

Expectation Confirmation Theory on Repurchase Intention of Green Products in the Middle-Class Squeeze Mediated by Customer Engagement

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Abstract

This study aims to analyze the influence of Expectation Confirmation, Perceived Usefulness, and Satisfaction on Repurchase Intention, both directly and through Customer Engagement as a mediating variable. This study used a quantitative approach with path analysis to test seven proposed hypotheses. The results showed that Expectation Confirmation and Perceived Usefulness have a positive and significant effect on Repurchase Intention. Furthermore, the three main variables (Expectation Confirmation, Perceived Usefulness, and Satisfaction) also have a significant influence on Customer Engagement. However, Customer Engagement did not have a significant effect on Repurchase Intention, thus its role as a mediator was not statistically proven. These findings indicate that customer expectation fulfillment, perceived usefulness, and satisfaction are key factors in shaping loyalty through repurchase intention, while customer engagement does not directly drive this behavior.

Keywords: Expectation Confirmation, Perceived Usefulness, Satisfaction, Customer Engagement, Repurchase Intention

1. Introduction

The middle-class squeeze phenomenon has become a highlight in the economic dynamics of society, especially for middle-income groups who are now facing financial pressure due to the high cost of living and income stagnation (Brin, 2024)(Moawad & Oesch, 2024). This phenomenon is evident in the decline in people's purchasing power (Ahmad, 2024), economic uncertainty, deflation in Indonesia, resulting in the number of middle class people being threatened with relegation to vulnerable poverty and poverty (CNBC, 2024)(Kompas, 2024)even though the middle class is the largest class and is the foundation of the Indonesian economy (BPS, 2024). Deflationary conditions also occurred in East Java, even twice deflation only at the beginning of 2025 (Jatim, 2025)(BPS Jawa Timur, 2025). This condition has an impact on consumption behavior, including in repurchase decisions for products that are considered to have added value but also relatively high prices, such as green products.

Green products are experiencing development (Azizah, 2023a)(Azizah, 2023b)(Guo & Ya, 2015)(Ta'Amnha et al., 2024)(Pérez-Hernández et al., 2021)even in Indonesia in particular and also East Java (Herman & Anggraeni, 2015)(History et al., 2024)(Azizah, 2024)(Ekonomi, 2023)(Azizah et al., 2024). The increase in green product consumers is starting to grow in Indonesia (Nadiya & Ishak, 2022). However, despite offering long-term benefits, these products are often less competitive in terms of price in the eyes of middle-class consumers who are sensitive to changes in purchasing power of green products that are perceived negatively starting from higher prices and lower quality compared to conventional products (Wang & Hazen, 2016)(Bigliardi et al., 2020)(Groening et al., 2018). In such situations, the decision to make a repeat purchase is not only determined by the quality of the product, but also by the consumer's perception of the extent to which the product meets their expectations (Wang & Hazen, 2016)(Bigliardi et al., 2020)(Groening et al., 2018).

Expectation Confirmation Theory (ECT) explains that consumers' intention to repurchase is strongly influenced by the extent to which their actual experiences match their initial expectations (Rothe, 2023)as well as environmental information (C. S. Lin et al., 2005)(A. Bhattacherjee, 2001). ECT has been widely used in examining sustainability intentions (C. S. Lin et al., 2005). When expectations regarding the benefits of green products are met or even exceeded, satisfaction is

formed and drives consumer loyalty. However, meeting expectations alone is not always sufficient, especially in the context of economic pressures (AlSokkar et al., 2024).

In this regard, customer engagement is considered to play a role when consumers feel emotionally, cognitively, and behaviorally involved with a green brand or product. Consumers tend to be more loyal and able to tolerate financial constraints to maintain consumption choices that align with their personal values (Lim et al., 2022a) (Huang & Chen, 2022) (Karunarathna et al., 2020). High engagement can strengthen the relationship between met expectations and repurchase intentions, even in economically challenging situations (Bryła et al., 2022) (Melander & Arvidsson, 2022).

This study examines the relationship between expectation confirmation and repurchase intention for green products, with customer engagement as a mediating variable, and considers the context of economic pressure within the middle-class squeeze phenomenon. Therefore, a strong conceptual understanding of these theories and variables is required.

The ECT variables used to measure this research consist of: 1) Perception confirmation, 2) Confirmed expectations, and 3) Satisfaction (Brown, 2012).

