clothing, we need to consider not only our own needs but also the ecological and environmental characteristics of the clothing material, as well as whether the source of the clothing is compliant and whether it comes from unethical sweatshops.

From the above scholars' interpretations of customer perceived value, it can be seen that customer perceived value is the result of consumers' multi-dimensional comprehensive evaluation of enterprises' products or services. In the evaluation, the importance of each evaluation dimension varies from person to person, from time to time, and from scenario to scenario. Therefore, customer perceived value has both an objective side and a subjective side, and its connotation is dynamically evolving with the development of social science, technology, and culture. This paper holds that customer perceived value is not only a concept in modern marketing management but also, from the perspective of sociological research, the result of a value judgment activity involving human participation. For cross-border e-commerce enterprises, identifying and selecting customer perceived value requires us to conduct in-depth discussions from the perspectives of social sciences and system sciences.

## 5 The Interpretivism Research Paradigm

The interpretivism paradigm in sociology originated in the early 19th century. Neo-Comtist philosophers represented by the famous German historian and philosopher Wilhelm Dilthey reflected on the positivist research paradigm of social theory. They believed that human society is different from the natural world. Human society has unique categories such as meaning, symbols, rules, moral norms, and values. These elements give birth to human culture and influence social activities. Therefore, researchers cannot simply use the positivist methods of natural sciences to study complex social problems but should understand and deal with such problems from a historical perspective [12]. Dilthey pointed out early that human life has a temporal structure. Every moment of human life bears the awareness of the past and the participation in the future, from which human experiences, thoughts, emotions, memories, and desires emerge. These factors together constitute the rich meaning of life [13]. The human life world is by no means as irrational as the material world; on the contrary, the human world contains abundant rationality. Among them, meaning is the premise of human life, and understanding (Verstehen) is the basic means to grasp this meaning. Therefore, when studying such problems, we cannot treat them as external things like in natural science research, but should regard them as internal things in the human spiritual world and understand them in an interpretive way.

The German sociologist Max Weber (1904) developed this idea and established the interpretive sociology theory. Weber emphasized that all basic thinking about meaningful human actions is directly related to the two categories of "purpose" and "means" [14]. He pointed out that social actions occur in people's purposeful communication activities, and sociological research is the subjective understanding of human social actions. By understanding the subjective meaning and value behind the actions, a causal explanation of the process and results of social actions can be given [15]. To

enhance the objectivity of the understanding process, Weber created the concept of "ideal type" in his research methodology. The "ideal type" requires sociological researchers to follow the principle of value neutrality to describe and classify various connections and events involving actors. This ideal type is a subjectively constructed conceptual model, which is used to compare and judge the relevance between human actions themselves and which values, and help researchers make causal explanations [16]. From the perspective of interpretivism, customer perceived value is a value judgment activity between people or between people and things. The process of cross-border e-commerce enterprises identifying and selecting customer perceived value is actually the process of enterprises finding out the true meaning behind customers' value judgment activities, which requires the use of specific method tools. This paper specially adopts soft system methodology as the main research tool.

## 6 Soft System Methodology for Exploring the Meaning of Human Activities

In the field of systematic methodology for solving practical problems using interpretivism, the famous British systems management scientist Peter Checkland established and developed soft system methodology (SSM) in the 1970s based on interpretive social theory. This methodology is mainly applicable to solving complex problem situations with multiple values and interest conflicts. By using this methodology, the true meaning behind human activities in the problem situation can be explored, and on the basis of exploring the meaning, the contradictions and conflicts existing in the problem situation can be coordinated and resolved. This methodology consists of five functional activities, as shown in Figure 1. The five functional activities are as follows [17].

