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Analysis of Factors Influencing Gen Z Consumers’ Preconception of Online Knitwear: An S-O-R Approach

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Abstract: The development of multichannel e-commerce is changing the way Generation Z evaluates online fashion products, particularly categories with high sensory dependencies such as knitwear. The limitations of haptic information encourage consumers to form digital stimulus-based preconceptions before physical experiences. This study explores the latent structure of *Generation Z's preconception* of knitwear within the framework of *Stimulus–Organism–Response (S-O-R)*. A quantitative survey was conducted on 207 Generation Z respondents in Indonesia and analyzed using *Exploratory Factor Analysis (EFA)*. The results of the study identified two latent factors that explain 63.2% of the total variance. The first factor represents an integrated cognitive evaluation that contains *product display (PD)*, *brand awareness (BA)*, *quality perception*, *symbolic motivation (social prestige (SP) and need for uniqueness (NFU))*, and *purchase intention (PI)*, showing that purchase intention is formed as an initial cognitive readiness. The second factor reflects the social-affective dimension dominated by *social environmental awareness (SEA)*, emphasizing the role of social considerations in the formation of *preconception toward knitwear (PK)*. These findings expand the understanding of S-O-R in the exploratory context of online fashion shopping in Indonesia.

Keywords: Preconception; Gen Z; S-O-R; Efa; Knitwear.

A. Introduction

The development of multichannel e-commerce has changed the consumption behavior of generation z as a digitally literate and socially conscious group that dominates the online fashion market, especially in the way they evaluate products online Amid increasing global

pressure on sustainability issues, knitwear is one of the inherently (Basu, 2021; Hapsari & Belgiawan, 2023; Niinimäki et al., 2020; Palomo-Domínguez et al., 2023; Shikha Goel & Pankaj Madan, 2025) fashionable fashion categories support SDG 12, which is responsible consumption and production through the



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promotion of slow fashion lifestyles and efficient proxy practices. Previous research (Chircop, 2025; Schiaroli et al., 2025; Sudirjo et al., 2024) shown that fully fashioned manufacturing technology achieves zero waste efficiency by knitting yarn directly to the garment pattern, which significantly reduces textile waste compared to traditional sewing cut methods (Bukhonka et al., 2025; Louis et al., 2025)

However, the main challenge in buying knitwear online is the haptic information gap, as consumers cannot interact directly with the texture of the material. Under these conditions, consumers rely on digital stimulus through the senses of sight and hearing to process technical details such as by looking at product photos, reading descriptions, comparing prices, brand information, and watching review videos or live shopping to assess the softness of the yarn or how the knitted fibers move. In addition, Artificial Intelligence (AI) and Augmented Reality (R) technologies allow visualization of clothes on 3D avatars to help predict if they are the right size (Ramadhan Basuki1 & Setiawan2, 2025)

Meanwhile, the live shopping, product demonstration, and video review features provide audio instructions regarding the density and softness of the knit. The integration of this external stimulus becomes the foundation for the formation of initial perceptions before purchasing decisions are made (Herniati et al., n.d.)

In the *framework of Stimulus–Organism–Response (S-O-R)*, the digital stimulus no longer functions simply as a response trigger, but as a mitigation mechanism for sensory information asymmetry in the online environment (Ngo et al., 2024; Prashar & Kaushal, 2025).

However, the influence of *digital stimulus* does not work directly, but is mediated by the internal conditions of the consumer as an *organism*. In Generation Z, this mediation process manifests a complex interaction between ethical orientation and psycho-personal motivation. On the one hand, *social environmental awareness* encourages a preference for products that are perceived as sustainable and socially responsible. On the other hand, the drive for *social prestige*, *the need for uniqueness*, and the perception of quality continue to play an

important role in the formation of identity and the symbolic meaning of consumption. This combination of internal factors forms what can be understood as a *preconception* of knitwear, which is the initial cognitive structure that consumers use to interpret digital stimuli before physically experiencing the product.

In the context of online shopping with a high level of uncertainty, *purchase intention* does not always appear as a final behavioral response but can be formed simultaneously with an initial cognitive evaluation. In other words, buying intent at this stage reflects the cognitive readiness to act, which is embedded in the structure of the preconception itself. This perspective suggests the existence of a compressed S-O-R process, in which internal evaluations and behavioral tendencies develop simultaneously in response to the limitations of sensory information.