The definitions we use are: Perceptual confirmation: The degree of conformity between a consumer's perception of a product or service's performance and their initial expectations (A. Bhattacherjee, 2001). Confirmed expectations: The evaluation process undertaken by consumers to determine the extent to which the actual performance of a product or service matches their initial expectations (Rahi & Ghani, 2019)

Expectation Confirmation Theory (ECT)

Expectation Confirmation Theory (ECT) in this study is defined as the extent to which users feel their initial expectations are confirmed according to reality during actual use (Rahi & Abd. Ghani, 2019)(C. S. Lin et al., 2005)(C. P. Lin et al., 2009).

Bhattacherjee (A. Bhattacherjee, 2001) (A. and G. P. Bhattacherjee, 2014) adapted and developed ECT in the context of post-purchase behavior, specifically in explaining continuance intention including repurchase intention. In this expanded version, Bhattacherjee added the variable perceived usefulness as a mediator between expectation confirmation and satisfaction, particularly in the context of technology or value-based products and long-term benefits—which is particularly relevant for green products.

a. Expectation Confirmation

Expectation confirmation refers to the comparison between consumers' initial expectations and the actual performance they experience after using a product (Rahi & Ghani, 2019)(Lee, 2020)(AlSokkar et al., 2024). Confirmation can be: Positive, when product performance meets or exceeds expectations. Negative, when product performance falls below expectations. In the context of green products, expectation confirmation occurs when environmental benefits, product quality, or sustainability image match consumers' expectations.

b. Perceived Usefulness

Perceived usefulness is a consumer's perception of the extent to which a product or service provides significant benefits in their lives (Rahi & Abd. Ghani, 2019) (Gunawan et al., 2022). For green products, perceived usefulness can include health benefits, contributions to environmental conservation, and reduced negative impacts on the planet.

c. Satisfaction

Satisfaction is an affective evaluation of a consumption experience (Yulisetiarini et al., 2025)(Azizah et al., 2023). In ECT, satisfaction is formed from a combination of expectation confirmation and perception of the product's usefulness (A. Bhattacherjee, 2001)(Rahi & Ghani, 2019). Consumers of green products will feel satisfied if they believe that the product not only meets expectations but also provides real value, both personally and socially. The ECT model that combines these three variables is very relevant to examining green product repurchase intentions in stressful economic conditions such as the middle-class squeeze. In this context, consumers will only repurchase if they are rationally and emotionally satisfied. Satisfaction will only form if there is confirmation of expectations and perceptions that the product is truly useful or beneficial. Perceived usefulness is crucial because middle-class consumers need to justify the value of their expenditures.

Green Product Study

A green product is a product that is designed, produced, used, and disposed of with minimal negative impact on the environment. These products typically promote sustainability and are environmentally friendly throughout their life cycle (Azizah, 2024)(Azizah, 2022a)(Azizah, 2022b)(Azizah, 2023b)(Azizah et al., 2024).

Customer Engagement

Customer engagement refers to the level of emotional, cognitive, and behavioral involvement of consumers with a brand, product, or service (Lim et al., 2022b)(Kim & Kim, 2014)(Rather & Sharma, 2016)(Kritzinger & Petzer, 2021). It reflects the depth of relationships built through meaningful consumer interactions and experiences.

Customer engagement reflects consumers' active participation and voluntary contributions to a brand, both directly (e.g., purchases, reviews) and indirectly (e.g., word-of-mouth, brand advocacy). Many studies (Hollebeek et al., 2021)(Sukendia & Harianto, 2021)have established customer engagement across several key dimensions. This study uses the following five variables (So et al., 2016): Identification: the extent to which consumers perceive a brand as reflecting their values or identity. Enthusiasm: the level of emotional arousal and excitement about interacting with the brand. Attention: the level of cognitive focus or concentration on the brand. Absorption: the extent to which consumers are immersed or fully engaged in the brand experience. Interaction: participatory activities such as communication, recommendations, and social engagement.

Repurchase Intention

Repurchase intention is a consumer's commitment or tendency to repurchase the same product or service based on previous experiences (Azizah, 2022c)(Azizah, 2023b). In the context of green products, it refers to a consumer's tendency to continue using environmentally friendly products after the first experience.

