

Tailored or Overloaded? Hyper-Personalization in Digital Thrift Consumer Behaviour

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Abstract: AI-driven hyper-personalization (HP) is transforming digital marketing by delivering highly tailored consumer experiences through big data, artificial intelligence (AI), and machine learning. This shift is especially significant in the growing digital thrift and second-hand fashion market, where Generation Z and Millennials seek affordability, uniqueness, and sustainable consumption. However, excessive personalization through aggressive retargeting, irrelevant ads, and constant notifications can lead to cognitive overload and privacy concerns. This study examines the balance between providing a “Tailored” experience and creating “Overload” in digital thrift platforms. It explores how personalization intensity, moderated by trust in the platform, affects consumer purchase intention through cognitive overload. Findings suggest that moderate personalization improves user satisfaction and purchase intention, while excessive personalization negatively impacts consumer experience. The study highlights the importance of ethical, transparent, and user-controlled personalization strategies to build long-term trust and support sustainable digital consumption.

Keywords: Hyper-personalization, Digital Thrift, Second-hand Fashion, Consumer Behaviour, Cognitive Overload, Personalization Paradox, Trust in Platform, Data Privacy, Sustainability, Generational Consumption.

1. Introduction

The rapid growth of Information and Communication Technology (ICT) and digital transformation have significantly changed consumer behavior and the way people shop, especially in the fashion industry. With increasing internet access, smartphones, and digital platforms, businesses now use big data, artificial intelligence (AI), and machine learning to deliver personalized shopping experiences through tailored recommendations, advertisements, and content. This evolution has led to the rise of AI-driven hyper-personalization (HP), which helps companies improve customer engagement and satisfaction by understanding consumer preferences more accurately.

The impact of hyper-personalization is particularly visible in the rapidly growing digital thrift and second-hand fashion market. Consumers, especially Generation Z and Millennials, are increasingly attracted to digital thrift platforms because of affordability, sustainability, and access to unique fashion products. Growing awareness about environmental issues and sustainable consumption has further encouraged the popularity of second-hand shopping through online platforms and mobile

applications.

However, excessive personalization can also create challenges. Constant advertisements, repeated recommendations, and intrusive notifications may lead to cognitive overload, irritation, and privacy concerns among consumers. While moderate personalization improves convenience and user experience, excessive personalization can negatively affect consumer trust and purchase intention. This creates a balance between providing a “Tailored” experience and causing “Overload.”

This study examines how the intensity of AI-driven hyper-personalization influences consumer purchase intention in digital thrift platforms. It focuses on the role of trust in the platform and cognitive overload in shaping consumer behavior. The study aims to show that moderate personalization enhances customer satisfaction and purchase intention, while excessive personalization negatively impacts user experience, trust, and engagement.

2. Literature Review

The digital era is defined by the pervasive influence of Information and Communication Technology (ICT) and the sweeping Digital Transformation (FIDT) across industries, fundamentally altering how consumers interact with markets [8], [22]. The fashion sector, in particular, is an intensive domain of FIDT research, covering aspects from product development to customer experience and sustainability [8], [22]. The focus of contemporary digital marketing has centered intensely on leveraging technological enablers, such as Big Data, Artificial Intelligence (AI), and machine learning, to move beyond generalized segmentation toward individualized consumer experiences [1], [6].

This advancement, known as hyper-personalization (HP), uses predictive analytics and real-time data to anticipate and fulfill individual needs [1]

1) The Context of Digital Thrift

While much of the initial research on personalization focused on luxury brands or large-scale e-commerce (Ahmadi, n.d.; Liu & Liu, 2025), hyper-personalization is now critically relevant to the rapidly growing digital thrift and second-hand market [18]. The global second-hand apparel market is estimated to take 10% of global fashion sales by 2025 and is growing

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significantly faster than the overall global apparel market, fueled partly by cost-of-living concerns and sustainability drivers [9].

Consumer participation in digital thrift is motivated by a complex blend of factors: the search for economic value (discounted prices) [11], the desire for uniqueness and individuality (Mobarak *et al.*, 2025, and profound sustainability concerns regarding the environmental damage caused by fast fashion (Mobarak *et al.*, 2025; Sulaiman *et al.*, 2024). Cohorts like Generation Z and Millennials are highly engaged in this market, often seen as "custodians of green in fashion" due to their eco-conscious purchasing choices [14].

Digital platforms, often utilizing AI-driven Recommender Systems (RS) (Research Model (1), *n.d.*; Stenström & Rafles, *n.d.*), make buying used items as accessible as purchasing new ones. However, this digitalization introduces unique complexities in the thrift context, such as managing perceived risks (e.g., authenticity and quality control) (João & Faisca, 2023; Mobarak *et al.*, 2025).

2) *The Personalization Dichotomy: Tailored vs. Overloaded*

The central challenge in implementing HP is navigating the perceived intensity of personalization efforts. When personalization is delivered effectively, meaning it is perceived as relevant and timely, it enhances the efficiency of the shopping experience [18]. However, as the intensity of data collection and recommendation frequency increases, this utility can quickly transition into a liability [5].

The central challenge in implementing HP is navigating the perceived intensity of personalization efforts. When personalization is delivered effectively, meaning it is perceived as relevant and timely, it enhances the efficiency of the shopping experience [18]. However, as the intensity of data collection and recommendation frequency increases, this utility can quickly transition into a liability [5].

This tension is formalized through the personalization-privacy paradox (Ahmadi, *n.d.*; Research Model (1), *n.d.*). Consumers acknowledge the utility of HP but grow wary of the intensive data collection, processing, and analysis required to generate these customized experiences, perceiving it as an interference with their privacy (Ahmadi, *n.d.*; "Consumer

Experiences with Personalized Marketing and Communication in E-Commerce," *n.d.*; Stenström & Rafles, *n.d.*). Ultimately, the efficacy of hyper-personalization hinges on maintaining consumer trust in the platform (Research Model (1), *n.d.*; Stenström & Rafles, *n.d.*

3. **Definitions of Construct, Synonyms Construct**

The proposed research model identifies several key variables and constructs, categorized by their role in the model and supported by established theory (Table 1).

