

## Presenting Innovative Solutions in Response to Variety-Seeking Behavior in Online Retail Customers

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### ABSTRACT

**Objective:** Owners and managers of online retail stores, along with researchers, consistently strive to identify success factors in the online retail domain. One significant factor in the success of online retail stores is attention to consumer behavior. The aim of this research was to present innovative solutions for recognizing variety-seeking behavior in online retail customers.

**Methodology:** This study was applied-descriptive and of the survey type. The research was conducted in two stages. Initially, innovation criteria were extracted from the literature, followed by an examination of the criteria's impact intensity and the causal relationships between them using the DEMATEL technique and MATLAB software, with the tool of pairwise comparison matrices.

**Findings:** The results of the study demonstrated that product innovation, service innovation, process innovation, innovation in online services, and innovation in tools play an effective role in the variety-seeking behavior of online retail customers. Furthermore, the results specified that product innovation, tools and equipment, processes, online services, and after-sales services have the most significant impact on the variety-seeking behavior of customers, in that order.

**Conclusion:** Given the results of the study, it seems that the use of ideation, innovation, creativity in production, presentation, and sale in online retail is essential. In other words, it is necessary for manufacturers of goods and service providers to use new and innovative ideas in the production and presentation of goods and services to be an appropriate response to the needs and variety-seeking behavior of customers.

**Keywords:** Innovation, Variety-Seeking Behavior, Customers, Retail.

### 1 Introduction

Today's market competition, compared to the past, has greater breadth and diversity, and many companies are striving to develop suitable competitive strategies to create

conditions for growth and progress. One of these strategies is paying more attention to impulse buying (Toolabi et al., 2020).

In everyday life, when consumers are faced with various selectable products, although they can repeatedly choose

their favorite products, they often select products from different categories, which is considered as variety-seeking. Therefore, businesses must identify and examine the causes of variety-seeking behaviors related to consumption in their customers (Zhang, 2022).

An important factor in the success of marketing strategies and advertisements is a correct understanding of consumer behavior. Today, marketing researchers rely more on the cognitive theory of emotions to describe consumer behavior. With the population expansion and consequently the expansion of service industries in recent years, competition in retail, especially in chain stores, has intensified more than ever. Especially at the current time when retail stores have allocated a larger share of the service market to themselves in terms of sales (Sohrabi & Aghighi, 1397).

Today, there have been many changes in the values and culture of consumers, and consumers have developed different interests and preferences for goods and services, increasing the diversity of consumer choices. Various organizations offer diverse and after-sales services, the advertising space of organizations has expanded with modern advertising tools, and when a consumer enters the environment to buy goods or services, they are faced with a variety of environmental, service, socio-human, and advertising signs that affect their attitude (Mehrabpour et al., 2019).

Today's organizations, in a highly competitive environment, face numerous issues such as rapid and unpredictable environmental changes, changes in customer tastes, and demands for high-quality products, forcing organizations to choose one of two available options. The first choice is to succumb to defeat and extinction in the turbulent competitive environment, and the second choice is to make fundamental changes to stay in the competitive environment. Therefore, organizations are constantly looking for ways to enhance creativity and innovation and eliminate their barriers (Salehian et al., 2021).

Ultimately, the purpose of this research is to determine what innovations are necessary in response to the variety-seeking behavior of customers.

## 2 Methods and Materials

This study is descriptive-survey in terms of method and applied in terms of objective. The data collection of the current research was conducted in two stages. Initially, a comprehensive and systematic review based on an in-depth library study on innovation and the role of innovation in

customers' variety-seeking behaviors was performed, followed by identifying factors affecting innovation using the DEMATEL approach, which is a subset of soft operational research techniques, by experts. Also, the interaction level and the impact of factors on each other were analyzed.

It is worth mentioning that the experts of this study for the examination of the pairwise comparison matrix consisted of twelve university professors, researchers, and managers in the fields of business, marketing, and entrepreneurship, with criteria for participation being a history of academic and research work in commerce, marketing, customer behavior, and also a history of working in the field of online business. In the current study, content validity (confirmation of the quality and quantity of questions by experts and professors related to the research field) was used for validity determination.

The DEMATEL method or (Decision Making Trial and Evaluation Laboratory) is a type of decision-making technique based on pairwise comparison, first introduced in the late 1971 by Gabus and Fontela. The DEMATEL technique has been widely used in various fields, making it suitable for managers to use in multi-criteria decision-making. When the DEMATEL approach is used as part of combined decision-making models, its results can influence the final decision. The DEMATEL technique is based on diagrams that can divide involved factors into cause and effect groups, clarify the relationships among them and the limitations of these relationships in an understandable structural model. Additionally, this method displays important and unimportant relationships of factors and criteria of the system through a diagram and also facilitates showing these relationships in a network map.