Given the importance of the relationship between expectation confirmation, customer engagement, and repurchase intention in the context of middle-class pressure, this study was conducted to examine how Expectation Confirmation Theory can explain repurchase intention for green products by considering the mediating role of customer engagement. This study is expected to provide theoretical and practical contributions in green product marketing strategies that are more relevant to current socio-economic conditions.

2. Methods

This study employs a quantitative approach using a survey method, where data are collected from a natural setting rather than a controlled or artificial environment. The data collection process involves distributing questionnaires to respondents in selected areas. The population of this study includes all individuals who have made purchases of green products, and the sampling technique used is probability sampling.

The sample was selected using a simple random sampling method, providing equal opportunity for every individual in the population to be chosen. The questionnaires were distributed in Region V East Java, Jember Regency, Bondowoso Regency, Probolinggo Regency, Lumajang Regency, Banyuwangi Regency, which are buyers from MSMEs who are members of the Handycraft Association of Region V East Java.

The questionnaire was distributed both online via links shared with willing respondents and offline via direct, in-person distribution. A five-point Likert scale was used, with the following response options: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral/No Opinion, 4 = Agree, and 5 = Strongly Agree. A mean score above 3 was interpreted as an indication of agreement with the questionnaire items.

Out of 400 questionnaires distributed, 351 were returned with complete responses and were deemed usable for data analysis. The remaining 49 responses were incomplete and could not be processed further due to missing data on multiple items.

Validity and Reliability Testing

Reliability testing aims to assess the consistency of the instrument as a measuring tool, ensuring that the instrument produces stable and consistent results. The reliability of the instrument is considered acceptable when Cronbach's Alpha and Composite Reliability (CR) values exceed 0.70 (Roger & Uma, 2017).

Validity testing evaluates the instrument's ability to measure what it is intended to measure. Convergent validity is assessed using outer loading and Average Variance Extracted (AVE), with an AVE value above 0.50 indicating good validity. Discriminant validity is evaluated using cross loading

values and comparing the square root of the AVE with correlations among latent variables. A square root of AVE greater than the correlation coefficients and above 0.70 within each variable indicates good discriminant validity.

Data analysis was conducted using Structural Equation Modeling (SEM) based on Partial Least Squares (PLS) with the support of the WarpPLS 7.0 software (Kock, 2021)(Kock, 2011). The structural model is assessed using R-square values, path coefficients, and t-values (Hair et al., 2021). R-square values are used to determine the extent to which exogenous latent variables affect endogenous latent variables and to evaluate the substantive influence of those relationships.

Hypothesis testing was conducted to assess the relationship between exogenous and endogenous constructs, as well as among endogenous constructs. To test the significance of path coefficients, bootstrapping was applied. Bootstrapping is a statistical procedure that generates new simulated datasets by randomly resampling from the existing sample data. This method does not require the assumption of normal distribution and is suitable even for relatively small sample sizes. The test statistic used is the t-test, which evaluates the significance of relationships between variables in the model.

The methods section describes the steps followed in the execution of the study and also provides a brief justification for the research methods used. It should contain enough detail to enable the reader to evaluate the appropriateness of your methods and the reliability and validity of your findings. Furthermore, the information should enable experienced researchers to replicate your study. The methodology section contains the approach used in producing scientific articles. Specifically for scientific research articles, the methodology section includes research methods, populations, and samples, as well as data analysis steps.

3. Results and Discussion

a. Descriptive Statistics with Respondent Characteristics

Of the 354 green product buyers from the handicraft MSME community, 60.45% were women and 39.55% were men. This indicates that women are more involved as consumers of green products produced by handicraft MSME actors. Women are more involved in purchasing decisions for craft, decorative, and environmentally ethical products. Green handicraft products often have aesthetic value and household functions, which culturally attract more women. The handicraft MSME community also frequently holds events or promotions targeting the female market as the main target, namely items such as clothes, umbrellas, flowers, and various accessory products. The dominance of women as buyers can indicate the main market segmentation for green product handicraft MSMEs. These findings can be used for gender-based marketing strategies by MSMEs to optimize customer engagement and repeat purchases.