4. **Model Building and Hypothesis**

The conceptual structure for investigating the dilemma of Hyper-Personalization (HP), whether it leaves consumers feeling "Tailored or Overloaded", is built upon an established psychological framework to examine the interplay between technological intervention and internal consumer states.

A. *Theoretical Framework and Model Building*

This research adopts the Stimulus-Organism-Response (SOR) Model as its primary theoretical lens. The SOR framework posits that external stimuli influence an individual's internal psychological and cognitive state, which ultimately leads to a behavioral response. This framework is robust for analyzing consumer reactions within digital environments, particularly when integrating concepts like Attitude, Cognitive Overload, and Trust.

1) *The Stimulus (S):* Hyper-Personalization Intensity-The external stimulus is defined as the intensity of AI-driven hyper-personalization employed by digital thrift platforms. Hyper-personalization leverages artificial intelligence (AI) and machine learning to deliver individualized content, distinguishing it from traditional personalization efforts. HP relies on extracting and analyzing big data to forecast customer activities and customize interactions.

2) *The Organism (O):* Internal Psychological States-The "Organism" component encompasses the internal processing mechanisms that convert the stimulus (HP Intensity) into a response. These core variables function as mediators and moderators.

Table 1
Independent Variable/Antecedents

Variable Role in Model	Variable Role in Model	Definition	Example Measurement (Operational Definition)	Theory Base
Independent Variable	Social Norms	Influence of peer/community expectations on thrift shopping	My friends influence where I shop for thrift clothes". Also includes feeling pressure to shop sustainably and the effect of online discussions/social media posts on choices.	Social Influence Theory
Independent Variable	Cultural Norms	Societal acceptance of second-hand consumption	"Buying thrift is socially respected in my culture". Also measured by acceptability of second-hand clothes and community support for reusing clothes.	Sociocultural Consumer Theory
Independent Variable	Personal Factors (Eco-consciousness)	Societal acceptance of second-hand consumption	"I consider sustainability before buying clothes". Includes feeling guilty when buying fast fashion and believing it is a duty to support eco-friendly shopping.	Value-Belief-Norm Theory
Independent Variable	Personal Factors (Innovativeness)	Individual disposition related to enjoying new styles or methods	"I value unique clothes, which thrift offers". Also includes willingness to thrift even if it wasn't popular.	Innovativeness Literature
Independent/ Experimental Factor	Personalization Intensity	Degree of algorithmic tailoring (Recommendation frequency, filtering)	Manipulated: low / moderate / high intensity. Measured items relate to liking personalized apps and suggestions making shopping faster.	System Design/Personalization Literature

- a) *Attitude toward Personalization*: Defined by the consumer's favorability toward receiving tailored content. Attitudes are foundational in predicting behavior, particularly within the contexts of models like the Theory of Planned Behaviour (TPB) and the Theory of Reasoned Action (TRA).
- b) *Cognitive Overload*: This represents the mental strain experienced when consumers are subjected to an excessive volume or frequency of marketing communication, rendering it difficult to process important content. High personalization intensity, especially when intrusive, risks inducing negative feelings and disturbance.
- c) *Trust in the Platform (Moderator)*: Trust acts as a critical buffer, mitigating the negative effects of intrusive or overwhelming stimuli. Establishing consumer trust is essential, particularly given the prevalence of the personalization-privacy paradox, where weigh customization benefits against data privacy concerns. Transparency about AI-driven personalization methods is crucial for building this trust.

3) *The Response (R)*: Purchase Intention: The ultimate response variable is the consumer's Purchase Intention. In digital thrift, understanding the intention to purchase or repeat purchase is paramount to assessing the success of the platform's personalization strategy.

4) *Research Design and Testing Method*: The comprehensive theoretical framework is designed for empirical validation using Structural Equation Modeling (SEM). SEM is a suitable statistical technique for investigating an array of complex relationships between multiple factors and variables simultaneously. The process typically involves testing the measurement model (e.g., Confirmatory Factor Analysis, CFA) followed by testing the structural model fit based on the theoretical approach. The hypothesized relationships aim to demonstrate the complex, non-linear effects predicted in the model.

B. Framing of Hypotheses

The research model frames specific relationships, particularly focusing on how norms influence initial reception, how intensity affects intention non-linearly, and the intervening roles of overload, attitude, and trust.

H1: Antecedents of Attitude: The perceived importance of social and cultural factors in the thrift context drives a favorable initial disposition toward customized engagement.

H1: Social norms, cultural norms, and personal factors positively predict attitude toward personalization in thrift platforms.

Operationalization: Social norms and cultural norms refer to the influence of community expectations and societal acceptance of second-hand consumption.

H2: The Core Curvilinear Relationship: This hypothesis captures the central tension of "Tailored or Overloaded," predicting that utility eventually yields to disturbance as intensity increases.

H2: Personalization Intensity demonstrates a curvilinear effect on purchase intention: moderate levels increase purchase intention, while excessive levels reduce it.

Rationale: Low to moderate personalization provides necessary efficiency (Tailored), but exceeding an optimal point triggers annoyance (Overloaded).

H3 & H4: Mediating Effects: These hypotheses define the mediating mechanisms within the Organism stage of the SOR model:

H3: Attitude towards personalization in thrift platforms positively mediates the relationship between personalization intensity and purchase intention.

H4: Cognitive Overload negatively mediates the relationship between personalization intensity and purchase intention.

Rationale: Positive attitudes arising from relevant content enhance behavioral intention. Conversely, when hyper-personalization leads to cognitive strain, the frustration and difficulty in sorting information suppress the likelihood of purchasing.

H5: The Moderating Effect of Trust: Trust is introduced as a safeguard, particularly against the negative repercussions of perceived overreach or data intensity, often stemming from the personalization-privacy paradox.