① Perceive the real world problemic situation

② Build concept models of human purposeful activities based on perception, each based on specific worldviews and values

③ Compare the models with the real world problemic situation

④ Organize discussions to seek a feasible action plan

⑤ Produce a feasible action plan and take actions to improve problemic situation

When using soft system methodology to solve problems, the user first needs to intervene in the problem situation as a participant and perceive the possible problems in the problem situation and the different values and worldviews behind them through personal experience. Then, based on their perception of the problem situation, the researcher subjectively constructs conceptual models for the human activities in the problem situation. Each conceptual model represents a specific value, worldview, and interest demand of people in the problem situation. After the model is constructed, it is necessary to compare the conceptual model with the actual activities of people in the real situation. The purpose of the comparison is to test whether the conceptual model is consistent with the behavior of people in the real problem situation. If they are consistent, it indicates that the researcher's understanding of the behavior of people in the problem situation and the meaning behind it (values, worldviews) is accu-

rate; if they are inconsistent, it indicates that there is a deviation between the constructed conceptual model and the actual situation, that is, the understanding is not in place. In this case, the researcher needs to reconstruct the conceptual model and continue the test and comparison. Through repeated modeling and comparison activities, the researcher's understanding of the behavior of people in the problem situation and the meaning behind it (values, worldviews) will become increasingly clear.

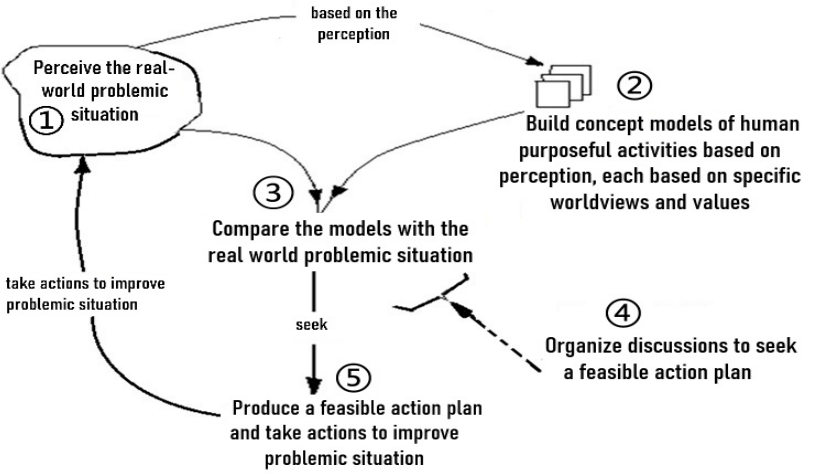


**Fig. 1.** Interpretation of soft system methodology.

After the researcher fully understands various behavior patterns and value demands in the problem situation, it is necessary to organize people in the problem situation to carry out interactive discussions similar to brainstorming. The purpose of the discussion is to find a solution that is acceptable to everyone, in line with organizational needs, and culturally feasible. Finally, this solution is used to improve the problem situation. It is worth noting that in the process of solving problems, since the problem situation is always in dynamic development, the process of using the methodology to solve problems is not achieved overnight but is a process of repeated practice and continuous learning and understanding.

## 7 SHEIN's "Small-batch Quick Replenishment" Business Model

In the traditional apparel industry, the entire product lifecycle—from design to retail—typically involves multiple stages including product development, raw material procurement, manufacturing, warehousing and logistics, and final sales. Without scientific methodologies and technological support, many garment companies have long relied on a conventional model combining "predictive production + mass supply + offline channel dominance." However, as fashion trends rapidly evolve and consumer demands accelerate, systemic pain points have become evident. The most critical issue

stems from information asymmetry across supply chains: a severe disconnect between manufacturers 'production designs and consumers' actual needs, leading to supply-demand mismatches. Fortunately, with digital empowerment in today's landscape, these industry challenges can now be effectively addressed through scientific approaches and data-driven strategies.

SHEIN is a cross-border e-commerce company based in Panyu District, Guangzhou, China, specializing in the production of trendy apparel. Since entering the overseas market in 2015, it has grown at an astonishing pace and has now become a global leader in fast fashion. The secret to its rapid rise is closely tied to its "Small-batch Quick Replenishment" business model. "Small-batch Quick Replenishment" refers to SHEIN's producing only 100-200 pieces per garment style (compared to the industry average of over 5,000 pieces), rapidly testing market reactions through online platforms, and then deciding whether to increase production or eliminate items based on real-time sales data. Essentially, this model transforms the rigid supply chain of traditional "production-driven sales" into a dynamic response system of "sales-driven production". In April 2025, SHEIN's "Midnight Star" black dress collection achieved a monthly global sales milestone of 1.5 million units, setting a new record for fast fashion items. This blockbuster success wasn't merely driven by fleeting traffic trends, but rather the precise implementation of SHEIN's "Small-batch Quick Replenishment" business model after years of iterative refinement [18]. So how did SHEIN pull this off? Let's break it down step by step.