Based on income, it can be seen in the following table 1:

Income Range (Rp)	Number of Respondents	Percentage (%)
Under 1,000,000	0	0%
1,000,000 - 2,000,000	81	22.88%
2,000,000 - 4,000,000	164	46.33%
4,000,000 - 6,000,000	109	30.79%
Total	354	100%

 $\textbf{Table 1.} \ \textbf{Distribution of Respondents Based on Monthly Income}$

Data source: Processed research results

The largest group (46.33%) is in the income range of Rp2,000,000 – Rp4,000,000, which can be categorized as the lower middle class in the Indonesian economic context. This shows that consumers of green products from handicraft MSMEs are dominated by groups with quite limited incomes but are still involved in consuming environmentally oriented products. A total of 77.12% of respondents (combined income of Rp1,000,000 – Rp4,000,000) are included in the group that has the potential to experience economic pressure or known as *middle-class squeeze*, namely a condition where needs increase but purchasing power is limited. This makes the research context increasingly relevant because it shows the challenge in maintaining repurchase intentions for green products amid economic limitations. Despite economic pressure, this group still shows interest in green products. This opens up opportunities for a more inclusive pricing strategy. Communication of the long-term

benefits of green products (e.g., durable, environmentally friendly, supporting the local economy). An engagement approach that builds emotional attachment and community values. There are no respondents with incomes below Rp. 1,000,000. This may indicate that buyers of green products from handicraft MSMEs tend to come from community groups that have adequate minimum consumption capacity, and not from extreme poverty groups.

Distribution based on type of work can be seen in table 2.

Type of work	Number of Respondents	Percentage (%)
Businessman	112	31.63%
Private sector worker)	188	53.11%
Government employees	47	13.28%
Farmer	0	0%
Breeder	0	0%
Other	7	1.98%
Total	354	100%

Table 2. Distribution of Respondents Based on Type of Work

Data source: Processed research results

Workers (Private) dominated the number of respondents with 188 people (53.11%), indicating that green products from handicraft MSMEs are quite popular among workers with fixed but limited income. Entrepreneurs ranked second with 112 respondents (31.63%), indicating that small business owners are also a potential market for green products because they have a preference for local, handmade products, or have high environmental awareness. Civil servants numbered 47 people (13.28%), this indicates that despite having a stable income, civil servants are not the majority market for green products from handicraft MSMEs. Other professions (such as students, freelancers, housewives, and so on) numbered 7 people (1.98%).

No Respondents from the Agricultural Sector (Farmers and Livestock Farmers) The absence of respondents from the agricultural sector may indicate that green handicraft MSME products are less well-known or less relevant to the needs and preferences of agricultural groups. Distribution and promotional channels for handicraft MSMEs have not yet reached rural communities, which are predominantly agricultural. This group has limited access to surveys (both digitally and through product distribution networks).

b. Data Presentation

1) Validity and Reliability

The fit model in the general result Wrap PLS 7 of this study provides appropriate results and can be accepted as a FIT model, where the VIF of 1.279 is the ideal model. The tenenhous GoF category is large, namely 0.557, the ideal SPR is 1.000, the R-squared contribution ratio is 1.000, which is ideal. More clearly can be seen in Figure 1 below.

Model fit and quality indices

Average path coefficient (APC)=0.240, P<0.001

Average R-squared (ARS)=0.403, P<0.001

Average adjusted R-squared (AARS)=0.397, P<0.001

Average block VIF (AVIF)=1.279, acceptable if <= 5, ideally <= 3.3

Average full collinearity VIF (AFVIF)=1,500, acceptable if \leq 5, ideally \leq 3.3

Tenenhaus GoF (GoF)=0.557, small >= 0.1, medium >= 0.25, large >= 0.36

Sympson's paradox ratio (SPR)=1,000, acceptable if >= 0.7, ideally = 1

R-squared contribution ratio (RSCR)=1,000, acceptable if >= 0.9, ideally = 1

Statistical suppression ratio (SSR)=1,000, acceptable if >= 0.7

Nonlinear bivariate causality direction ratio (NLBCDR)=1,000, acceptable if >= 0.7

Figure 2. Research Result Fit Model

Data source: Processed data

The validity of reflective constructs in a measurement model can be assessed based on two main criteria: (1) the loading factor must exceed 0.70, and (2) the p-value must be statistically significant (p < 0.05) (Hair et al., 2017; Kock, 2020). Based on the analysis results presented in Table 3, all items in the model have loading factor values above the 0.70 threshold. Therefore, all items meet the requirements for convergent validity and are considered valid.