Although the S-O-R framework has been widely used in research on online consumer behavior, particularly e-commerce and digital retail environments, most previous studies have been confirmatory with predetermined causal relationships assuming. Research that exploratively examines how digital stimulus, consumer internal conditions, and initial purchase intentions are latently structured, especially in product categories with high sensory dependency such as knitwear, are still relatively limited. In addition, empirical studies in the context of the Indonesian digital market have not been widely developed, even though the social characteristics and consumption behavior in this region have their own peculiarities. (Galante Amaral & Spers, 2022)

Therefore, this study aims to explore the latent dimensions that shape Generation Z's preconception of knitwear in the context of online shopping by using Exploratory Factor Analysis (EFA) in the framework of S-O-R. This study retained all stimulus and organismal variables, including purchase intention as part of initial cognitive readiness, to identify the structure of factors underlying the formation of preconceptions in online shopping environments with high levels of sensory uncertainty. This study focuses on the exploration of latent structures and does not aim to test causal relationships between variables.

B. Methods

This quantitative research uses a survey method with a purposive sampling technique for generation z in Indonesia who have experience buying knitwear online. Of the 258 responses, 207 valid data were analyzed using Jamovi software 2.7.13. Exploratory Factor Analysis (EFA) is used to identify latent structures within the framework of Stimulus-Organism-Response (S-O-R), EFA aims to investigate the underlying dimensions of the relationship between variables before further descriptive statistical analysis is carried out.

C. Result and Discussion

1. Respondent Demographic Information

This study involved 258 generation z respondents in Indonesia, with 207 data declared valid for analysis. The majority of respondents were female (77.50%) and were in the age range of 21-24 years (55%). Geographically, respondents were dominated by the Java Island region, especially West Java (37.6%) and DKI Jakarta (13.6%), most of which were students (67.8%) with the last level of education in high school/equivalent (58.9%) and bachelor's (38%). This profile correlates with the monthly income level, the majority of which is in the range below IDR 1,000,000 to IDR 3,000,000. This demographic characteristic reflects the segment of gen z consumers who are digitally active and relevant to the context of online knitwear.

2. Exploratory Factor Analysis

The feasibility of the data was tested using the KMO and Bartt's Test (Table 1). An SME value of 0.825 (>0.50) confirms the adequacy of the excellent sample. Bartt's Test yielded significant values ($\chi^2=8.75$, $df=28$, $p=<0.001$), indicating an adequate correlation between variables. These results provide a solid statistical basis for continuing the extraction of latent facts to identify dimensions in the S-O-R framework.

Table 1. SME and Bartlett's Test

Measure	Value
Kaiser-Meyer-Olkin of Sampling Adequacy	0.825
Barlett Test of Sphericity	
χ^2	875
df	28
p	<.001

3. Determining Factor and Item Validity

Based on *Parallel Analysis (PA)* and *Scree Plot*, this study extracted two factors that explain 63.2% of the total variance (factor 1: 48.2%; Factor 2: 15.0%). Extraction using the *Maximum Likelihood* method with *Oblimin* rotation showed that the item had a loading factor above the threshold of 0.50 (Table 2), Although the SA variable had a low MSA value (0.273), it was maintained due to its theoretical significance on the social dimension.

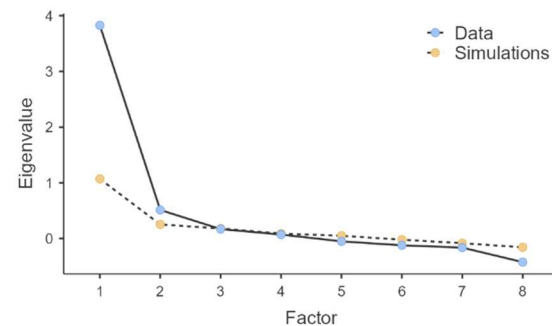


Figure 1. Scree Plot for Parallel Analysis

Table 2. Outer Loading

Item	Factor		Uniqueness
	1	2	
PD	0.535		0.70087
SA		0.998	0.00500
BA	0.701		0.48673
SEA	0.689		0.51852
PK	0.770	0.352	0.26701
SP	0.903		0.17491
NFU	0.803		0.35310
PI	0.740		0.44115

