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COGNITIVE FACTORS OF RECOMMENDATION SYSTEMS AND THEIR INFLUENCE IN BUILDING TRUST TO DRIVE CONSUMER PURCHASE INTENTION: A SYSTEMATIC LITERATURE REVIEW

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ABSTRACT

The development of technology has created recommendation systems as a tool for increasing user experience and marketing effectiveness in e-commerce platforms. Recommendation systems play a crucial role in helping consumers find relevant products. However, cognitive factors associated with the effectiveness of recommendation systems that, in turn, affect consumer trust and purchase intention require investigation. This study aims to systematically examine the cognitive factors that influence the effectiveness of recommendation systems and their influence on customer trust, which mediates the influence of recommendation systems on consumer purchase intention. This research utilized a Systematic Literature Review using the PRISMA protocol. 664 articles from the Scopus and Dimensions databases were gathered, and 13 articles qualified for the criteria of eligibility for further research. The analysis of these 13 studies reveals that cognitive properties like recommendation accuracy, novelty, precision, and explainability are the primary factors determining consumer trust in recommender systems. Although trust is often recognized as a construct in conceptual discussions, many empirical studies have not explicitly modeled trust as a variable that mediates the cognitive factors in recommendation systems with purchase intention. The lack of explicit mediation analysis in previous research highlights the theoretical gap between cognitive factors and behavioral outcomes, opening opportunities for future research to examine more rigorous causal pathways. Theoretically, this study advances our understanding of cognitive and affective interactions in recommendation systems, while also providing practical implications for e-commerce platform developers in balancing technical and behavioral aspects of users to enhance loyalty and purchase intention.

Keywords: Recommendation Systems, Systematic Literature Review, Trust

1. INTRODUCTION

The growth of digital technology has changed the way people use e-commerce platforms. Platforms offering thousands of similar products create an environment where consumers have to spend a lot of time and effort evaluating alternatives before making a purchase (Nurchaya & Supriyanto, 2020). To address this challenge, e-commerce platforms operating today have invested heavily in recommendation systems (RS), a tool designed to help users navigate a vast product catalog by personalizing suggestions based on their behavior, preferences, and previous search history (Schafer et al., 1999), (Stöckli & Khobzi, 2021). Recommendation systems, as one of the innovations in e-commerce development, enable personalization of the online shopping experience by adjusting product displays based on user preferences. In the context of increasingly fierce competition, e-commerce platforms are required to make it easier for users to find relevant products that meet their needs (Wu et al., 2018).

Accordingly, various platforms are still endeavoring to innovate better user experience especially through adaptive and intelligent recommendation strategies. Recommendation systems are one way to sift through online media, offering users information that is relevant and personalized to their interests. These systems are developed to enable users to find relevant content easily on the world wide web without a lot of effort. Recommendation systems are categorized in three groups, namely content-based, collaborative and hybrid (Roy & Dutta, 2022). Collaborative Filtering recommends based on other similar people's taste or behavior. Content-Based Systems recommend based on item properties and a user's previous choice (Aggarwal et al., 2017). Hybrid models are a mixture of collaborative and content-based schemes aiming to leverage their individual strengths while blending different recommendation algorithms together to maximize diversity and accuracy of recommendations (K. Yadav, H.K.Soni, G. Yadav, 2023).

In today's digital era, the recommendation system is a business model that is an essential feature of customer interaction and plays a role in increasing the economic value of the platform. Customers are served with too much information, and it is difficult to make buying decisions (Wu et al., 2018). By analyzing big data and learning algorithms, the system will learn user behavior, anticipate needs, and show products relevant to individual preferences (Stöckli & Khobzi, 2021). Recommendation systems not only improve information search efficiency but can also expand marketing opportunities and optimize consumer purchasing decisions on e-commerce platforms.

Trust in recommendation systems have been identified as a significant psychological mediator influencing purchase intention. When users perceive the system as providing relevant, transparent, and bias-free recommendations, they are more likely to rely on those recommendations in their purchase decisions. However, previous research has yielded mixed results, some found a strong positive relationship between trust and purchase intention, while others reported weak or insignificant effects, depending on the platform context and consumer characteristics.