Furthermore, discriminant validity was assessed using the Average Variance Extracted (AVE), which should be greater than 0.50. As shown in Table 4, all constructs fulfill this criterion with the following AVE values: Expectation Confirmation (0.817), perceived Usefulness (0.783), satisfaction (0.756), Repurchase intention (1.000), Customer Engagement (1.000).

Overall, the questionnaire used in this study is deemed valid, as each item accurately represents the intended construct. The tabulated results of the validity tests conducted using PLS are presented in the following section in Table 2:

Variables	AVE	Reliable Composite	Cronbach's Alpha
Expectation Confirmation	0.817	0.800	0.710
Perceived Usefulness	0.783	0.826	0.451
Satisfaction	0.756	0.727	0.906
Repurchase Intention	1,000	1,000	0.925
Customer Engagement	1,000	1,000	0.816

Table 2. AVE, Composite Reliability and Cronbach Alpha Values

Data source: Wrappls Data

Furthermore, the results of the calculations can produce the following model:

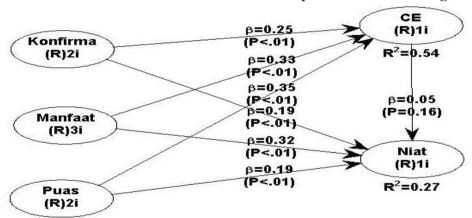


Figure 2. Research Model Output from WrapPLS

Data source: WrapPls Data

R-Square

Path analysis in research can be categorized into three levels: weak (0.02), moderate (0.15), and substantial (0.35) (Kock, 2013; Hair et al., 2013). The structural model in Partial Least Squares (PLS) is assessed using the R^2 value. A higher R^2 indicates a better predictive ability of the proposed research model. The R-square values in this study are presented in Table 3.

Expectation	Perceived	Satisfactio	Customer	Intentio
Confirmation	Usefulness	n	Engagement n	
			0.535	0.259

Table 3. R-Square Value Data source: Wrappls Data

The model built with Expectation Confirmation Theory (ECT) as a predictor variable was able to explain 53.5% of the variation in customer engagement. This indicates that ECT has a substantial influence on customer engagement. This value is considered strong in the context of social sciences. ECT components such as expectation confirmation, perceived usefulness, and satisfaction together are quite capable of influencing customer enthusiasm, attention, absorption, identification, and

interaction levels. The more positive customers' experiences and perceptions of green products (in terms of benefits and satisfaction), the higher their emotional and cognitive engagement.

The model explains 25.9% of the variation in repurchase intention based on ECT variables. This value is considered moderate and still reasonable in social research. This means that the ECT components can only explain a small portion of customers' intention to repurchase green products. This indicates that repurchase intention is not only influenced by ECT but is also likely influenced by other variables such as price and purchasing power during the middle-class squeeze.

Hypothesis	Relationship	Path Coefficient	P. Value	Results
Н1	Expectation Confirmation towards Repurchase Intention	0.192	<0.001	Accepted
Н2	Perceived Usefulness on Repurchase Intention	0.320	< 0.001	Accepted
Н3	Satisfaction with Repurchase Intention	0.186	< 0.001	Accepted
H4	Expectation Confirmation regarding Customer Engagement	0.192	<0.001	Accepted
Н5	Perceived Usefulness towards Customer Engagement	0.320	< 0.001	Accepted
Н6	Satisfaction with Customer Engagement	0.186	< 0.001	Accepted
Н7	Customer Engagement on repurchase intentions	0.053	0.160	Rejected

Table 3: Hypothesis Test Results Data source: Wrappls Data

This study tested seven hypotheses related to factors influencing customer engagement and repurchase intention. Path analysis results indicated that most of the proposed hypotheses were accepted, with a p-value <0.001, indicating a strong and statistically significant relationship between the variables

The first hypothesis (H1) shows that Expectation Confirmation has a positive and significant effect on Repurchase Intention, with a path coefficient of 0.192. This indicates that when consumers' expectations are met, their likelihood of making a repeat purchase increases (A. and G. P. Bhattacherjee, 2014)(Rahi & Ghani, 2019)(Lee, 2020)(Vinerean et al., 2024).

