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Study on the Mechanisms Through Which Perceived Homogeneity in Recommendations Influences Consumers' Search for Diversity

-- The Mediating Role of Aesthetic Fatigue

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ABSTRACT

Based on the S-O-R (Stimulus-Organism-Response) model, this study explores the mechanism by which perceived recommendation homogeneity influences consumers' diversity-seeking behavior and tests the mediating role of aesthetic fatigue between the two. The study sampled young consumers aged 18-30 who had frequently used Taobao and browsed women's clothing content within the past three months. A total of 270 valid responses were collected via a questionnaire survey. SPSS 27.0 was used to conduct descriptive statistics, reliability tests, common method bias tests, correlation analysis, regression analysis, and Bootstrap mediation tests. The results indicate that perceived recommendation homogeneity has a significant negative impact on consumers' diversity-seeking behavior and a significant positive impact on aesthetic fatigue; aesthetic fatigue has a significant negative impact on diversity-seeking behavior; simultaneously, aesthetic fatigue partially mediates the relationship between perceived recommendation homogeneity and diversity-seeking behavior, with the mediating effect accounting for 40% of the total effect. This study explains the pathway through which algorithmic recommendation homogenization influences consumer exploration behavior from the perspective of micro-psychological mechanisms, providing a theoretical basis and managerial insights for e-commerce platforms to strike a balance between recommendation accuracy and content diversity.

KEYWORDS

Perceived Recommendation Homogeneity; Aesthetic Fatigue; Diversity-Seeking Behavior; Algorithmic Recommendations; S-O-R Model.

1. INTRODUCTION

The S-O-R model posits that external environmental stimuli influence an individual's subsequent behavioral responses through their internal psychological states; this model provides an important theoretical foundation for explaining changes in consumer psychology and behavior within digital platform environments [1]. With the widespread application of algorithmic recommendation technology on platforms such as Taobao, Douyin, and Xiaohongshu, personalized recommendations have become a key mechanism influencing consumers' information exposure, product browsing, and purchasing decisions. Recommendation systems typically infer user preferences based on behavioral data, such as historical browsing, clicks, favorites, and purchases, and provide users with products or content they may be interested in [2]. This mechanism enhances recommendation efficiency, reduces search costs, and improves the alignment between platform content and user needs.

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However, recommendation logic based on historical preferences may also lead to issues such as content repetition, stylistic homogenization, and a narrowing of the exploration scope. Existing research on filter bubbles and content diversity in recommendation systems suggests that personalization mechanisms may, to some extent, limit users' opportunities to encounter heterogeneous information [3,4]. In e-commerce consumption scenarios, if a platform continuously pushes products to consumers that are highly similar in style, price range, and aesthetic, consumers may gradually form the subjective impression that recommended content is always largely the same. Research on popularity bias further illustrates that while platform recommendation mechanisms amplify the exposure of popular content, they may simultaneously diminish the visibility of long-tail content and differentiated products [5].

Compared to information contexts such as news and short videos, the homogenization of recommendations on e-commerce platforms not only affects the scope of information exposure but may also directly alter consumers' aesthetic experiences and exploratory consumption behaviors. Long-term exposure to repetitive aesthetic stimuli reduces individuals' sense of novelty and perceptual sensitivity, and may lead to aesthetic fatigue [6]. When consumers experience visual fatigue, waning interest, or aversion toward platform recommendations, their motivation to continue exploring products of different styles may diminish. Research on diversity-seeking behavior indicates that consumers do not always consistently choose familiar products; rather, they try different brands, categories, or styles motivated by a desire for novelty, to avoid monotony, and to experience variety [7,8]. Therefore, examining how recommendation homogenization influences diversity-seeking behavior in an algorithmic recommendation environment holds significant theoretical and practical value.

Based on the above background, this paper defines perceived recommendation homogeneity as the degree to which consumers subjectively perceive repetition and similarity in the style, form, design, and presentation of recommended content while using e-commerce platforms; aesthetic fatigue is defined as the psychological state, including diminished novelty, waning interest, and visual weariness, that arises from consumers' sustained exposure to homogeneous recommended content; and diversity-seeking behavior is defined as the behavioral tendency of consumers to actively explore products of different styles and types while browsing e-commerce platforms. Using the S-O-R model as a theoretical framework, this study constructs the causal pathway "perceived recommendation homogeneity-aesthetic fatigue-diversity-seeking behavior" and conducts empirical testing using questionnaire data.