### 7.1 Insight into pain points between supply and demand to identify market opportunities

As early as 2024, SHEIN's fashion team recognized black dresses as the "evergreen" in the fashion industry. The global market for black dresses reached $87 billion that year. They observed severe homogenization among leading brands: traditional fast-fashion giants like ZARA and H&M still relied on "basic silhouettes with simple cuts" for their black dresses, lacking contextualization and personalized designs. Meanwhile, luxury brands struggled to appeal to mainstream consumers due to their high prices (averaging over $200). Through big data analysis, SHEIN identified three unmet demand pain points in this saturated market:

The first pain point stems from consumers 'evolving needs: shifting from "one dress for multiple occasions" to "one dress adaptable across scenarios," while most retailers lack clear scenario-specific product positioning. Data from SHEIN's platform in Q3 2024 reveals a 273% year-on-year surge in searches for "black dress," with distinct scenario-specific trends emerging: "commuter black dress" (32%), "party black dress" (28%), and "vacation black dress" (22%). This indicates consumers no longer settle for "one black dress for all occasions," but require designs with tailored functionalities for different scenarios. However, 90% of black dress products on the market at the time only labeled basic attributes like "slim-fit" or "relaxed-fit" without clear scenario-specific positioning. This resulted in inefficient consumer decision-making, as platform data shows scenario-labeled products achieved 15% higher conversion rates than their unlabeled counterparts.

The second pain point stems from diverging demands among target consumer groups that current products fail to address. Through user profiling analysis, SHEIN identified distinct age stratification patterns for black dress consumers: 16-24-year-olds (38%) prioritize "affordability + trendy elements" with average orders between $20-30; 25-34-year-olds (41%) value "fit + comfort" at $40-60 per purchase; while the smallest group (35-45-year-olds, 21%) boasts a 27% repurchase rate—significantly higher than other demographics. Their core demand lies in balancing "design appeal + cost-effectiveness," with strong preference for features like "washable pearl buttons" and "wrinkle-resistant fabrics" —yet these specific requirements remain underserved in the market.

The third pain point lies in the absence of social sharing functionality. During the 2025 Valentine's Day period, the Black Dress Challenge on TikTok garnered over 3.7 billion views, with users spontaneously sharing outfit videos featuring black dresses that became a trend. SHEIN's market research revealed that 78% of consumers found existing black dresses "lacking shareable appeal" ——either their designs were too basic to stand out in short videos or they featured overly complex decorations (like large-scale sequins) that made them impractical for everyday wear. This contradiction highlights a core demand: consumers want black dresses to combine "daily wearability" with "social sharing" design elements, transforming them from mere clothing into "social currency".

### 7.2 Design clothing styles according to the pain points of demand

To meet the needs of three core scenarios—commuting, parties, and vacations—the design team innovatively adopted a "base skirt + detachable modules" combination model. The base skirt features high-elasticity wrinkle-resistant fabric (78% regenerated polyester, GRS eco-certified) with a cinched A-line silhouette that balances slimming effect and comfort, suitable for various body types. Trial wear data shows a 92% fit rate for sizes 160-175cm tall and 45-65kg weight. The detachable modules include three independent components: ① Pearl button shawl (for party scenes), made of ABS pearl imitation material that retains color after 30 washes, maintaining 98% pearl integrity; ② Sun-protective chiffon outerwear (for vacation scenes), featuring UPF50+ sun protection with lightweight 85g design for portability; ③ Leather belt (for commuting scenes), crafted from PU material with metal buckles to enhance professional appearance.

To enhance the "social currency" attributes of clothing and create memorable social media content, the design team incorporated a "Midnight Star Sky" reflective print—— into the skirt hem. Using eco-friendly reflective ink, it displays subtle dark patterns under natural light and transforms into a dazzling starry effect under flashlights, perfectly adapting to short video shooting scenarios.