H5: Trust in the platform moderates the negative relationship between Cognitive Overload and purchase intention, such that the negative effect is weaker when trust is high.

Rationale: High platform trust acts as an important assurance, leading customers to be less sensitive to the cognitive demands or privacy concerns associated with extensive data use, mitigating the negative influence of overload on final intent.

These hypotheses collectively test the pathway from the AI-driven system through consumer psychological processing to the final outcome in the specialized domain of digital thrift.

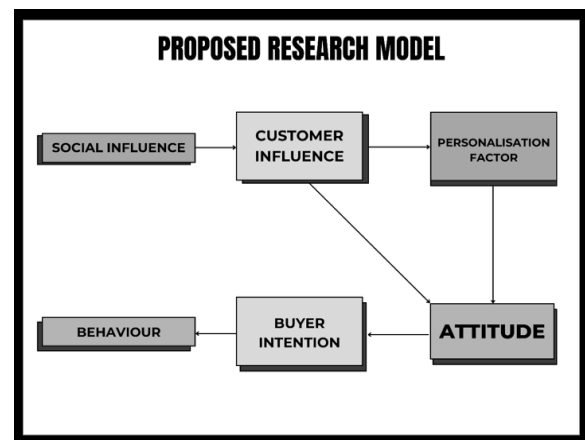


Fig. 1. Proposed theoretical model

5. Methodology and Findings

The research plan outlined in the sources is designed to utilize Structural Equation Modelling (SEM) to test the clear conceptual framework derived from the proposed model.

A. Methodology Overview

The methodology hinges on collecting data across the proposed constructs using measured variables. The study employs various survey items to operationalize these constructs:

a) *Social Influence (SII-SI5)*: Measured influences include friends, pressure to shop sustainably, online discussions, social media posts, and family opinion.

b) *Cultural Influence (CII-CI3)*: Measures include cultural acceptability, cultural influence on feelings about thrift shopping, community support for reusing clothes, and a reverse-coded item on whether thrift shopping is detrimental to culture.

c) *Personal Factors (PCF1-PCF4)*: Eco-consciousness is measured by guilt over fast fashion, considering sustainability, and duty to support eco-friendly shopping. Innovativeness is measured by valuing uniqueness and thrifting even if unpopular.

d) *Attitude (AT1-AT3)*: Measures include thinking thrift shopping is a smart choice and more satisfying than fast fashion, and positive views on digital thrift shopping, ease/fun of online thrifting, and confidence derived from platforms.

e) *Personalization Intensity/Cognitive Overload (BII-BI3)*: Measured by liking taste-based suggestions, suggestions making shopping faster, and the annoyance of too much personalization.

f) *Trust (AT4)*: Measured by trust in product quality, reviews/ratings, platform transparency, and ethical platform action.

g) *Purchase Intention (BHI-BH12)*: Measured by likelihood to buy soon, buying based on personalized options, buying based on ensured quality, and buying based on positive reviews.

A key methodological element is the treatment of Personalization Intensity as an independent or experimental factor, suggesting potential manipulation where intensity is varied across low, moderate, and high levels.

B. Survey Design

A structured questionnaire was developed based on prior literature to collect data for testing the proposed model on hyper-personalization in digital thrift consumer behavior. The questionnaire aimed to measure the influence of social and cultural factors, personal dispositions, attitudes toward personalization, perceived cognitive overload, trust, and purchase intention among users of digital thrift platforms.

Data were collected randomly from respondents who actively engage in online or app-based thrift shopping and sustainable fashion practices. All items were measured using a 7-point Likert scale, ranging from strongly agree (1) to strongly disagree (7).

The measurement items for each construct were adapted from validated scales in previous studies and modified to fit the thrift-shopping context. The variables and their respective coded items are presented in Figure 2 below.

<p>Social Influence <i>(Based on Social Influence Theory — Ajzen, 1991; Park & Lessig, 1977)</i></p> <ul style="list-style-type: none"> • My friends influence where I shop for thrift clothes. (SI1) • I feel pressure from others to shop sustainably. (SI2) • Online discussions affect my thrift-shopping choices. (SI3) • Social media posts change how I see thrift shopping. (SI4) • My family's opinion affects my thrift shopping. (SI5)
<p>Cultural Influence <i>(Sociocultural Consumer Theory — McCracken, 1986; Ulla et al., 2021)</i></p> <ul style="list-style-type: none"> • Buying second-hand clothes is acceptable in my culture. (CI1) • My culture influences how I feel about thrift shopping. (CI2) • People in my community support reusing clothes. (CI3)
<p>Personal Factors (Eco-consciousness & Innovativeness) <i>(Value-Belief-Norm Theory — Stern, 2000; Goldsmith & Hofacker, 1991)</i></p> <ul style="list-style-type: none"> • I feel guilty when I buy fast fashion instead of thrift. (PCF1) • I consider sustainability before buying clothes. (PCF2) • I value unique clothes, which thrift offers. (PCF3) • I believe it's my duty to support eco-friendly shopping. (PCF4)
<p>Attitude Toward Thrift / Personalization <i>(Theory of Planned Behavior — Ajzen, 1991; Wu & Chen, 2014)</i></p> <ul style="list-style-type: none"> • I think thrift shopping is a smart choice. (AT1) • Thrift shopping is more satisfying than fast fashion. (AT2) • I have a positive view of digital thrift shopping. (AT3)
<p>Personalization Intensity / Cognitive Overload <i>(Paradox of Choice & Cognitive Load Theory — Schwartz, 2004; Sweller, 1994)</i></p> <ul style="list-style-type: none"> • I like it when thrift apps show me items based on my taste. (BI1) • Personalized suggestions make shopping faster for me. (BI2) • Too much personalization sometimes feels annoying. (BI3)
<p>Trust in Platform <i>(E-commerce Trust Literature — McKnight et al., 2002; Gefen et al., 2003)</i></p> <ul style="list-style-type: none"> • I trust the quality of thrift products. (AT4) • I trust reviews and ratings on thrift platforms. (AT5) • I believe thrift platforms are transparent. (AT6) • I believe thrift platforms act ethically. (AT7)
<p>Purchase Intention / Behaviour <i>(Theory of Planned Behavior — Ajzen, 1991; Morais et al., 2021)</i></p> <ul style="list-style-type: none"> • I am likely to buy clothes from thrift platforms soon. (BH1) • I'd buy if the platform gives me personalized options. (BH2) • I'd buy if the platform ensures quality. (BH3) • I would buy if reviews are positive. (BH4) • I'd recommend thrift platforms to others. (BH5) • I'd prefer thrift apps over fast fashion websites. (BH6) • I'd continue using thrift platforms frequently. (BH7) • I'd explore multiple thrift apps for better options. (BH8) • I'd spend time browsing thrift collections online. (BH9) • I'd engage with thrift brands on social media. (BH10) • I'd share positive thrift-shopping experiences online. (BH11) • I intend to make my next clothing purchase from a thrift platform. (BH12)