2. LITERATURE REVIEW AND THEORETICAL FOUNDATION

This section reviews algorithmic recommendations, recommendation homogenization, aesthetic fatigue, diversity-seeking behavior, and the S-O-R model, providing a theoretical foundation for the subsequent research hypotheses and empirical model construction.

2.1 Algorithmic Recommendations and Perceived Recommendation Homogeneity

Algorithmic recommendations match user behavior data with product attributes to provide users with personalized content or product suggestions [2]. On e-commerce platforms, recommendation systems typically optimize for metrics such as click-through rate, conversion rate, and user dwell time; consequently, they tend to continuously push content highly relevant to users' existing interests. While this recommendation logic improves matching efficiency, it may also reduce content diversity, causing users to repeatedly encounter similar products.

Recommendation homogeneity can manifest both as objective content repetition and as a subjective perception of similarity. This paper focuses on the homogeneity of recommendations as perceived by consumers, rather than the technical structure of the platform's algorithms themselves. This is because

consumer behavioral responses are often not directly determined by algorithmic mechanisms but are driven by consumers' interpretations and perceptions of the recommended results. When consumers perceive platform recommendations as always similar in style, lacking variety, or repeatedly appearing, their psychological evaluations and subsequent browsing intentions may be affected.

Therefore, perceived recommendation homogeneity can be regarded as an external stimulus variable in the algorithmic recommendation environment. This variable emphasizes consumers' subjective evaluations of the repetitiveness, monotony, and similarity of recommended content, and can more directly explain consumers' emotional reactions and behavioral changes on e-commerce platforms.

2.2 Aesthetic Fatigue

Aesthetic fatigue typically refers to a state in which an individual experiences diminished novelty, waning interest, and desensitization following prolonged, repetitive exposure to similar aesthetic objects. This concept was originally applied in the study of artistic aesthetics and visual communication, emphasizing that repetitive stimuli may weaken an individual's sensitivity to aesthetic objects [6]. With the development of digital platforms and algorithmic content distribution mechanisms, aesthetic fatigue has gradually come to explain users' psychological reactions when confronted with a large volume of similar images, videos, or products in online environments.

On e-commerce platforms, product images, model presentations, headline styles, and visual layouts collectively constitute sources of aesthetic stimulation for consumers. When platforms continuously push highly similar women's clothing styles or designs, consumers may no longer experience a sense of novelty but instead develop psychological feelings such as having seen similar content too many times, believing that products all look alike, or being unwilling to keep scrolling. This state is not merely simple visual fatigue; it also involves a decline in interest and a reduction in aesthetic evaluation ability.

This paper treats aesthetic fatigue as an internal psychological state variable of consumers and posits that it serves as a key mediating mechanism through which perceived recommendation homogeneity influences behavioral responses. In other words, the similarity of recommended content does not necessarily lead directly to reduced exploration by consumers; rather, it may first trigger fatigue, weariness, and waning interest, which in turn affect their willingness to continue browsing and trying different products.

2.3 Diversity-Seeking Behavior

Diversity-seeking behavior is a classic concept in consumer behavior research, typically referring to consumers' tendency to actively try different products, brands, flavors, or styles during the selection process [7]. Relevant studies suggest that diversity-seeking stems not only from changes in functional needs but is also influenced by factors such as novelty, exploratory motivation, emotional regulation, and the desire to avoid monotony [8]. In the context of apparel consumption, consumers' diversity-seeking behavior primarily manifests as actively browsing different styles, trying on different designs, comparing different types of products, and being willing to purchase items that do not fully align with their usual preferences.

In traditional consumption environments, diversity-seeking is primarily influenced by product attributes, consumer personality, and purchasing contexts. In the digital platform environment, algorithmic recommendations have become a significant force in shaping consumers' choice sets. On the one hand, algorithms can help consumers find products that match their preferences more quickly; on the other hand, overly similar recommendations may narrow the range of visible choices available to consumers, thereby affecting their exposure to and trial of differentiated products.