### 7.3 Explore market response by small batches

After completing product development, SHEIN didn't rush into mass production. Instead, it initiated a "small-batch testing" phase—the core first step of the

"Small-batch Quick Replenishment" model. The core objective was to "validate market demand at minimal cost." By launching small batches of products, they collected key performance metrics to assess potential for blockbuster success.

The design team first developed a small-scale test plan for the "Midnight Star" black dress collection. The series was divided into three SKUs: Pearl Shawl, Sun-protective Outerwear, and Belt Style, with 40 units tested per category totaling 120 pieces. For distribution channels, SHEIN APP's "New Product Test Zone" and TikTok's "Creator Collaboration Program" were selected to target women aged 18-45 in core markets of North America and Europe, with 60% being users aged 25-34. Pricing strategy adopted a "New Product Discount" to attract early adopters, with a test price of $49.90 ($10 lower than the final price of $59.90). For replenishment order monitoring metrics, five key judgment thresholds were established:

① Traffic conversion index: 24-hour purchase rate≥ 15%,72-hour sales rate≥ 80%

② User feedback indicators: positive comments account for ≥90%, scene satisfaction≥85%

③ Return rate index: return rate ≤8%

### 7.4 Identify popular products and make replenishment order decisions

On March 15,2025, the test of "Midnight Star" series of small orders was officially launched. The market feedback test data are as follows: ① Traffic conversion index: 21% of the purchase rate within 24 hours (exceeding the target by 15%), and 92% of the sales rate within 72 hours (exceeding the target by 80%). Among them, the pearl shawl model was sold out in 48 hours, becoming the "potential best-selling SKU" in the test. ② User feedback metrics: Positive reviews accounted for 94% of total feedback, with keywords including "The reflective print is absolutely amazing", "The detachable design is practical", and "The fabric feels comfortable". In terms of scenario satisfaction, the satisfaction rate was 92% for party settings, 88% for vacation settings, and 81% for commuting scenarios (slightly below the target). ③ Return rate index: the actual return rate is only 5.3% (target 8%), and the main reason for return is "small size" (accounting for 60% of the total return), which provides data support for subsequent size adjustment.

Based on the above test data, SHEIN supply chain team completed the replenishment order decision within 72 hours, including: ① Determine the total amount of replenishment orders: 5,000 pieces of replenishment orders are produced in the first round, among which pearl shawl accounts for 60% (3,000 pieces), sunscreen outerwear accounts for 25% (1,250 pieces), belt accounts for 15% (750 pieces), matching the sales ratio in the last round of testing. ② Adjust clothing size: according to the return data, increase the bust size of M and L by 2cm each, and increase the waist size by 1.5cm to ensure that the matching rate of size is above 95%. ③ Set a fast replenishment order production cycle: it requires to complete the whole process from fabric purchase to finished product delivery within 3 days, which is 57% shorter than the industry average replenishment order cycle of 7 days.

### 7.5 Organize supply chain collaborative operations to achieve rapid replenishment

SHEIN's 30-kilometer supply chain cluster in Panyu, Guangzhou integrates 231 fabric suppliers, 97 garment manufacturers, and 32 accessory providers, enabling localized coordination across the entire production chain from raw materials to finished garments. When the "Midnight Star" black dress series received a re-order request, the cluster responded swiftly. For fabric procurement, Guangzhou Boya Textile, a cluster supplier, completed 3,000 meters of recycled polyester fabric distribution within 8 hours—12 hours faster than non-cluster suppliers. The production phase utilized Dongguan's smart factory equipped with 20 automated assembly lines, achieving full automation from cutting to sewing and ironing. With each line capable of producing 1,200 pieces daily, the factory processed 5,000 orders in just two days using only two lines. Pearl button supplier Panyu Huayi Accessories had pre-stocked 100,000 sets of pearl components, delivering 3,000 sets within four hours to prevent production delays. The first batch of "Midnight Star" garments was completed within three days and officially entered SHEIN's global warehouse system on March 20, one day ahead of schedule, capitalizing on TikTok's Black Dress Challenge trend for market opportunities.