The purchase intention referred to is online purchase intention. It refers to how willing consumers are to buy products through an online store (Nguyen & Nguyen, 2024). Purchase intention is also means how ready a consumer is to buy a product from an online store (Gillsaura et al., 2020). Purchase intention shows how likely someone is to plan to buy or show interest in getting a particular product or service soon (Wu, P. C., Yeh, G. Y. Y., & Hsiao, 2011). In the promotion's context, purchase intention means how people decide to buy a product or service because of ads or promotional messages they see (Lee et al., 2017).

Several previous studies have examined the relationship between recommendation systems, trust, and purchase intention (Abumalloh et al., 2020), (Nilashi et al., 2016), (Roudposhti et al., 2018). However, research systematically examining how cognitive features in recommender systems influence trust (the affective aspect) and how trust, in turn, mediates the influence of recommender systems on purchase intention (the behavioural aspect) remains limited. Therefore, an in-depth study based on a systematic literature review (SLR) approach is needed to broaden our understanding of this cognitive-affective-behavioural relationship. Based on the cognitive– affective–behavioral model (Bagozzi, 1986), this study conceptualises that cognitive factors in recommendation systems (such as accuracy, relevance, transparency, and explainability) shape users' rational perceptions, which then give rise to affective responses in the form of trust, which ultimately influence purchase

intentions. Figure 1 is a conceptual framework diagram connecting SLR topics with the Cognitive–Affective–Behavioural (CAB) model components.

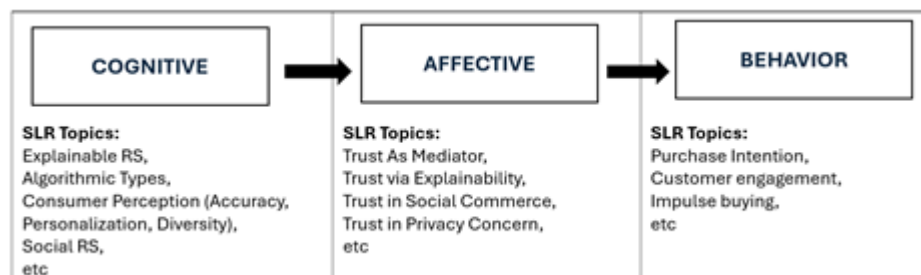


Figure 1. Conceptual Framework SLR to Cognitive-Affective-Behavioural Model

Based on the background, this study has two main objectives. First, to identify cognitive factors of recommender systems that have been studied as antecedents of purchase intention in the context of e-commerce. Second, to explore the extent to which cognitive factors of recommender systems influence trust and mediate the influence of recommendation systems on consumer purchase intention. Therefore, the research questions (RQ) posed in this study are: RQ1: What cognitive factors of recommender systems have been studied as antecedents of purchase intention in e-commerce? RQ2: Do cognitive factors of recommender systems influence trust and mediate the influence of recommender systems on consumer purchase intention?

This study aims to conduct a systematic literature review (SLR) on cognitive factors that influence trust in recommendation systems and their impact on purchase intention in the context of e-commerce. Using the PRISMA method, this research will provide a conceptual map and integrate findings that are able to track the trend of literature progress, describe research gaps, and generate recommendations for future research and strategic practice in digital marketing management

2. RESEARCH METHOD

This research uses a Systematic Literature Review (SLR) approach according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guideline (Ekici, 2021). The SLR approach was used to synthesise and review existing literature sequentially on the cognitive determinants of recommendation systems' trust and their impact on consumer online shopping website purchase intentions. The PRISMA process involved four sequential steps: identification, screening, eligibility, and inclusion. These four processes are carried out in a systematic way to provide a transparent review process. The detailed steps of the article selection process are summarised in Table 1.