This paper treats diversity-seeking behavior as a behavioral response variable, focusing on whether consumers are willing to actively explore different styles and types of products while browsing

women's clothing on Taobao. This variable reflects consumers' exploration activity in an algorithmic recommendation environment and illustrates the potential impact of platform recommendation strategies on the consumer experience.

2.4 The S-O-R Model and Research Framework

The S-O-R model consists of three components: stimulus, organism, and response. Here, the stimulus refers to external environmental factors; the organism refers to the individual's internal psychological state; and the response refers to the attitude or behavior ultimately exhibited by the individual [1]. This model is suitable for explaining how the external information environment on digital platforms influences behavioral outcomes through users' psychological mechanisms.

In the context of this study, perceived recommendation homogeneity serves as an external stimulus, reflecting consumers' perception of the repetitiveness and similarity of platform recommendations; aesthetic fatigue represents the organismic state, reflecting the psychological weariness consumers experience when faced with repetitive recommendations; and diversity-seeking behavior constitutes the behavioral response, reflecting consumers' willingness and tendency to continue exploring different products. Based on this, this study constructs a mediating model in which perceived recommendation homogeneity influences diversity-seeking behavior.

3. RESEARCH HYPOTHESES

Based on the literature review and the S-O-R theoretical framework, this study proposes research hypotheses regarding the relationships among perceived recommendation homogeneity, aesthetic fatigue, and diversity-seeking behavior.

3.1 Perceived Recommendation Homogeneity and Diversity-Seeking Behavior

Recommendation systems typically push content based on users' existing interests and preferences. If consumers are exposed to product recommendations with similar styles and repetitive designs over an extended period, their sense of novelty regarding the platform's content may diminish, thereby reducing their interest in actively exploring different products. Existing research on content diversity in recommendation systems indicates that personalized recommendations may gradually narrow the range of content users are exposed to [4]. Therefore, when consumers perceive recommendation content to be highly homogeneous, their diversity-seeking behavior may be inhibited.

H1: Perceived recommendation homogeneity has a significant negative impact on consumers' diversity-seeking behavior.

3.2 Perceived Recommendation Homogeneity and Aesthetic Fatigue

Prolonged and repetitive exposure to similar aesthetic objects tends to reduce an individual's aesthetic sensitivity and level of interest [6]. On e-commerce platforms, if consumers continuously see similar styles of women's clothing, similar visual styles, and repetitive recommended content, they may experience visual fatigue and psychological boredom. Thus, the stronger the perceived homogeneity of recommendations, the more likely consumers are to experience aesthetic fatigue.

H2: Perceived recommendation homogeneity has a significant positive effect on consumer aesthetic fatigue.

3.3 Aesthetic Fatigue and Diversity-Seeking Behavior

Diversity-seeking behavior requires a certain degree of novelty, interest, and exploratory motivation. When consumers experience aesthetic fatigue, their attention to platform recommendations and

willingness to continue browsing may decline, thereby reducing their proactive attempts to try products of different styles. In other words, aesthetic fatigue may cause consumers to shift from active exploration to passive browsing or even avoidance of platform content.

H3: Aesthetic fatigue has a significant negative effect on consumers' diversity-seeking behavior.

3.4 The Mediating Role of Aesthetic Fatigue

According to the S-O-R model, external stimuli typically influence behavioral responses through an individual's internal psychological states [1]. In the model presented in this paper, perceived recommendation homogeneity, as an external stimulus, may first trigger consumers' aesthetic fatigue; aesthetic fatigue, as a psychological state, further reduces consumers' willingness to continue exploring different products. Therefore, aesthetic fatigue may mediate the relationship between perceived recommendation homogeneity and diversity-seeking behavior.

H4: Aesthetic fatigue mediates the relationship between perceived recommendation homogeneity and consumers' diversity-seeking behavior.

4. RESEARCH DESIGN

This study employed a questionnaire survey to collect data and used statistical analysis to examine the relationships among variables and the mediating mechanism.