After the initial 5,000 returned orders were listed, market demand continued to surge. SHEIN adopted a "data-driven monitoring-multiple rounds of reorders" expansion strategy, dynamically adjusting production plans through real-time data tracking to maintain supply-demand balance. The "Midnight Stars" collection underwent six rounds of reorders between March 15 and April 30, achieving exponential growth in production scale from 5,000 units to 1.5 million units.

### 7.6 Continue to optimize the product based on user feedback, and extend the product life cycle

SHEIN's "Small-batch Quick Replenishment" model isn't just about returns—it's a continuous product optimization process. Through user feedback data, SHEIN has conducted multiple rounds of optimization and iteration for the "Midnight Star Night" collection to extend the lifecycle of best-sellers. For instance, in functional upgrades: Based on AI-scraped user comment keywords, SHEIN launched three upgraded versions during the fourth return cycle: ①Long Sleeve: Addressing European market demand for longer sleeves, this version accounted for 35% of sales in that market. ②White Pearl: Replacing black pearl buttons with white pearls to attract users preferring fresh styles, achieving a 42% repurchase rate. ③Extended Length: Tailored for Middle Eastern markets by increasing skirt length by 15cm to accommodate headscarf styling, this version saw a 67% weekly sales growth in the Middle East.

Furthermore, in strengthening brand social responsibility and sustainable development, SHEIN upgraded the materials and packaging of its "Midnight Stars" collection during the fifth round of replenishment orders. The upgrade increased the recycled polyester content from 78% to 92%, reducing carbon emissions by 1.2 tons per 10,000 units and earning the European environmental organization's Green Fashion

Certification. By replacing traditional plastic packaging with biodegradable corn fiber, the company cut packaging costs by 8% while boosting eco-friendly customer satisfaction to 28%. Through continuous optimization, the product's lifecycle was extended from 45 days for conventional fast-fashion items to 90 days. As of June 2025, the series has sold over 3 million units, becoming SHEIN's first "million-unit best-selling evergreen item".

## 8 Analysis of the "Small-batch Quick Replenishment" Using Soft System Methodology

From the perspective of soft system methodology, the mode of small-batch quick replenishment is essentially a systematic inquiry approach for SHEIN to organize learning and understanding in target markets. It is quite similar to the ideas of perceiving problems, modeling, comparing, and seeking win-win solutions in soft system methodology, as shown in Figure 2.

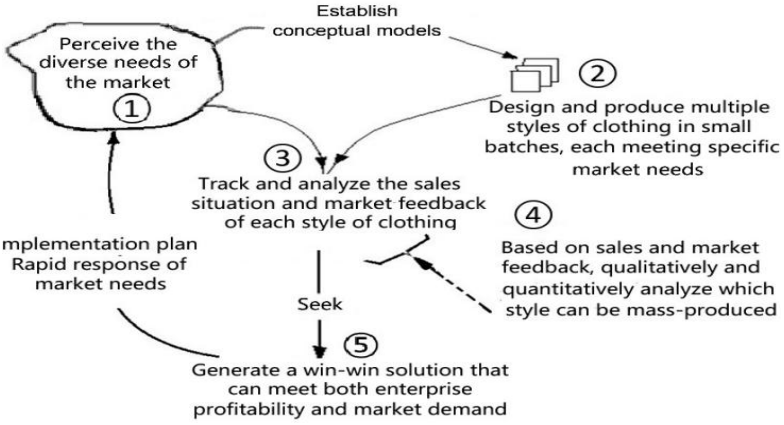


**Fig. 2.** Interpretation of "Small-batch Quick Replenishment" based on Soft Systems Methodology.

### 8.1 Perceive the problemic situation

During the market insight phase, SHEIN's apparel team identified three critical unmet needs in the fiercely competitive black dress market through big data analysis before implementing Small-batch Quick Replenishment: lack of scenario-specific requirements, functional deficiencies, and absence of social attributes. This fundamentally reflects the company's perception of challenges in the global fashion industry. The team's primary mission was to transform these pain points into actionable market opportunities.