Table 1. PRISMA Protocol

PRISMA Protocol Steps	Activity	n
Identification	Scopus	484
	Dimension	180
	Total	664
Screening	Language (exclusion: non-English)	1
	Publication Type (exclusion: proceedings, books, book reviews, retracted)	278
	Duplicated papers	
	Total	4
Eligibility		381
	Title and Abstract Selection	273
	Not Open Access	76
	Total	32
Inclusion	Poor Quality	0
	Not discussing e-commerce platforms	19
	Total	13

At this stage, the search strategy was designed based on the Participants, Intervention, Comparison, and Outcomes (PICO) framework (Gil-saura et al., 2020). The Comparison element was excluded because this review did not involve a direct comparison between recommender systems and non-recommender system scenarios. The search focused on studies addressing cognitive aspects influencing trust and purchase intention within e-commerce environments. Searches were performed in the Scopus and Dimensions databases using Boolean operators ("AND" and "OR"). The defined keywords were organised according to the PICO components as shown in Table 2. Figure 2 shows an example of a search query. From the overall article collection process based on the identification stage, 484 articles were obtained from Scopus and 180 articles from Dimensions.

Table 2. PICO Framework

PICO Aspect	Definition	Keywords
Participants	Consumers using online shopping platforms	"online marketplaces" OR "e-commerce"
Intervention	Cognitive drivers related to recommender systems	"recommender systems" OR "recommendation system"
Outcomes	Trust as an affective mediator leading to purchase intention as a behavioral outcome	"consumer behavior" OR "trust" OR "purchase intention"

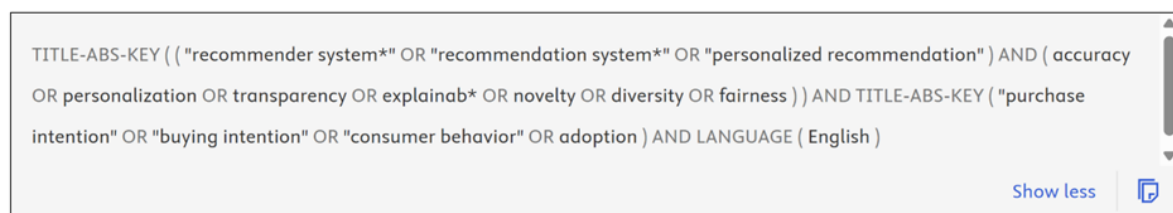


Figure 3. The search query in the Scopus database

During the screening phase, articles retrieved in the identification step were filtered based on three exclusion criteria: (1) language, (2) publication type, and (3) duplication. Only English-language articles were retained to ensure methodological consistency and clarity. One non-English article (Arabic) was excluded. Subsequently, 278 papers were removed for non-journal publications (e.g., proceedings, book chapters, or retracted articles). Four duplicate articles were identified and removed using Microsoft Excel's duplicate-checking function. After these steps, 381 articles proceeded to the eligibility phase.

The eligibility stage aims to select articles based on the title and abstract. Selection is carried out by analysing the article's suitability for the SLR objectives. Analysis criteria include whether the article contains a discussion of cognitive factors that influence recommendation systems on e-commerce platforms. A total of 273 articles were eliminated because they did not focus on recommendation systems on e-commerce platforms, such as articles (Jankovic & Curovic, 2023), and (Zhu et al., 2024), and 76 Articles cannot be accessed. In addition, the selection was also carried out by analysing articles discussing the influence of recommendation systems on Trust and Purchase Intention. There were 32 articles deemed eligible, but they do not discuss the implementation of recommendation systems on e-commerce platforms. Finally, only 13 articles were deemed eligible as the results of the Inclusion stage, for further analysis. Table 3 summarises the articles.