4.1 Research Participants and Sample Source

This study focuses on young consumers aged 18-30, with particular attention to their platform experiences and consumption exploration behaviors in the context of Taobao's women's apparel recommendations. This demographic was selected primarily because young consumers are frequent users of e-commerce platforms and algorithmic recommendations, and are relatively sensitive to changes in product visual styles and recommended content.

The questionnaire was distributed via the Wenjuanxing platform and disseminated using a snowball sampling method. To ensure the sample was representative of the research context, two screening criteria were established: first, respondents must have browsed the Taobao platform at least three times per week over the past three months; second, respondents must have actively browsed or searched for women's apparel-related content. A total of 270 valid questionnaires were collected, resulting in a valid sample size of 270.

Sample characteristics show that respondents' ages were concentrated between 18 and 30; 84% had been using the Taobao platform for more than three years; and 30% browsed Taobao 10 or more times per week. This indicates that the sample as a whole possesses a high level of platform usage experience and consumer engagement, enabling it to accurately reflect consumers' genuine perceptions in the context of Taobao's women's clothing recommendations.

4.2 Variable Measurement

This study primarily focuses on three core variables: perceived recommendation homogeneity, aesthetic fatigue, and diversity-seeking behavior. The questionnaire employed a 5-point Likert scale, where 1 indicates "strongly disagree" and 5 indicates "strongly agree." The items for each variable were adapted from established literature on recommender systems, aesthetic response, and variety-seeking behavior, and were revised to fit the context of Taobao women's clothing recommendations [2,6-8]. To enhance measurement transparency, all twelve measurement items are listed in Table 1.

Table 1. Measurement Items and Sources

Variable	Code	Measurement Item	Source and Adaptation Basis
Perceived Recommendation Homogeneity	PRH1	The women's clothing styles Taobao recommends to me all look very similar.	Adapted from recommender-system and content-diversity research [2,4].
Perceived Recommendation Homogeneity	PRH2	The women's clothing recommendations I see while scrolling often repeat themselves.	Adapted from recommender-system and content-diversity research [2,4].
Perceived Recommendation Homogeneity	PRH3	The recommended women's clothing items on Taobao are highly similar in style and design.	Adapted from recommender-system and content-diversity research [2,4].
Perceived Recommendation Homogeneity	PRH4	Taobao's women's clothing recommendations lack sufficient variety.	Adapted from recommender-system and content-diversity research [2,4].
Aesthetic Fatigue	AF1	After seeing many women's clothing recommendations on Taobao, I feel a certain degree of visual fatigue.	Adapted from aesthetic-stimulus and aesthetic-fatigue research [6].
Aesthetic Fatigue	AF2	I feel tired of the women's clothing styles Taobao recommends to me.	Adapted from aesthetic-stimulus and aesthetic-fatigue research [6].
Aesthetic Fatigue	AF3	Repeated exposure to similar women's clothing recommendations reduces my sense of freshness.	Adapted from aesthetic-stimulus and aesthetic-fatigue research [6].
Aesthetic Fatigue	AF4	When browsing Taobao's women's clothing recommendations, I sometimes lose interest because the content looks too similar.	Adapted from aesthetic-stimulus and aesthetic-fatigue research [6].
Diversity-Seeking Behavior	DSB1	I tend to try different styles of women's clothing.	Adapted from variety-seeking behavior research [7,8].
Diversity-Seeking Behavior	DSB2	Even if I have a favorite style, I still want to browse other types of women's clothing.	Adapted from variety-seeking behavior research [7,8].
Diversity-Seeking Behavior	DSB3	When shopping online, I am willing to explore women's clothing items that differ from my usual preferences.	Adapted from variety-seeking behavior research [7,8].
Diversity-Seeking Behavior	DSB4	I like comparing different styles and categories of women's clothing before making a decision.	Adapted from variety-seeking behavior research [7,8].

Age and length of platform use were included as control variables to reduce the influence of individual differences on model estimation results.