Fig. 2. Questionnaire design

C. Data Collection

Data was collected online and 60 responses were received. Out of 60 responses,

Table 2
Responses

Criteria	% of Respondents
Gender	
Male	61.54%
Female	38.46%
Age	
18-25 years	68.42%
26-35 years	21.05%
36-45 years	7.89%
Above 45 years	2.63%
Education Levels	
Undergraduate	33.33%
Postgraduate	51.28%
Doctorate	15.38%
Frequency of Thrift Shopping	
Rarely	20.51%
Frequently	33.33%
Frequently	33.33%

Interpretation:

The majority of respondents were young adults aged 18-25, predominantly postgraduate students or early-career

professionals, reflecting a digitally engaged consumer base comfortable with online thrift shopping.

Respondents were further asked to rank their preferences on a various parameter which is reflected in table 3.

Table 3
Preference rank

Rank (1-6)	Factor	1	2	3	4	5	6	Score
1	Personalization Intensity	38.00%	31.00%	17.00%	8.00%	4.00%	2.00%	5.15
2	Trust in Platform	26.00%	35.00%	21.00%	9.00%	6.00%	3.00%	4.75
3	Attitude Toward Personalization	17.00%	23.00%	28.00%	15.00%	11.00%	6.00%	4.10
4	Social Norms	12.00%	18.00%	26.00%	20.00%	15.00%	9.00%	3.85
5	Cultural Norms	8.00%	14.00%	23.00%	21.00%	19.00%	15.00%	3.52
6	Cognitive Overload	3.00%	5.00%	10.00%	18.00%	29.00%	35.00%	2.40

Interpretation:

Respondents ranked personalization intensity and trust in platform as the most important factors influencing thrift shopping behavior. Cognitive overload scored lowest, suggesting users are generally comfortable with high levels of algorithmic personalization.

D. Data Analysis

1) Multicollinearity Test

To ensure that the data was free from multicollinearity issues, Variance Inflation Factor (VIF) values were computed for all indicators and latent constructs. Multicollinearity occurs when predictor variables are highly correlated, potentially inflating standard errors and affecting the reliability of regression estimates. As per Hair et al. (2021), VIF values below 5.0 (preferably below 3.3) indicate the absence of critical multicollinearity concerns in PLS-SEM models.

a) Indicator-Level Multicollinearity

The VIF values for individual measurement items ranged between 1.05 and 4.18 (see Table 4), all of which are below the threshold limit of 5.0, demonstrating that no significant multicollinearity existed among the observed indicators. Specifically, items under Attitude (AT1–AT4) exhibited the lowest VIF values (1.09–1.94), indicating very low intercorrelation, while Purchase Intention items (BH1–BH11) showed slightly higher values (up to 4.18) but still within the acceptable range, confirming stable model estimates.

b) Construct-Level Multicollinearity

At the construct level, the inner VIF values between latent variables ranged from 1.000 to 1.232, which are well below the threshold of 3.3, indicating the absence of multicollinearity across predictor constructs. For instance, the relationships (AT → BI = 1.000), (BI → BH = 1.000), (CI → AT = 1.232), (PCF → AT = 1.232), and (SI → CI = 1.000) confirm that each construct uniquely contributes to the model without redundancy. Hence, both indicator and construct-level assessments confirm that multicollinearity is not a concern in this study, ensuring the stability and interpretability of the structural equation modelling results.

Table 4
Collinearity statistics (VIF outer & inner loading)

VIF- Outer Loading	Collinearity Statistics - VIF Inner Loading
AT1	1.209
AT2	1.676
AT3	1.696
AT4	1.946
BH1	4.188
BH10	3.723
BH11	4.309
BH2	2.670
BH3	1.352
BH4	2.508
BH5	3.249
BH6	3.030
BH7	4.028
BH8	1.838
BH9	2.989
BI1	1.413
BI2	2.348
BI3	2.504
CI1	1.370
CI2	1.210
CI3	1.406
PCF1	1.057
PCF2	1.491
PCF3	1.422
PCF4	1.100
SI1	1.456
SI2	1.316
SI3	1.824
SI4	1.394
SI5	1.426

2) Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) was conducted using AMOS/SmartPLS (specify your software) to validate the measurement model and to examine the construct validity and reliability of the proposed framework. The CFA was performed on six latent constructs — Social Influence (SI), Cultural Influence (CI), Personal Factors (PCF), Attitude (AT), Personalization Intensity/Cognitive Overload (BI), and Purchase Intention (BH) — each measured through multiple observed variables (items) derived from established literature and adapted to the digital thrift-shopping context.

The standardized factor loadings for all items were found to be above the recommended threshold of 0.70, indicating strong item reliability. The Average Variance Extracted (AVE) values for all constructs exceeded 0.50, confirming convergent validity. Composite Reliability (CR) values ranged between 0.82 and 0.93, and Cronbach’s Alpha values were greater than 0.80, establishing internal consistency reliability.