Table 3. Summary of Articles

No	Authors	Method	Key Result
1	(J & Gotmare, 2021)	Structural Equation Modelling (SEM) using AMOS software	The study found that price perception, involvement, product knowledge, and recommendation systems positively impact the price fairness of personalised dynamic pricing (PDP).
2	(Wang et al., 2024)	Experimental methodology	Encountering product information positively influences planned product purchase intention.
3	(Thomas & Jeba, 2024)	Sentiment Analysis (SA) to enhance recommendation accuracy and relevance	Superior accuracy and precision in product recommendations compared to existing methods
4	(S. Huang & Liu, 2025)	Comparative experiments	Integrating affective and behavioural feedback through multitask architectures significantly enhances the accuracy and robustness of personalised recommendation systems
5	(Zareena & Rao, 2024)	Conducts a review of existing methodologies	Importance of developing systems that respect user privacy and offer ethical recommendations, ensuring trust and security
6	(X. Zhang et al., 2023)	Deep learning models	Identified include sentiment analysis, recommendation systems, fake review detection, fraud detection, customer churn prediction, and product classification
7	(Roudposhti et al., 2018)	Quantitative methodology, utilising data collected from questionnaires	The research establishes that satisfaction and trust significantly influence customers' intention to purchase items recommended by recommender systems
8	(X. Huang & Liu, 2022)	Hyperedge corruption to generate user-query and item-feature hypergraphs	The proposed Topic-HGNN framework improves the novelty of recommendation items as well as accuracy in personalised recommendations.
9	(C. Zhang et al., 2025)	Multimodal deep learning framework called DeepFMP.	Models with high-order interactions enhance predictive performance compared to those with low-order interactions
10	(Sulikowski et al., 2021)	Machine learning methods to model the efficiency of recommending interfaces	Neural networks provided the best modelling results for the recommendation-driven purchase phenomenon
11	(Nguyen & Nguyen, 2024)	Survey questionnaire	The study found that Recommendation Quality positively impacts Purchase Intention, with significant relationships identified between Recommendation Transparency, Accuracy, Novelty, and Diversity
12	(Yi, 2020)	Technology Acceptance Model	The hypothesis regarding the relationship between perceived ease of use and perceived usefulness was supported, but did not support the hypothesis regarding the direct impact of perceived interpersonal interaction on RS adoption intention
13	(Gulzar et al., 2025)	Technology Acceptance Model	RS Availability positively and significantly affected the perceived usefulness of recommender systems.

To ensure methodological rigour and reliability in the systematic review, thirteen selected articles underwent a quality assessment process that followed the standards of systematic review studies indexed in Scopus. Because no articles were categorised as poor quality, all 13 articles were used for analysis. The data analysis process uses VoSViewer.

3. RESULTS AND DISCUSSIONS

Co-Occurrence Visualization

The keyword co-occurrence visualisation of 484 Scopus articles shown in Figure 4 demonstrates the evolving thematic structure of research related to recommendation systems and consumer behaviour in e-commerce. With a minimum of eight keyword occurrences, 99 keywords met the threshold and formed six main, interconnected clusters. The first cluster (red) highlights the algorithmic and machine-learning aspects that underpin recommendations. The second (green) and third (blue) clusters illustrate the integration of artificial intelligence with human-computer interaction. The fourth (yellow) cluster showcases the role of data mining and predictive analytics in supporting improved recommendation accuracy. The fifth (purple) cluster focuses on consumer behaviour, personalised recommendations, and electronic commerce, while the sixth (cyan) cluster emphasises the use of natural language processing and text-based analysis to improve recommendation relevance. Overall, the co-occurrence map shows that the literature on recommendation systems in e-commerce has evolved toward an interconnectedness between algorithms, consumer behaviour, AI, and digital marketing.