4.3 Data Analysis Methods

This study used SPSS 27.0 to conduct statistical analysis of the questionnaire data. First, descriptive statistics were used to analyze the basic characteristics of the sample; second, Cronbach's α was used to test the reliability of the scale, and content analysis of the items was conducted to assess construct validity; third, correlation and regression analyses were used to examine the relationships among

variables; finally, the Bootstrap method was employed to test the mediating effect of aesthetic fatigue on the relationship between perceived recommendation homogeneity and diversity-seeking behavior.

In the model testing, this paper treats age and duration of platform use as control variables to enhance the robustness of the regression estimates. Perceived recommendation homogeneity serves as the independent variable, aesthetic fatigue as the mediating variable, and diversity-seeking behavior as the dependent variable.

4.4 Test for Common Method Bias

Since all data in this study are derived from the same questionnaire, common method bias may be present. This study employs Harman's one-factor test for preliminary assessment; this method is commonly used to examine systematic biases that may arise from homogeneous data in questionnaire-based research [9]. The results show that, without rotation, the variance explained by the first common factor did not exceed 40%, indicating that this study does not exhibit severe common method bias and that the data are suitable for subsequent statistical analysis.

5. ANALYSIS OF EMPIRICAL RESULTS

This section reports, in order, the results of descriptive statistics, reliability and validity tests, correlation analysis, regression analysis, and mediation effect tests.

5.1 Descriptive Statistical Analysis

A total of 270 valid questionnaires were collected for this study. The sample's age was concentrated between 18 and 30 years old, consistent with the study's focus on young consumers. Among the respondents, 84% had been using the Taobao platform for more than three years, and 30% browsed Taobao more than 10 times per week. Overall, the respondents had extensive experience using e-commerce platforms, were quite familiar with Taobao's recommended content, and were able to effectively answer questions related to recommendation homogeneity, aesthetic fatigue, and diversity-seeking behavior.

Table 2. Basic Characteristics of the Sample

Item	Results	Description
Valid Sample Size	270	All questionnaires met the screening criteria
Age Range	18-30 years old	Aligns with the research focus on young consumers
Years of Taobao Usage	84% of users have used Taobao for 3 years or more	The sample has significant experience using the platform
Browsing Frequency	30% of users browse Taobao 10 or more times per week	The sample has a high level of e-commerce engagement

5.2 Reliability and Validity Testing

To test the internal consistency of the scales, this study employed Cronbach's α coefficient for reliability analysis. Generally, a Cronbach's α coefficient greater than 0.70 indicates that a scale has acceptable internal consistency [10]. The results show that the Cronbach's α coefficient for the Perceived Recommendation Homogeneity Scale was 0.88, for the Aesthetic Fatigue Scale it was 0.92, and for the Diversity-Seeking Behavior Scale it was 0.78. All values were above 0.70, indicating that the measurement of each variable has good reliability.

In terms of validity, each measurement item was designed around the core connotations of its corresponding variable and effectively reflects the theoretical meanings of perceived recommendation homogeneity, aesthetic fatigue, and diversity-seeking behavior. Therefore, the scales developed in this study possess good content validity and a sound theoretical foundation, and can be used for subsequent empirical analysis.

Table 3. Results of Scale Reliability Tests

Variable	Number of Items	Cronbach's α	Reliability Assessment
Perceived Recommendation Homogeneity	4	0.88	Good
Aesthetic Fatigue	4	0.92	Good
Diversity-Seeking Behavior	4	0.78	Acceptable

5.3 Correlation Analysis

To preliminarily examine the relationships among the variables, this study conducted a correlation analysis of perceived recommendation homogeneity, aesthetic fatigue, and diversity-seeking behavior. The results indicate that perceived recommendation homogeneity is significantly positively correlated with aesthetic fatigue, significantly negatively correlated with diversity-seeking behavior, and that aesthetic fatigue is also significantly negatively correlated with diversity-seeking behavior. These findings are consistent with the research hypotheses and provide a foundation for further regression analysis and mediation effect testing.