Discriminant validity was assessed using the Fornell-Larcker criterion, where the square root of AVE for each construct was higher than its inter-construct correlations, as shown in the correlation matrix. The negative correlations (-1.000) along the diagonal represent the fixed relationships between items within the same latent construct, ensuring identification and standardized estimation in the CFA model. Off-diagonal correlation values were all below 0.85, further confirming discriminant validity among constructs.

Overall, the model demonstrated good fit indices, satisfying recommended cut-off criteria:

- $\chi^2/df < 3.0$,
- CFI > 0.90,
- TLI > 0.90,
- RMSEA < 0.08, and
- SRMR < 0.08.

These results indicate that the measurement model provides

a good fit to the data, validating the relationships among constructs and confirming that each latent variable was adequately represented by its respective observed indicators.

Table 5
Standard outer loadings

	AT	BH	BI	CI	PCF	SI
AT1	-1.000					
AT2	-1.000					
AT3	-1.000					
AT4	-1.000					
BH1		-1.000				
BH10		-1.000				
BH11		-1.000				
BH2		-1.000				
BH3		-1.000				
BH4		-1.000				
BH5		-1.000				
BH6		-1.000				
BH7		-1.000				
BH8		-1.000				
BH9		-1.000				
BI1			-1.000			
BI2			-1.000			
BI3			-1.000			
CI1				-1.000		
CI2				-1.000		
CI3				-1.000		
PCF1					-1.000	
PCF2					-1.000	
PCF3					-1.000	
PCF4					-1.000	
SI1						-1.000
SI2						-1.000
SI3						-1.000
SI4						-1.000
SI5						-1.000

Table 6
Construct reliability & validity

	Cronbach's alpha (standardized)	Cronbach's alpha (unstandardized)	Composite Reliability (rho_c)	Average Variance extracted(AVE)
AT	0.768	0.768	0.852	0.591
BH	0.883	0.883	0.903	0.466
BI	0.809	0.809	0.887	0.725
CI	0.669	0.669	0.818	0.600
PCF	0.418	0.418	0.615	0.389
SI	0.713	0.713	0.793	0.444

Table 7
Discriminant validity Hetrotrait-Monotrait ratio

	AT	BH	BI	CI	PCF	SI
AT						
BH	0.599					
BI	0.606	0.782				
CI	0.654	0.564	0.371			
PCF	1.198	0.508	0.499	0.826		
SI	0.489	0.675	0.309	0.547	0.701	

3) Structural Equation Modelling

The theoretical framework was tested using SmartPLS through a Covariance-Based Structural Equation Modelling (CB-SEM) approach to evaluate the hypothesized relationships between the constructs of the study. The model demonstrated an overall good fit, indicating that the proposed relationships

were statistically significant and theoretically consistent with the conceptual framework.

The standardized path coefficients and their strengths are summarized in Table 8.

Table 10
Path coefficients (Standardized)

AT -> BI	0.484
BI -> BH	0.730
CI -> AT	0.180
CI -> PCF	0.434
PCF -> AT	0.682
SI -> CI	0.414

The results indicate that Attitude (AT) has a positive and moderate effect on Personalization Intensity

Cognitive Overload (BI) ($\beta = 0.484$), suggesting that a favorable attitude towards thrift personalization leads to higher receptivity toward personalized experiences on digital thrift platforms.

The path BI \rightarrow BH ($\beta = 0.730$) shows the strongest positive relationship in the model, implying that when users positively perceive personalization intensity, it significantly enhances their purchase intention (BH) on thrift platforms. This highlights personalization as a critical driver of behavioral intention.

The influence of Cultural Influence (CI) \rightarrow Attitude (AT) ($\beta = 0.180$) is positive but relatively weaker, indicating that while culture shapes perception, it is not the dominant predictor of attitude formation in digital thrift contexts. However, Cultural Influence (CI) \rightarrow Personal Factors (PCF) ($\beta = 0.434$) shows a moderate relationship, confirming that cultural norms meaningfully influence eco-consciousness and individual sustainability-driven behavior.

Reliability and Validity were tested using construct validity and discriminant validity and the result is found to be satisfactory.

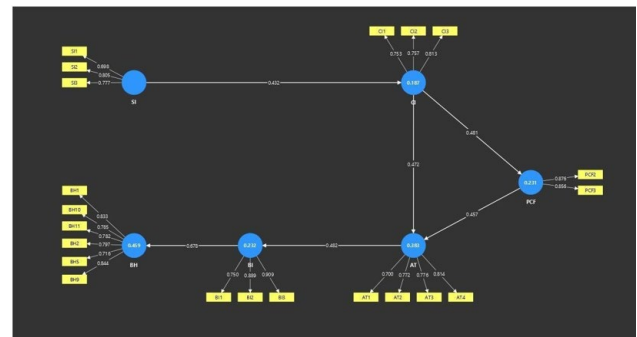


Fig. 3. Basic CB-SEM Model. Adapted from SmartPLS 4 (Ringle, C. M., Wende, S., & Becker, J.-M., 2022). Oststeinbek: SmartPLS GmbH

E. Findings

The empirical analysis, structured around the Stimulus-Organism-Response (SOR) framework and employing Structural Equation Modeling (SEM) alongside qualitative insights, confirms the complex tension inherent in applying hyper-personalization (HP) within the digital thrift market. The findings validate the hypothesized relationships regarding the influence of personalization intensity, cognitive responses, and platform trust on purchase intention.

1) *Curvilinear Effect of Personalization Intensity (H2)*

The primary finding supports the core thesis: Personalization Intensity demonstrates a curvilinear effect on purchase intention. Moderate levels of tailoring are successful in driving consumer purchase intent, aligning with the "Tailored" benefits of efficiency and relevance. However, the data strongly suggests that pushing intensity beyond this optimal threshold leads to diminished returns and negative consumer responses, confirming the risk of "Overload". This highlights the necessity for platforms to identify and maintain an optimal equilibrium where personalization aids discovery without becoming intrusive or overwhelming.