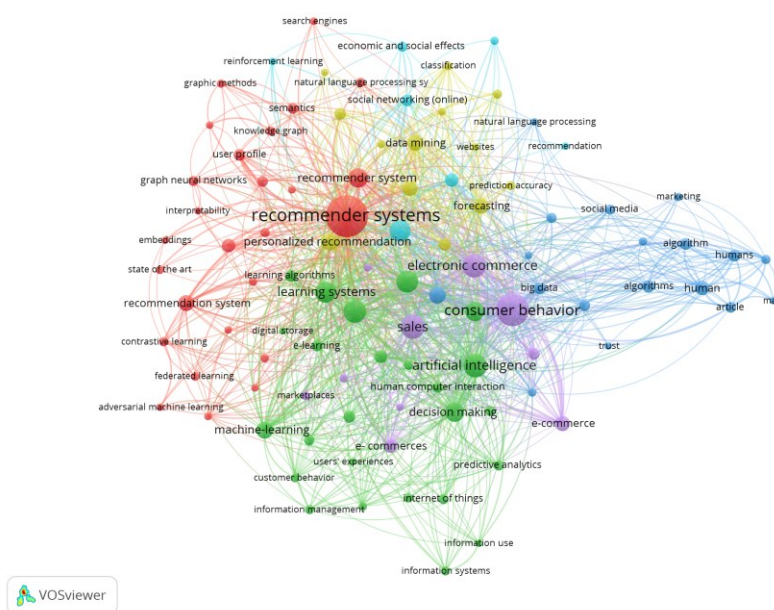


Figure 4. Co-Occurrence Network of Author Keywords

Cognitive factors in systems recommendations (RQ1)

Thirteen articles were generated during the Inclusion phase, but only 11 articles could be analyzed further, as two articles did not specifically examine recommendation systems and purchase intention. Some of the research was algorithmic optimization and technical parameters focused, and others addressed users' psychological and cognitive experience in evaluating the validity of recommendation systems (Zareena & Rao, 2024). Synthesis of the eleven articles examined revealed that the cognitive factors including recommendation

accuracy, predictability precision, and perceived usefulness make a meaningful contribution towards building users' trust in recommendation systems and towards consumer purchasing intention. According to the findings of research by Abitha Kumari and Gotmare (J & Gotmare, 2021), precision and accuracy influence consumer reliability towards recommendation systems, which then influences consumer purchase decisions. Recommendation systems in this study affect Willingness to Pay, which is the proxy for purchase intention. Therefore, high levels of reliability of a recommendation system have been shown to enhance system credibility perceptions by users.

This result is also complemented by a study carried out by Cuong Nguyen and Ninh Nguyen (Nguyen & Nguyen, 2024), namely on the cognitive dimensions Recommendation Transparency, Recommendation Accuracy, Recommendation Novelty, and Recommendation Diversity, as early determinants of Recommendation Quality. All four dimensions had a positive and significant impact on Recommendation Quality, which had a positive effect on Attitude and Trust, and had a direct effect on Purchase Intention. These studies affirm that the precision and accuracy of recommendations can directly influence recommendation quality, which in turn leads to increased user trust and favourable attitudes towards recommendation systems on online shopping websites. This means that the quality of information delivered by a recommendation system serves as a crucial factor linking cognitive perceptions and consumers' affective responses.

Although trust is often recognised as a key element in recommendation-based decision making, most studies do not explicitly position it as a formal mediating variable. In the study by Wang et al. (Wang et al., 2024), although the cited literature states that the explainability of recommendation systems can help maintain user trust in the system and reduce distrust, the trust variable was not included in the conceptual model tested in Lu Wang's study. In contrast, this study focuses on the role of explainability as a moderator influencing customer inspiration. It was found that a low-explainability strategy significantly strengthened the positive impact of Encountering Product Information on customer inspiration and planned purchase intention, compared to a high-explainability strategy. In this study, novelty was introduced as a control variable and as an alternative explanation, although it was found to be a non-significant mediator of the impact of EPI on customer decisions.

Huang and Liu's research identified and integrated affective and cognitive factors (in addition to behavioural ones) as core components for improving the accuracy of Purchase Intention prediction (S. Huang & Liu, 2025). This research examines in depth how personalised recommendation systems on e-commerce sites influence customer purchasing decisions, particularly considering privacy and data protection regulations. The study highlights a novel approach that combines user behaviour, sentiment analysis, and feedback learning to generate better recommendations. The research shows that this integrated system can improve accuracy and make recommendations feel more tailored to users' preferences. This approach signals a shift towards more human-centred recommendation systems, where user psychological factors are explicitly considered in algorithm development.