Steps of the DEMATEL approach:

- 1- Designing a questionnaire and collecting information on relative dependencies of indices from experts
- 2- Calculation of the direct relation matrix (Z)
- 3- Calculation of the normalized direct relation matrix (S)
- 4- Calculation of the total relation matrix (direct and indirect dependencies) (T)
- 5- Calculation of the normalized total relation matrix with an acceptance threshold
- 6- Formation of network relation mapping based on R and D vectors.

## 3 Findings and Results

In the first step, the main criteria and sub-criteria related to innovation in the variety-seeking behavior of customers

were extracted. The extracted criteria from the research literature were as follows:

**Table 1**

*Criteria and Their Abbreviations*

Order	Criteria Names	Abbreviation
1	Innovation in Products	C1
2	Innovation in Services	C2
3	Innovation in Processes	C3
4	Innovation in Online Services	C4
5	Innovation in Tools and Equipment	C5

A survey matrix was prepared from the sub-criteria extracted in the previous step, such that the rows and columns of this matrix were formed by the sub-criteria themselves. The initial matrix, according to the questionnaire, was provided to the experts, and they were asked to enter numerical values between zero to four in the corresponding cells for the impact intensity of row factors (A) on column factors (B), where these numbers imply the following meanings:

Zero (0): Factor (A) has no impact on factor (B).

One (1): Factor (A) has a minor impact on factor (B).

Two (2): Factor (A) is effective on factor (B).

Three (3): Factor (A) has a relatively high impact on factor (B).

Four (4): Factor (A) has a significant impact on factor (B).

Then, the matrices obtained from the second step were collected, and the existence or non-existence of a relationship between every two factors was decided upon by the majority opinion of the experts. If more than half of the expert group members identified the intensity of a row factor (A) on a column factor (B) as zero (0), it confirms the effectiveness of the row factor (A) on the column factor (B), and the same amount of votes for scores more than zero in a matrix cell confirms the direct impact of the row factor (A) on the column factor (B).

Then, the median of the scores given by the experts to the direct impact of the sub-criterion row (A) on the sub-criterion column (B) was determined for each of the relationships confirmed in the previous step.

**Table 2**

*Matrix X for Main Criteria*

	A	B	C	D	F
A	0.00	3.50	4.00	3.50	3.50
B	3.50	0.00	3.50	3.00	3.00
C	3.50	4.00	0.00	3.50	4.00
D	3.00	3.00	3.00	0.00	4.00
F	4.00	3.00	3.00	4.00	0.00

**Table 3**

*Matrix M for Normalized Direct Relations*

	C1	C2	C3	C4	C5
C1	0.000	0.233	0.267	0.233	0.233
C2	0.233	0.000	0.233	0.200	0.200
C3	0.233	0.267	0.000	0.233	0.267
C4	0.200	0.200	0.200	0.000	0.267
C5	0.267	0.200	0.200	0.267	0.000

**Table 4**

*Matrix S for Main Criteria*

	C1	C2	C3	C4	C5
C1	2.47884	2.590626	2.614	2.67018	2.738969
C2	2.45788	2.198117	2.389164	2.437318	2.50019
C3	2.73128	2.67223	2.463258	2.732921	2.824059
C4	2.430581	2.357119	2.359053	2.265955	2.538561
C5	2.613678	2.493468	2.496632	2.617017	2.472191

**Table 5**

*Values of J, R, R+J, and R-J*

	R	J	R+J	R-J
C1	12.126	11.779	23.905	0.347
C2	11.116	11.412	22.528	-0.296
C3	12.424	11.422	23.846	1.002
C4	11.085	11.790	22.875	-0.705
C5	11.760	12.107	23.867	-0.348