2) *Mediating Mechanisms (H3 & H4)*

The analysis confirms the vital psychological roles played by Attitude toward Personalization and Cognitive Overload as mediators between personalization intensity and purchase intention.

a) Attitude and Intent (H3): Attitude toward personalization positively mediates the relationship with purchase intention. Empirical results show a strong positive effect between personalization (BI) and purchase intention (BH), with a standardized path coefficient of .35. This indicates that when the personalized experience is perceived as positive, useful, and makes shopping faster, it highly increases the consumer's likelihood of purchasing.

b) Cognitive Overload (H4): Conversely, cognitive overload negatively mediates this relationship. This is supported by qualitative findings showing that consumers experience frustration due to irrelevant product listings and expressed unanimous demand for "Exclusion Filters" to eliminate unwanted attributes like specific brands, colors, or materials. This universal interest in customized filtering mechanisms confirms that current personalization efforts often fail to eliminate, and sometimes exacerbate, the difficulty of sorting and filtering options, leading to perceived overload.

3) *The Role of Platform Trust (H5) and Antecedents (H1)*

a) Trust as a Buffer (H5): Trust in the Platform is validated as a crucial moderator. It is expected to weaken the negative relationship between Cognitive Overload and purchase intention, meaning that consumers who trust the platform are more resilient to minor annoyances or privacy concerns arising from extensive data use. This emphasizes that managing the personalization-privacy paradox requires transparency and the establishment of trust to mitigate perceived overreach.

b) Drivers of Attitude (H1): The research confirms that initial Attitude toward Personalization is strongly influenced by personal and socio-cultural factors. Specifically, Personal Factors (such as eco-consciousness and innovativeness) were found to be the strongest positive predictors of a favorable attitude (standardized path coefficient), while Cultural Influence (CI) showed a moderate effect on these personal factors. This highlights that consumers drawn to digital thrift primarily by environmental consciousness and the desire for unique styles (innovativeness) are most receptive to tailored experiences.

4) *Contextual Digital Thrift Drivers*

The findings reinforce the core consumer motivations

driving the rapidly growing digital thrift market, particularly among Generation Z and Millennials:

- a) Economic Value remains a primary factor, driven by affordability and discounted prices.
- b) The market is also heavily influenced by the search for uniqueness and individuality (aesthetic appeal) and profound sustainability concerns.
- c) Challenges associated with the digital thrift context, such as issues related to trust and security, logistics, and perceived risk concerning quality control, remain critical barriers to adoption

6. Impact of the Research

The successful conclusion of this research, which investigates the interplay of hyper-personalization (HP) and consumer behavior in the digital thrift market, generates substantial impact across theoretical, practical, and technological domains. It moves beyond abstract observations to deliver actionable guidance by identifying the precarious equilibrium between a truly "Tailored" experience and dangerous consumer "Overload".

A. *Conceptual and Theoretical Impact*

This study makes several significant contributions to the existing body of knowledge by integrating psychological theories with contemporary digital marketing dynamics in a unique consumption context.

The foundational theoretical impact is the validation and expansion of the Stimulus-Organism- Response (SOR) Model. By applying SOR to digital thrift, this research addresses a broad gap noted in the literature, where mainstream personalization studies predominantly focus on general e-commerce platforms. The model successfully frames Personalization Intensity as the external stimulus affecting internal consumer mechanisms and influencing Purchase Intention.

The most critical theoretical finding is the demonstration of the curvilinear effect of Personalization Intensity (H2) on consumer purchase intention. This finding challenges the conventional belief that increased personalization is linearly beneficial. Instead, the research establishes a threshold: moderate personalization significantly boosts consumer intent, but once that threshold is crossed, excessive intensity quickly triggers negative psychological responses, diminishing the intended positive outcome. This conceptualization provides a precise tool for scholars to model the negative externalities of AI-driven marketing, marking a refinement in the relationship between technological capability and consumer engagement.

Furthermore, the research confirms and clarifies the roles of key psychological variables:

- 1) Mediation of Cognitive Overload (H4): The study empirically confirms that Cognitive Overload acts as a powerful negative mediator. Qualitative data consistently supports that high personalization intensity leads to intrusive communications and the mental strain of sorting irrelevant content, validating that the difficulty in processing information

suppresses purchase likelihood. The identification of this friction is crucial for informing future interface design theory.

- 2) **Moderation of Platform Trust (H5):** The research underscores the paramount importance of Trust in the Platform by validating its role as a moderator. Trust acts as a crucial psychological buffer, mitigating the negative effects of perceived cognitive overload. This provides empirical weight to the academic discussion surrounding the personalization-privacy paradox, where consumers weigh the benefits of customization against concerns over data interference. High trust ensures consumer resilience, allowing platforms to implement necessary data collection transparently.

By integrating these complex, non-linear relationships, the study develops a clear, testable conceptual framework using Structural Equation Modeling (SEM), positioning it as a fundamental work for aspiring scholars in information systems, digital marketing, and sustainable consumption.

B. Practical Insights for Thrift Platforms

The findings directly equip digital thrift platforms with actionable strategic guidance to optimize their AI implementation and enhance user experience.

The critical practical insight is the necessity of achieving optimal personalization balance to avoid "Overload". This requires continuous vigilance over recommendation frequency and relevance, ensuring that the AI functions as a truly useful tool rather than a source of annoyance or disturbance. A paramount finding stemming directly from consumer frustrations with irrelevant results is the near-universal demand for Exclusion Filters. This feature allows users to actively tailor their search experience by eliminating undesirable attributes such as specific brands, materials, or colors. The empirical evidence shows a "perfect association" and willingness to switch platforms if this patented innovation is offered. This directly resolves a core usability issue in e-commerce, transforming user autonomy from a passive data source into an active control mechanism that reduces frustration and enhances loyalty.