The second hypothesis (H2) tested the effect of Perceived Usefulness on Repurchase Intention, and the results showed a positive and significant relationship with a coefficient of 0.320. This indicates that consumers' perceptions of the usefulness of a product or service play a significant role in driving repurchase intentions (A. and G. P. Bhattacherjee, 2014)(Rahi & Ghani, 2019)(Lee, 2020)(Vinerean et al., 2024).

The third hypothesis (H3) found that satisfaction significantly influences customer engagement, with a coefficient of 0.186. This indicates that consumer satisfaction levels can increase their engagement with a brand or product (A. and G. P. Bhattacherjee, 2014) (Rahi & Ghani, 2019) (Lee, 2020) (Vinerean et al., 2024).

The fourth hypothesis (H4) shows that Expectation Confirmation also has a significant effect on repurchase intention (coefficient 0.192), confirming the importance of fulfilling expectations in building a deeper relationship between consumers and brands (A. and G. P. Bhattacherjee, 2014)(Rahi & Ghani, 2019)(Lee, 2020)(Vinerean et al., 2024).

The fifth hypothesis (H5) shows that Perceived Usefulness has a positive and significant influence on Customer Engagement, with a fairly high coefficient of 0.320. This means that the higher consumers' perception of usefulness, the greater their engagement (A. and G. P. Bhattacherjee, 2014)(Rahi & Ghani, 2019)(Lee, 2020)(Vinerean et al., 2024).

The sixth hypothesis (H6) again tests the influence of Satisfaction on Customer Engagement, with results identical to H3, namely a coefficient of 0.186 and significance <0.001, which supports this positive and significant influence (A. and G. P. Bhattacherjee, 2014)(Rahi & Ghani, 2019)(Lee, 2020)(Vinerean et al., 2024).

However, in the seventh hypothesis (H7), it was found that Customer Engagement had no significant effect on Repurchase Intention, with a path coefficient of 0.053 and a p-value of 0.160. Therefore, this hypothesis was rejected. These results indicate that although consumers are engaged with a brand, it does not directly increase their desire to repurchase.

Even if someone is engaged *in* interactions with a green product (e.g., interested, liking, or even interacting frequently), this may not be enough to form a behavioral commitment in the form of repurchase intention. It could be that the emotional connection or perceived utility value is not strong enough to drive a repeat purchase decision. In the context of middle-class squeeze, limited purchasing power can prevent consumers from following through on their engagement to repeat purchases, even if they like or support green products. This means that emotional or cognitive engagement does not automatically translate into behavior because financial pressure is the primary barrier.

Customer engagement may occur at a superficial level, such as simply being enthusiastic on social media or simply interested in the idea of a green product, but not yet forming a deeper connection such as brand identification, loyalty, or ongoing satisfaction. This type of engagement is not sufficient to influence repurchase decisions. In many studies, customer engagement does not have a direct impact, but rather an indirect influence through mediating variables such as customer satisfaction, trust, or brand commitment. If these variables are not explicitly examined or are not sufficiently strong, the direct relationship between engagement and repurchase intention may appear insignificant. Within the ECT framework, expectation confirmation and satisfaction are the primary drivers of repurchase intention. Therefore, even if engagement is present, it may be less influential than satisfaction or perceived usefulness. This suggests that rational perceptions are more dominant than emotional or social involvement.

The consumers studied are indeed in the middle-class squeeze of the handicraft MSME community and may be more pragmatic and price-sensitive. They may purchase out of necessity or to support local businesses, but they are not actively engaged in long-term relationships with brands. This makes engagement less relevant in repeat purchase decisions. Overall, these results suggest that satisfaction, expectation confirmation, and perceived usefulness play a significant role in building repeat purchase intentions, both directly and through consumer engagement, although engagement itself does not directly drive repeat purchases.

4. Conclusion

Expectation Confirmation and Perceived Usefulness have been shown to have a significant direct influence on Repurchase Intention, meaning that when consumer expectations are met and a product/service is perceived as useful, consumers are more likely to make a repeat purchase. Satisfaction, Expectation Confirmation, and Perceived Usefulness have also been shown to have a significant influence on Customer Engagement. This suggests that positive experiences and perceived usefulness can increase consumer engagement with a product or brand.

However, Customer Engagement does not show a significant influence on Repurchase Intention, so it can be concluded that consumer engagement alone is not enough to encourage repurchase decisions without being supported by other factors such as satisfaction and perceived benefits.

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