Table 4. Summary of Variable Correlations

Variable Relationship	Direction of Correlation	Significance	Hypothesized Direction
Perceived Recommendation Homogeneity-Aesthetic Fatigue	Positive correlation	Significant	Consistent with H2
Perceived Recommendation Homogeneity-Diversity-Seeking Behavior	Negative correlation	Significant	Consistent with H1
Aesthetic Fatigue-Diversity-Seeking Behavior	Negative correlation	Significant	Consistent with H3

5.4 Regression Analysis and Hypothesis Testing

To further examine the relationships among the variables, this study employed regression analysis to test the research hypotheses. The results show that perceived recommendation homogeneity has a significant negative effect on diversity-seeking behavior ($\beta = -0.30$, $p < 0.001$), indicating that as consumers perceive recommended content to become increasingly repetitive and monotonous, their propensity to actively try products of different styles decreases significantly, supporting H1.

Perceived recommendation homogeneity has a significant positive effect on aesthetic fatigue ($\beta = 0.64$, $p < 0.001$), indicating that prolonged exposure to repetitive recommendation content tends to elicit psychological reactions in consumers, such as visual fatigue, a decline in novelty, and waning interest; H2 is supported. Aesthetic fatigue has a significant negative effect on diversity-seeking behavior ($\beta = -0.34$, $p < 0.001$), indicating that once consumers experience aesthetic fatigue, their willingness to actively explore and try products of different styles further decreases; H3 is supported.

Table 5. Results of Regression Analysis

Hypothesis	Path	Standardized Coefficient β	p-value	Test Result
H1	Perceived Recommendation Homogeneity → Diversity-Seeking Behavior	-0.30	< 0.001	Supported
H2	Perceived Recommendation Homogeneity → Aesthetic Fatigue	0.64	< 0.001	Supported
H3	Aesthetic Fatigue → Diversity-Seeking Behavior	-0.34	< 0.001	Supported

5.5 Testing the Mediating Effect

To test the mediating role of aesthetic fatigue between perceived recommendation homogeneity and diversity-seeking behavior, this study employed the Bootstrap method for mediating effect analysis. The Bootstrap method estimates confidence intervals for indirect effects through repeated sampling and is a commonly used statistical method in mediating effect tests [11]. The results show that the direct effect of perceived recommendation homogeneity on diversity-seeking behavior is -0.18, with a 95% confidence interval of [-0.28, -0.08]; the indirect effect is -0.12, with a 95% confidence interval of [-0.18, -0.06]. Neither confidence interval included 0, indicating that both the direct and indirect effects were significant.

Furthermore, the total effect was -0.30, with the mediating effect accounting for 40% of the total effect. This suggests that after continuous exposure to homogeneous recommendations, consumers first experience psychological reactions such as aesthetic fatigue, and this psychological state further reduces their diversity-seeking behavior. Therefore, aesthetic fatigue plays a partial mediating role in the process by which perceived recommendation homogeneity influences consumer behavior, and H4 is supported.

Table 6. Results of the Bootstrap Mediation Test

Effect Type	Effect Value	95% Confidence Interval	Conclusion
Direct Effect	-0.18	[-0.28, -0.08]	Significant
Indirect Effect	-0.12	[-0.18, -0.06]	Significant
Total Effect	-0.30	—	Significant
Proportion of the Mediating Effect	40%	—	Partial mediation

6. DISCUSSION

Using the S-O-R model as a theoretical framework, this study verified the mechanism through which perceived recommendation homogeneity influences diversity-seeking behavior and revealed the psychological mediating role played by aesthetic fatigue in this process.

6.1 Theoretical Discussion

First, the results indicate that perceived recommendation homogeneity significantly reduces consumers' diversity-seeking behavior. This suggests that, in an algorithmic recommendation environment, consumers' exploratory behavior is influenced not only by their own preferences but also by the structure of content presented by the platform. When recommended content exhibits a high degree of repetition and similarity, consumers' opportunities to encounter differentiated products

and their interest in exploring them may both decline. This finding adds to the existing body of research on content diversity in recommendation systems within e-commerce consumption contexts.

Second, perceived recommendation homogeneity significantly increases aesthetic fatigue. This finding suggests that the negative impact of recommendation homogeneity is not limited to a narrowing of the information scope but also manifests specifically as psychological fatigue at the aesthetic level. For women's apparel consumption, product visual style, design, and presentation are key factors influencing the consumer experience; persistent and repetitive visual stimuli can easily lead to consumer boredom and a decline in interest.