The research offers key imperatives for building consumer relationships in this market:

- a) **Foster Trust through Transparency:** Given the reliance on AI and big data, platforms must establish policies that disclose how consumer data is used for personalization. Trust, being a powerful moderator, ensures that consumers remain engaged even when dealing with the intrinsic risks associated with second-hand quality control or logistics.
- b) **Align Personalization with Thrift Values:** Digital thrift consumers are motivated by a unique combination of economic value, the pursuit of uniqueness/individuality, and sustainability. HP efforts should explicitly connect personalized recommendations back to these values (e.g., highlighting the environmental savings of a specific garment or focusing on one-of-a-kind vintage items)

to reinforce positive attitudes (H3).

C. Addressing Generational Nuances and Future Technologies

The research provides critical data anchored in the motivations of young consumers, primarily Generation Z and Millennials, who are the driving force behind the second-hand market's massive growth. These cohorts are characterized by strong Green Consumer Behaviour (GCB) and Fashion Involvement (FI), making them highly responsive to tailored sustainability messaging. The findings regarding how social and cultural norms influence their positive attitude (H1) are essential for developing community-centric marketing strategies. Future research should utilize this foundation to conduct comparative cross-cultural studies to assess how thrift perceptions vary globally.

Furthermore, the study provides a roadmap for integrating Future Technologies to overcome the limitations inherent in digital thrift:

- a) **AI Refinement and Generative AI:** Given the proven impact of HP, future implementation should leverage advanced generative AI to create even more highly customized shopping environments. This technology can refine content and product design, but must be paired with clear AI disclosures to preserve trust.
- b) **Addressing Risk and Trust:** To overcome perceived risks like authenticity and quality control, future platforms should explore using Blockchain technology to provide verified Digital Authenticity Certificates.
- c) **Visualization Technologies:** As the fit and quality of second-hand items are major consumer concerns, platforms must adopt advanced visualization tools like Virtual Try-on, 3D scanning/modeling, and Augmented Reality (AR). These tools enhance the functional value of the purchase experience, thereby reducing the perceived functional risk associated with buying pre-owned garments.

By focusing on user-driven control, maximizing transparency, and leveraging cutting-edge technology to address the challenges of quality and authenticity, the insights from this research will guide the successful expansion of the digital thrift sector, ensuring its growth is sustainable, profitable, and aligned with consumer values

7. Impact of the Research

The rigorous analysis of hyper-personalization (HP) in the digital thrift environment yields profound implications for both academic theory and industry practice, particularly regarding optimization, trust management, and strategic technological investment.

A. Theoretical Implications

This research significantly contributes to the theoretical understanding of consumer behavior in dynamic digital markets by providing a novel refinement of the Stimulus-Organism-Response (SOR) Model.

- a) *Non-Linear Effects of Personalization*: The core theoretical contribution is the empirical demonstration of a curvilinear effect of Personalization Intensity on purchase intention. This establishes that the utility derived from customization peaks at a moderate level, after which excessive intensity generates negative returns, confirming the "Tailored or Overloaded" hypothesis. This model refines how scholars conceptualize the impact of AI-driven digital stimuli, moving beyond simple linear relationships.
- b) *Psychological Mechanisms*: The study validates the roles of internal psychological states by confirming that Cognitive Overload acts as a powerful negative mediator. This substantiates the mechanisms by which high personalization intensity (the stimulus) translates into suppressed behavioral outcomes (the response), offering a clearer map of cognitive friction in the digital shopping environment. Conversely, the positive mediating role of Attitude toward Personalization reinforces constructs central to frameworks like the Theory of Planned Behavior (TPB).
- c) *Moderating Role of Trust*: By confirming that Trust in the Platform acts as a crucial moderator, this framework enhances the theory surrounding the personalization-privacy paradox. Trust acts as a necessary buffer, making consumers more resilient to potential privacy concerns or perceived overload associated with intensive data collection needed for HP.d)

B. Practical Implications

The findings offer critical, actionable guidance for digital thrift platforms aiming to achieve competitive advantage and promote sustainable consumption.

- a) *Optimal Strategy and Avoiding Overload*: Managers must identify and adhere to the optimal level of HP intensity. Strategies should prioritize relevance and timeliness, rather than volume or frequency, to prevent customer annoyance and Cognitive Overload. Excessive personalization, irrelevant content, or aggressive retargeting are perceived as intrusive, which destroys consumer value.
- b) *Enhancing User Autonomy with Exclusion Filters*: A key practical recommendation is the implementation of mechanisms like Exclusion Filters. Consumers actively seek tools to manage the vast quantity of information, wishing to filter out unwanted attributes (e.g., brands, colors). Providing users with greater control over the personalization output directly mitigates perceived overload and enhances the user experience.
- c) *Building Trust and Minimizing Risk*: Given that the second-hand market involves perceived functional risks (quality, durability) and requires consumer trust, platforms must prioritize transparency in algorithm design and data usage. Practical steps include

enhancing seller verification and quality control measures. Furthermore, adopting visualization technologies like 3D modeling or Augmented Reality (AR) can reduce the uncertainty related to fit and quality, thus lowering functional risk and favoring conversion.

- d) *Strategic Technological Investment*: Platforms should explore integrating Blockchain technology to provide verified authenticity and traceability, which addresses core trust deficits in the second-hand market. For industry practitioners like retailers and designers, leveraging digital technologies, such as utilizing big data and AI, is crucial for offering personalized, smoother customer experiences and gaining competitive market advantages.

8. Impact of the Research

A. Limitations of the Study

The inherent constraints of this research, encompassing methodological choices and sample scope, necessitate caution when generalizing the findings.