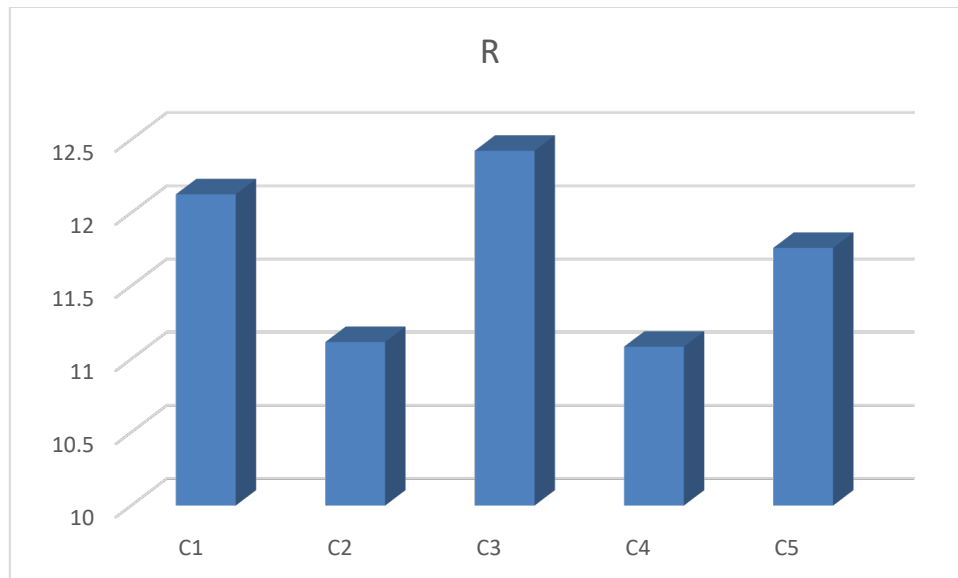
**Table 6**

*Final Influence Order of Each Criterion on Other Criteria and Their Final Importance Order in the System*

Order	Priority Based on Interaction (R+J)	Order	Priority Based on Net Impact/Influence (R-J)
1	C1	23.90487	1
2	C5	23.86696	2
3	C3	23.84585	3
4	C4	22.87466	4
5	C2	22.52756	5