Finally, aesthetic fatigue partially mediates the relationship between perceived recommendation homogeneity and diversity-seeking behavior. This suggests that perceived recommendation homogeneity can both directly inhibit consumers' diversity-seeking behavior and exert an indirect influence through aesthetic fatigue. This finding further validates the applicability of the S-O-R model in algorithmic recommendation and digital consumption contexts and incorporates aesthetic fatigue into the research framework for consumer behavior in recommendation systems.

6.2 Implications for Practice

First, while e-commerce platforms strive to improve the accuracy of their recommendations, they should also focus on the diversity of recommended content. Overreliance on users' historical preferences may boost click-through rates in the short term, but in the long run, it may lead to content fatigue and a decline in exploratory consumption. Platforms can appropriately include products with more distinct styles in their recommendation lists to enhance consumers' sense of novelty.

Second, platforms should reduce the frequency of repetitive recommendations. For similar products that users have viewed multiple times but have not clicked on or purchased, platforms can reduce the exposure of such content and instead provide complementary or exploratory product recommendations to alleviate aesthetic fatigue.

Third, merchants and platform operators can enhance the consumer experience through diverse visual presentations. For example, in women's apparel recommendations, they can increase the display of different scenarios, styling options, and style tags, allowing consumers to maintain interest alignment while gaining a richer selection.

7. CONCLUSION AND FUTURE RESEARCH DIRECTIONS

This section summarizes the main conclusions, theoretical contribution, practical value, and future research directions.

7.1 Research Findings and Contributions

Based on 270 valid questionnaires from young Taobao users, this study confirms that perceived recommendation homogeneity is an important antecedent of changes in consumers' psychological state and exploration behavior. The empirical results show that perceived recommendation homogeneity significantly increases aesthetic fatigue and significantly reduces diversity-seeking behavior, while aesthetic fatigue also significantly reduces diversity-seeking behavior. The mediation test further indicates that aesthetic fatigue partially explains the pathway through which perceived recommendation homogeneity affects consumers' diversity-seeking behavior, with the mediating effect accounting for 40% of the total effect.

The main theoretical contribution of this study lies in extending the S-O-R model to the context of algorithmic recommendation and e-commerce consumption. Specifically, perceived recommendation homogeneity is conceptualized as an external platform stimulus, aesthetic fatigue as an internal

organismic state, and diversity-seeking behavior as a consumer response. This framework clarifies how repetitive and homogeneous recommendation environments may influence consumer behavior through a micro-psychological mechanism rather than only through objective information exposure.

The study also enriches research on consumer diversity-seeking behavior. Previous discussions of diversity seeking have often emphasized consumers' individual traits, product attributes, or situational motivations. By introducing aesthetic fatigue as a mediating variable, this study shows that platform-driven visual and content structures may weaken consumers' willingness to explore diverse products. This finding highlights the behavioral consequences of recommendation homogeneity in digital consumption environments.

In practical terms, the findings suggest that e-commerce platforms should not pursue recommendation accuracy at the expense of content diversity. Recommendation strategies that repeatedly expose consumers to highly similar products may undermine novelty, increase fatigue, and reduce exploratory engagement. Therefore, platforms and merchants should combine preference matching with controlled diversity, differentiated visual presentation, and lower repetition frequency to maintain consumers' long-term browsing interest and exploratory willingness.

7.2 Research Limitations and Future Research

Although this study has reached certain conclusions, several limitations remain. First, the use of cross-sectional survey data makes it difficult to fully capture the dynamic changes in consumers' psychological states and behavioral responses. Future research could incorporate experimental methods or longitudinal tracking data to further validate the causal relationships among recommendation homogeneity, aesthetic fatigue, and diversity-seeking behavior.

Second, the study's participants were primarily young consumers aged 18-30, and the research scenario focused on the women's apparel category on Taobao. Future research could be expanded to include different age groups, platforms, and product categories to test the applicability of the study's findings.

Finally, this study examined only the mediating role of aesthetic fatigue. Future research could further incorporate variables such as algorithmic trust, information overload, perceived control, and user engagement to construct a more comprehensive model explaining consumer behavior in an algorithmic recommendation environment.

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