## 8.2 Build the concept models

During the conceptual design phase, SHEIN's fashion team innovatively adopted a "base skirt + detachable modules" framework to address market pain points. They developed three specialized styles: pearl shawl, sun-protective outerwear, and belt designs. These models serve as functional prototypes catering to three core lifestyles: daily commuting, social gatherings, and vacation adventures. The garments incorporate "social currency" elements through midnight star reflective details on skirts and hemlines, perfectly aligning with short video content requirements. This approach demonstrates how product teams establish three representative models during development, each reflecting target consumers' expectations for functionality, social relevance, and user experience. While the effectiveness of these innovative prototypes remains unproven, their commercial viability awaits validation through market testing in subsequent evaluation stages.

## 8.3 Compare the concept models with real world

For SHEIN, the comparative phase in methodology involves market testing to evaluate whether its design solutions align with market demands. These test samples help assess consumer acceptance of different product design styles. Positive sales data and market feedback indicate that these designs are well-received by target markets, providing confidence for mass production while reducing inventory risks. Conversely, poor sales performance and negative market reception suggest discrepancies between developed designs and actual market preferences. The testing process requires rigorous data analysis, with SHEIN monitoring five key metrics: traffic conversion rates, user feedback, and return rates to gauge market response. For instance, 94% of user reviews praised features like "the reflective print is amazing" and "the detachable design is practical," confirming the design's success. The 60% return rate primarily stemmed from "smaller-than-desired sizes," revealing discrepancies between initial design dimensions and actual market needs. This data provides crucial insights for future product improvements.

## 8.4 Seek a feasible solution

During the discussion phase, SHEIN's product team must identify best-selling products, optimize design improvements, and make replenishment order decisions based on test results. This involves cross-team collaboration and evidence-based decision-making. The product design team needs to evaluate traffic conversion metrics to determine which item has the potential to become a "hot seller" in testing. They must also calculate the initial replenishment order production ratio by analyzing sales ratios from three clothing items tested. Meanwhile, the supply chain team collaborates with suppliers to establish the shortest production cycle for rapid replenishment orders, enabling swift response to market opportunities arising from TikTok's trending "Black Dress Challenge" campaign.

### 8.5 Implement the feasible solution and sustainablely improve problemic situation

In implementing the solution, SHEIN leverages its robust local supply chain network to efficiently execute production and global distribution. By continuously optimizing material selection and packaging through user feedback, the company enhances products' environmental sustainability, social responsibility, and consumer experience. This approach strengthens customer trust and satisfaction, ultimately extending product lifecycles.

## 9 The Business Implications of SHEIN's Small-batch Quick Replenishment

### 9.1 Regard the identification and selection of CPV as an organized learning activity

From a systems theory perspective, enterprises are open, complex adaptive systems. The "Small-batch Quick Replenishment" business model of SHEIN essentially represents an organized learning process for identifying and selecting customer-perceived value. American management scholar and systems dynamics expert Peter Senge (1990) emphasized the importance of building learning organizations, where systems thinking serves as the soul of such organizations [19]. For cross-border e-commerce companies, identifying and selecting customer-perceived value involves uncovering the underlying motivations behind target customers' purchasing behaviors—a complex learning process requiring systematic thinking and methodologies. During this learning journey, businesses need to establish research paradigms and methodologies tailored to their operational models. The soft system methodology and hermeneutic research paradigm proposed in this paper can serve as valuable references.

### 9.2 Actively invite users to participate in the product design to achieve co-created value

In the knowledge economy era, businesses and consumers have become a "value co-creation community." Cross-border e-commerce companies can drive collaborative value creation through these approaches: ① Build user communities (e.g., Facebook groups, TikTok fan pages) to collect real-time feedback on product design and features; ② Invite key users to participate in design reviews (e.g., providing feedback on clothing styles and appliance functions via online meetings); ③ Continuously improve products based on user feedback (adjusting clothing sizes according to reviews, optimizing digital interface designs). This creates a virtuous cycle of "user needs → product optimization → satisfaction enhancement," maximizing customer-perceived value.