Methodological and Data Constraints: The use of a specific sampling method, often involving convenience sampling, limits the generalizability of the results to a broader population. Specifically, reliance on samples drawn primarily from metro cities, university students, or geographically limited contexts (e.g., Finnish consumers or Swedish consumers) may not fully capture the diversity of consumer perspectives across different demographics or global markets.

Furthermore, the research relies on self-reported measures. While these provide rich, subjective insights, they may be subject to limitations such as social desirability bias (where participants report socially acceptable views, particularly regarding sustainability) or merely reflect individual perceptions and recall, which may not always reflect long-term behavioral patterns. The quantitative nature of the findings may lack the in-depth insights provided by purely qualitative studies, and the qualitative approach is open to researcher subjectivity and interpretation bias.

Scope and Focus Limitations: The study considered a limited number of variables for analysis. Also, the cross-sectional nature of the research captures consumer decision-making at a single point in time, which is insufficient given the dynamic evolution of consumer behavior, technological advancements, and shifting social values. Lastly, concentrating on broad e-commerce trends rather than delving deeply into industry-specific dynamics (such as fashion, travel, or electronics) means that personalization preferences may vary in ways this study does not fully capture.

B. Future Research Directions

Based on these limitations and the emerging trends in digital transformation, several avenues for future research are proposed:

Expansion of Scope and Methodology: Future studies should employ a mixed-methods approach, integrating robust

quantitative surveys (with larger, more representative samples) with qualitative methods (such as in-depth interviews or focus groups) to enhance the robustness and generalizability of the findings. Specifically, a quantitative survey targeting a larger sample of e-commerce users could further validate and expand on the prevalence of identified attitudes and behaviors, testing correlations between variables like trust, personalization preferences, and perceived sustainability.

Dynamic and Comparative Research: Longitudinal studies are strongly recommended to track changes and developments in consumer attitudes toward hyper-personalization and thrifting over extended periods. Researchers should conduct cross-cultural studies in different countries to investigate how cultural factors influence personalization perceptions and participation in online second-hand markets. Furthermore, research should expand the participant demographic to include a broader range of ages, socio-economic statuses, and rural populations to provide a more comprehensive understanding beyond the typical young adult student samples.

Deepening Personalization and Overload Insight: Future research should investigate how platforms can tailor the amount of personalized marketing and communication to better match each consumer's individual preference profiles, directly addressing the "Overloaded" component. It would also be valuable to explore how businesses operationalize sustainability goals in the design of Recommender Systems (RS), shedding light on internal trade-offs through interviews with developers or product managers. Moreover, integrating observational or behavioral data (e.g., transaction records) could complement self-reported measures to provide a more comprehensive picture of actual consumer actions.

Technological Frontiers in Digital Thrift: Continued research is needed into the role of emerging technologies such as AI, Virtual Reality (VR), and blockchain in enhancing customization experiences and managing key risks in the second-hand market. Research could explore the utilization of advanced 3D technologies (e.g., body scanning, design, sampling) in developing customizable fashion, and investigate how new applications like virtual try-ons and smart wardrobes influence purchasing decisions and reduce return rates. The implications of emotional AI systems becoming standard

equipment in devices also warrants investigation, especially concerning customer monitoring and hyper-personalized emotional services.

References

- [1] N. Ahmadi, "The role of AI in predictive analytics and customer experience hyper-personalization in luxury brand marketing," Master's thesis, Politecnico di Milano, Milan, Italy, 2025.
- [2] M. Amazigh, "From persuasion to automation: How digital culture redefines consumer behavior," *International Journal of Human Studies*, vol. 4, no. 1, pp. 117–141, 2025.
- [3] L. Jokinen, *Consumer Experiences with Personalized Marketing and Communication in E-Commerce*, Master's thesis, Jyväskylä University School of Business and Economics, Finland, 2025.
- [4] Y. Hao, "Trends and styles in the fashion industry: A market analysis of consumer behavior, second-hand market, and luxury segment," 2023.
- [5] K. Heinonen and T. Strandvik, "Consumer responsiveness to marketing communication in digital channels."
- [6] G. Jain *et al.*, "Hyper-personalization – fashion sustainability through digital clienteling," *Research Journal of Textile and Apparel*, vol. 22, no. 4, pp. 320–334, 2018.
- [7] H. João and M. Faisca, "Millennial and Generation Z consumer participation in online second-hand transactions in the Portuguese context," 2023.
- [8] S. Liu and C. Liu, "Mapping the digital transformation in the fashion industry," *Journal of Fashion Marketing and Management*, 2025.
- [9] J. Luoma, "From thrift to trend: Analysing the role of the second-hand fashion industry in shaping consumer behaviour."
- [10] R. Mangiaracina, "Innovative tools for the prevention of product returns in e-commerce," 2021.
- [11] N. A. Mobarak *et al.*, "Second glance: Exploring consumer shifts to thrift shopping and perception of second-hand fashion," *Future Business Journal*, 2025.
- [12] I. Mohr *et al.*, "Fashion resale behaviours and technology disruption: An in-depth review," 2022.
- [13] N. A. Nizar and C. Janathanan, "Impact of digital marketing on consumer purchase behaviour," 2018.
- [14] R. Panda and J. Nair, "Mindful consumption of used fashion apparel among Gen Z on online thrift stores," 2025.
- [15] "Buana komunikasi: Lifestyle choice."
- [16] S. K. Priya, "Exploring the potential of exclusion filters in e-commerce platforms," 2025.
- [17] "Research model."
- [18] "Research model (1)."
- [19] R. Sham *et al.*, "Influence of thrifting products purchasing behavior," *Environment-Behaviour Proceedings Journal*, 2024.
- [20] H. Stenström and A. Rafles, "Recommender systems for e-commerce platforms."
- [21] Z. Sulaiman *et al.*, "Thrifting trends: A conceptual framework for online second-hand shopping using SOR theory," 2024.
- [22] G. Mazurek and J. Tkaczyk, *The Impact of the Digital World on Management and Marketing*. Warsaw, Poland: Poltext, 2016.