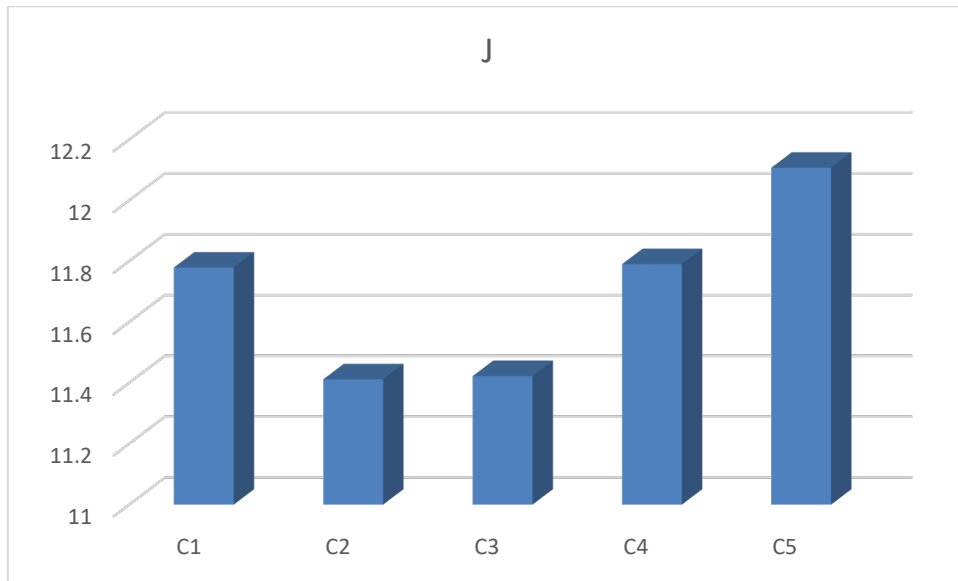
**Figure 1**

*The Order of Impact of Sub-Criteria on Each Other*



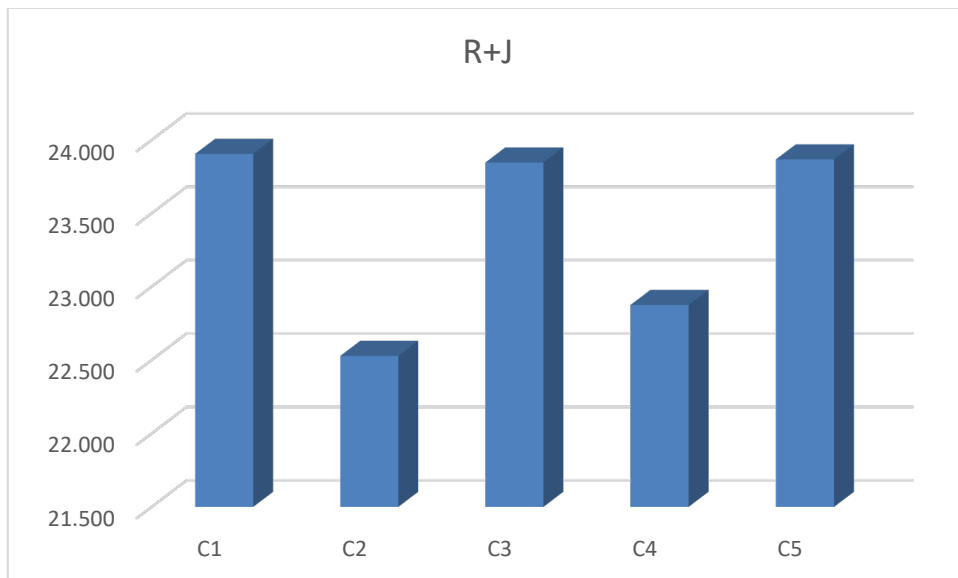
**Figure 2**

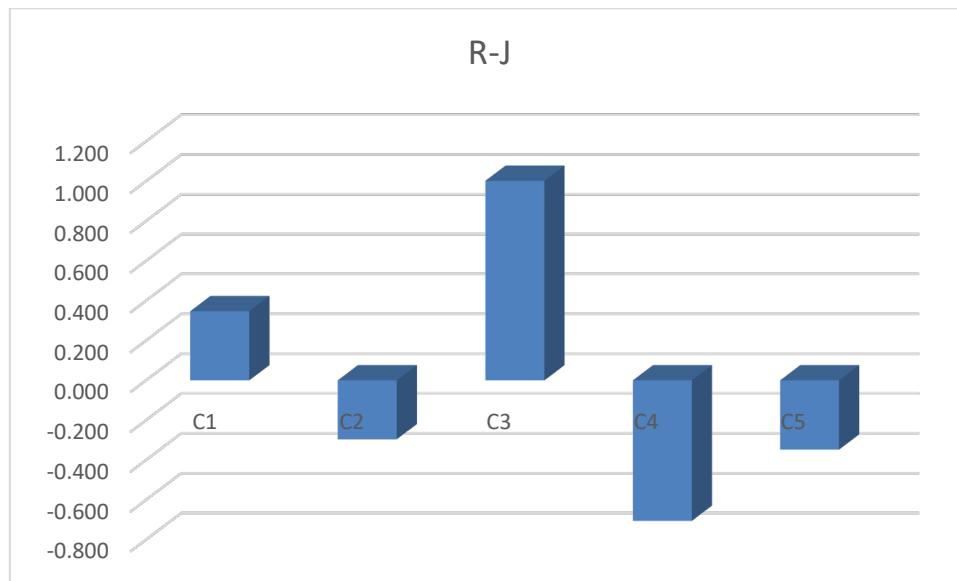
*The Order of Susceptibility of Sub-Criteria to Each Other*



**Figure 3**

*Priority Weighting Based on Interaction*



**Figure 4***Priority Based on the Severity of Impact/Influence*

#### 4 Discussion and Conclusion

As the results of this study indicated, innovation in products is one of the effective factors on variety-seeking behavior among customers in online retail. In other words, when the selection of goods and services in online retail increases, variety-seeking among customers is strengthened. It is worth noting that the study's results showed that product innovation has the most significant impact on the variety-seeking behavior of customers. The findings of this study are consistent with the prior research (Chen et al., 2016; Lee & Sergueeva, 2017; Sela et al., 2019; Zhang, 2022; Zhao et al., 2021). Given that product innovation has the most significant effect on the variety-seeking behavior of customers, according to the research results, manufacturers of goods and services should pay special attention to the diversity of products and goods in production.

Another result of the study was that innovation in services enhances variety-seeking behavior among customers in online retail. In other words, providing educational services, creating attractive and educational content about produced goods, offering follow-up services, free shipping, and using gamification in advertising products strengthens variety-seeking behavior among customers. The results of this study in this regard are aligned with research in this field.

Process innovation enhances variety-seeking behavior among customers. Honarmand (2022) in a study, states that businesses' use of new technologies and methods and the

implementation of a new production or delivery method, or significant improvement, strengthens variety-seeking behavior among customers, which is consistent with the findings of this study (Honarmand, 2022). The results of this study in this regard align with the prior research (Caracciolo et al., 2022; Kwon et al., 2023; Mehrabpour et al., 2019; Toolabi et al., 2020).

Innovation in equipment and tools is among the effective factors on variety-seeking behavior among customers, which is consistent with the results of other research (Adner & Kapoor, 2010; Mehrabpour et al., 2019).

Given the results of the study, it seems that the use of ideation, innovation, creativity in production, presentation, and sale in online retail is essential. In other words, it is necessary for manufacturers of goods and service providers to use new and innovative ideas in the production and presentation of goods and services to be an appropriate response to the needs and variety-seeking behavior of customers.

#### Authors' Contributions

All authors have contributed significantly to the research process and the development of the manuscript.

#### Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

## Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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## Declaration of Interest

The authors report no conflict of interest.

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## Ethical Considerations

In this research, ethical standards including obtaining informed consent, ensuring privacy and confidentiality were observed.

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