### 9.3 Actively use digital technology to improve the flexible production and rapid response capabilities of the supply chain

In the digital economy era, when enterprises are viewed as open systems far from equilibrium, information and digital technologies emerge as a unique form of negative entropy. These technologies function as "order parameters" in Haken's synergetics theory [20] [21], empowering interconnectedness across all entities while bridging temporal and spatial gaps to drive enterprise self-organization and evolution. A prime example is SHEIN's "Real-Time Trend Insights Platform". This system continuously gathers fashion tags and user behavior data (including clicks, favorites, shares) from over 5,000 global social platforms daily, capturing real-time consumer preferences and trends. AI-powered models analyze this data to generate "Trend Element Reports" within 48 hours, detailing key elements like trending colors, fabrics, and styles to inform product design. Production teams then initiate "small-scale trial runs" based on these reports, making rapid adjustments through sales tracking and feedback analysis. This creates a flexible closed-loop process of "forecasting-trial-production-validation-mass production", enabling SHEIN to dynamically adapt to market changes. The model has significantly improved production efficiency and inventory management capabilities, achieving twice the industry average inventory turnover rate

## 10 Discussion of the Research Limitations

Taking SHEIN as a case, this study uses the soft system methodology to explore the identification and selection path of customer perceived value in cross-border e-commerce enterprises. Although some conclusions have been formed, there are still the following limitations due to the research object, data acquisition and external environment constraints, which provide reflection direction for subsequent research:

### 10.1 Limitations of universality of research objects and conclusions

This study examines the unique characteristics of SHEIN's "fast fashion + B2C" model, with conclusions that may not directly apply to all cross-border e-commerce scenarios. From a product perspective, the Small-batch Quick Replenishment (SBQR) business model is better suited for fast-fashion items like trendy apparel and outdoor gear, but not for luxury brands emphasizing standardization and high-end customization. Supply chain-wise, this approach requires strong time and cost control capabilities, making it unsuitable for companies with fragmented supply chains. Regarding digital empowerment, SBQR demands comprehensive data analytics across design, production, and logistics processes. Consequently, enterprises with weak digital infrastructure face implementation challenges and struggle with frequent order changes.

### 10.2 Limitations of data and research methods

Regarding research data, the operational data of SHEIN (replenishment order threshold, inventory turnover) adopted in this study primarily originates from corporate public reports and industry monitoring, lacking internal primary data, such as detailed supply chain cost breakdowns and user behavior trajectories. This limitation prevents precise quantification of "market feedback bias's influence coefficient on replenishment order decisions" and complicates quantitative analysis of the "comparison phase" in soft system methodology. Methodologically, this study employs a single-case approach without cross-case comparisons (e.g., SHEIN vs. Temu or ZARA) to validate methodological applicability. Additionally, the absence of quantitative empirical research (questionnaires, regression analysis) undermines the statistical significance and external validity of the conclusions.

### 10.3 Limitations of external dynamic environment adaptation

This study is grounded in the current global trade and technological landscape, yet fails to adequately account for shocks from unexpected variables: 1. Policy shifts: The EU's implementation of the Carbon Border Adjustment Mechanism (CBAM) in 2026 and adjustments to U.S. global tariff policies could increase supply chain costs. These developments may erode the cost advantages of "Small-batch Quick Replenishment" models and alter how customers evaluate perceived value.

## 11 Conclusion

In the field of cross-border e-commerce, the identification and selection of customer perceived value is a complex and dynamic process. This paper uses soft system methodology to analyze SHEIN's "small-batch quick replenishment" marketing model and reveals its successful experience in identifying and selecting customer perceived value. At the same time, combining soft system methodology and the interpretivism research paradigm, it puts forward optimization strategies for cross-border e-commerce enterprises to improve the identification and selection of customer perceived value. However, it is worth noting that each cross-border e-commerce enterprise has its own unique target market, supply chain, and business model. Therefore, when implementing the above strategies, enterprises need to make flexible adjustments and innovations in combination with their own actual situations. At the same time, with the continuous progress of science and technology and the constant changes in the market environment, cross-border e-commerce enterprises also need to continuously pay attention to the new development trends of the target market, new scenarios of technical empowerment, and new business models, gradually build a methodology and cognitive model that conform to their own characteristics, and continuously improve their competitiveness and adaptability.

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