Huang and Liu's study is concentrated on enhancing recommendation accuracy, diversity, and novelty by fusing topics and hypergraph structure (X. Huang & Liu, 2022). Cognitive issues solved include understanding content, semantic features, and user search and product topics. The article describes how a model of hypergraph neural network with fusion of query text topic and product reviews can enhance the recommender system's capability to comprehend consumer intentions and determine their shopping intent. This is a cognitive consideration

since it covers the process of information interpretation and comprehension by users and the system. This is an advancement towards human-oriented recommendation systems, whereby interpretation aspects on the part of users are to be considered when designing algorithms.

Mediating Role of Trust in Recommender Systems (RQ2)

Numerous studies also provide robust empirical evidence of a positive relationship between trust and the intention to purchase. Roudposhti et al. demonstrated that trust has a significant effect on purchase intention, although certain cognitive aspects, like familiarity, did not significantly impact the formation of trust (Roudposhti et al., 2018). The findings of Nguyen and Nguyen reinforce these studies by indicating that trust and attitude serve as mediators that connect the quality of recommendations to purchase intention. (Nguyen & Nguyen, 2024). The findings of these studies indicate that trust functions as a psychological element, namely affective, that connects cognitive factors with actual behavioral actions.

Zhang et al. did not examine trust as a variable in their model, although they stated that attribute-aware recommendation models can improve accuracy and user trust. This study emphasised multimodal factors (images, text, price) and the model's ability to improve recommendation accuracy. This study developed a deep learning-based system that can capture users' real-time purchase intentions to improve the recommendation process. Deep learning systems that successfully predict attributes such as product size and fit are reported to increase customer satisfaction and reduce returns. Deep learning models that target higher accuracy can implicitly increase trust in the system. (X. Zhang et al., 2023).

Huang and Liu state that a reasonable explanation of recommendation results is necessary to increase consumer trust in recommendation systems. The concept of trust is mentioned as an essential managerial and ethical objective, but it is not modelled or tested as an empirical mediating variable. Neither the conceptual model nor the empirical results presented in the article include trust as a mediator between cognitive factors (such as topic preference or interpretation) and purchase intention. This approach signals a shift towards more human-centred recommendation systems, where user interpretation factors are explicitly considered in algorithm development. (S. Huang & Liu, 2025).

Research findings indicate that improving the quality, accuracy, and transparency of recommendation systems significantly impacts user trust and increases purchase intention. E-commerce platforms are advised to implement trust-based strategies that balance personalisation, privacy, and algorithmic explanations to maintain long-term customer loyalty. (Roudposhti et al., 2018), (Sulikowski et al., 2021).

Nonetheless, the current literature still reveals shortcomings in incorporating trust as a clear mediator between the cognitive elements that influence recommendation systems and the intention to purchase. Conversely, studies that neglected to model trust explicitly—such as Zhang et al. (2023) and Thomas and Jeba (2024)—provide evidence of the theoretical gap: although technical improvements enhance accuracy and personalisation, the absence of psychological modelling limits understanding of why users convert intention into action (Thomas & Jeba, 2024), Zareena and Rao (Zareena & Rao, 2024), and Zhang (C. Zhang et al., 2025). Therefore, this gap opens opportunities for further research to integrate trust into a more comprehensive conceptual framework to examine its role in shaping actual consumer behaviour in the form of purchase intentions.

Despite providing comprehensive insights, the studies in this article have several limitations. First, the review looked only at English-language journal articles that have been peer-reviewed and are included in Scopus and Dimensions, thus limiting the potential inclusion of relevant studies published in other databases or languages. Second, although this study used a rigorous PRISMA based protocol, the diverse methodological designs among the selected studies created variation that limits the generalizability of the findings. Third, many articles reviewed in this study emphasised quantitative methods, thus limiting the exploration of qualitative or mixed methods approaches that could provide insights into users' cognitive processes and trust formation.