4. Total Variance Explained

Explained total variance reveals the ability of factors to represent information from all variables, which is measured through *eigenvalue* and percentage *variance*. Table 5 summarizes the findings of the analysis of the extraction of these factors. The results of the analysis in the table above show that the two extracted factors are able to explain 63.2% of the total variance (Table 3). The first factor has an *eigenvalue* of 3.85 and explains 48.2% *variance*, while the second factor has an *eigenvalue* of 1.20 and explains an additional 15.0% *variance*. This value indicates the ability of the factor to adequately represent the data structure.

Table 3. Factor Extraction Summary (Total Variance Explained)

Factor	SS Loadings	% of Variance	Cumulative %
1	3.85	48.2	48.2
2	1.20	15.0	63.2

5. Total Variance explained.

Model suitability was evaluated using *RMSEA* and *TLI*. The results of the analysis showed a value of *TLI*=0.901, which met the *acceptable fit criteria*, while *RMSEA*=0.120 (90% CI: 0.0867-0.155) showed a non-optimal level of suitability. However, considering that this research is exploratory and uses EFA, the instrument model is considered quite structurally feasible and can be refined in further research through CFA.

Table 4. Model Fit Measures

RMSEA 90% CI				
RMSEA	Lower	Upper	TLI	BIC
0.120	0.0867	0.155	0.901	-17.8

6. Reliability Analysis

Reliability tests were performed to assess the consistency of the internal measurement instruments using *Cronbach's a* and *McDonald's ω*. Based on the results of the EFA which identified the structure of the latent factor, the feasibility test was carried out on all instrument

items. The results of the analysis are shown in Table 5.

Table 5. Scale & Item Reliability Statistics

Indicator Item	Item-rest correlation	Cronbach's α If Item Dropped	McDonald's ω If Item Dropped
Total Scale Value		0.866	0.863
PD	0.49937	0.862	0.860
SA	-0.00551	0.891	0.892
BA	0.65041	0.845	0.843
SEA	0.65825	0.844	0.842
PK	0.75021	0.834	0.831
SP	0.80819	0.825	0.821
NFU	0.72529	0.836	0.833
PI	0.69399	0.840	0.837

The test results showed a *Cronbach's a* value of 0.866 and *McDonald's ω* of 0.863. These two values exceeded the academically accepted threshold (>0.70), indicating a good level of realism. Most items also show a total item correlation above 0.30, indicating an adequate contribution to the internal consistency of the scale. Although SA items show a low total item correlation, the removal of them only marginally increases the reliability value. Therefore, SA items are maintained because they have a very strong *loading factor* on the second factor and are supported by theoretical relevance in the context of social consumption of knitwear. Thus, the research instrument is declared reliable and feasible to use for further data analysis.

D. Conclusion and Recommendation

Based on the results of the analysis, it can be concluded that this study explores the latent structure of Generation Z's preconception of knitwear in the context of online shopping using Exploratory Factor Analysis (EFA) in the framework of Stimulus-Organism-Response (S-O-R), and two main factors emerge that cumulatively explain 63.2% of the total variance. The first factor represents an integrated cognitive evaluation that includes digital stimuli and consumer internal conditions, including quality perception, brand information, sustainability, symbolic motivation, and *purchase intention*. These findings suggest that in conditions of sensory uncertainty, purchase

intent functions as part of initial cognitive readiness and develop simultaneously with the evaluation process.

The second factor reflects the social-affective dimension characterized by *social awareness*, emphasizing the role of social and ethical considerations in shaping Generation Z's initial perception of knitting products. Although the value of the fit model has not been absolutely optimal, the factor structure and reliability of the instrument demonstrate adequate feasibility for exploration purposes. This research contributes to expanding the application of the S-O-R framework in the context of e-commerce of products with high sensory dependence in the Indonesian digital market, as well as being the basis for further research using a confirmatory approach to test the stability and relationships between constructs.

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