4. CONCLUSIONS AND SUGGESTIONS

This research systematically investigates the cognitive factors that affect recommendation system performance and customer trust, acting as a mediator of the effect of recommendation systems on consumer purchase intention. Guided by a Systematic Literature Review using the PRISMA protocol, thirteen articles were sequentially analysed to identify key cognitive factors of recommendation systems, trust, and their implications on purchase intention behaviour. This analysis addresses the following research questions: 1) The cognitive characteristics of recommendation systems, which include accuracy, precision, transparency, novelty, and explainability, are vital in influencing consumer confidence in these systems. The results indicate that the accuracy and dependability of recommendations significantly improve users' perceived reliability of recommendation systems, resulting in increased trust and intentions to make purchases. Furthermore, transparency and explainability emerge as critical cognitive and ethical components that strengthen consumer trust by reducing uncertainty and promoting accountability of the algorithms that build the system. Studies integrating sentiment and affective dimensions show that personalised, emotionally aligned recommendations further enhance user engagement and loyalty. 2) Trust acts as an essential psychological connection that ties together cognitive perceptions and purchasing intentions, reinforcing its mediating function in the realm of digital decision-making. Nonetheless, the review has also uncovered a significant gap in the research on the psychological processes that contribute to trust. Studies examining the mediating role of trust elements in connecting the cognitive components of recommendation systems to the formation of intentions are still limited.

Although trust is often recognised as a key construct in conceptual discussions, many empirical studies have not explicitly modelled trust as a mediating variable in a causal framework linking cognitive factors to purchase intentions. This lack of explicit mediation analysis highlights a theoretical gap between cognitive antecedents and behavioural outcomes, opening opportunities for future research to establish more integrated, testable causal pathways.

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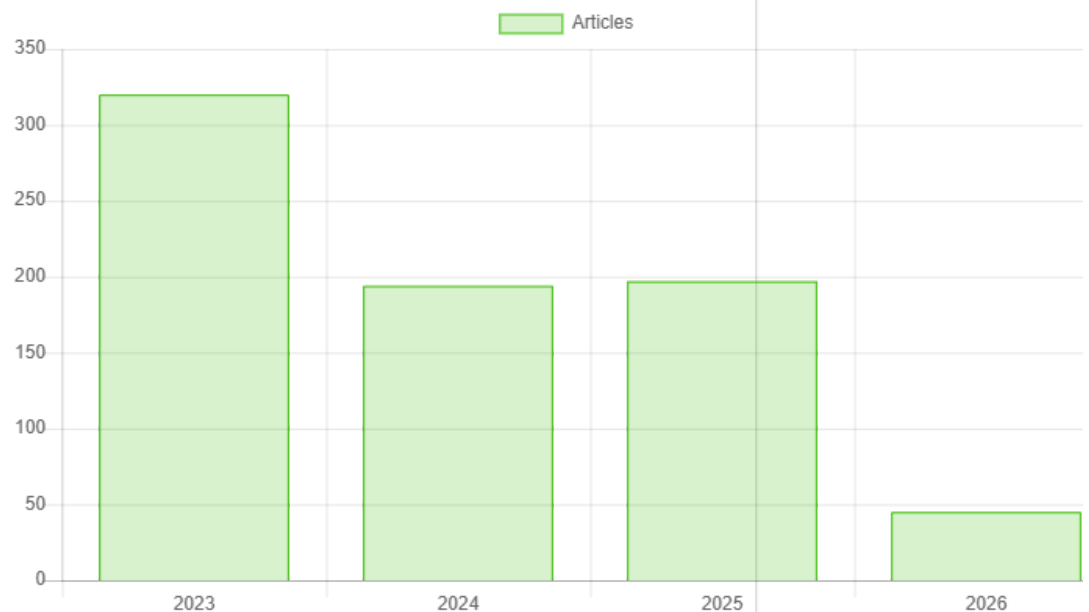
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