

## Conference Paper

# Ecolabeling in Environmental Education: Promoting Eco-friendly Choices Through Education

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**Abstract.**

The degradation of the environment has created a pressing need to promote environmental education. To support environmental improvement and foster a society that prioritizes environmental safety, a study on ecolabel research in environmental education has been initiated in DKI Jakarta. The main objectives of this study are: (1) to identify the indicators of ecolabel and their relationship to environmental education, and (2) to investigate the correlation between ecolabel and environmental education. This research will be conducted using a quantitative descriptive approach. The significance of this study lies in exploring the ecolabel indicators, examining their connection to environmental education, and understanding the relationship between them. The findings from this study will serve as a valuable resource for consumers, enabling them to make informed choices by providing accurate information about a product's environmental aspects. This will empower individuals to opt for environmentally friendly products with a smaller negative impact on the environment throughout their life cycle, contributing to the goal of environmental sustainability.

**Keywords:** ecolabel, environmental education

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## 1. Introduction

Globalization and modernization have sparked new perspectives that encourage us to adopt objective and logical thinking, challenging prevailing notions from economic, socio-cultural, environmental, political, and security perspectives. The deteriorating state of the environment compels individuals to actively engage in promoting environmental consciousness through the green consumer movement, thus stimulating the broader community to embrace the production of eco-friendly products.

The community relies on a diverse range of products to fulfill their sustainability needs. The increasing demand for these products, both in terms of quality and

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excellence, directly and indirectly contributes to environmental sustainability. To mitigate environmental damage, various approaches are employed. These efforts not only focus on technical solutions but also place emphasis on education, information, and persuasion. One such method is the use of ecolabeling in sustainable development, enabling individuals to easily identify environmentally friendly products that have minimal impact on nature. This includes ensuring sustainable sourcing of raw materials and minimizing environmental waste during production processes. Ecolabeling extends to products commonly consumed worldwide, particularly in the industrial sector, to promote economic sustainability alongside social and environmental considerations. As a proactive and voluntary environmental management tool, ecolabeling serves as an effective means to protect the environment, address community interests, and enhance production efficiency and competitiveness. Furthermore, ecolabeling fosters collaboration in regulating negative environmental impacts and facilitates the availability and demand for environmentally friendly products and services.

As consumers, society utilizes a wide array of products. To address environmental damage, different approaches are employed, including educational, informative, and persuasive measures like ecolabeling in environmental education. This aims to ensure that individuals have a clear understanding of the environmentally friendly products they purchase and their minimal impact on nature. Additionally, efforts are made to ensure that the procurement of sustainable raw materials does not generate harmful environmental waste. In order to cultivate a population in Indonesia that possesses the knowledge, awareness, and skills needed to actively participate in preserving and improving the environment, research on ecolabeling in environmental education is being conducted.

As consumers, community members utilize a range of products. Different approaches are employed to address environmental damage, including education, information, and persuasion. For example, the use of ecolabels in environmental education allows the community to accurately identify environmentally friendly products that do not harm nature. This includes promoting sustainable sourcing of raw materials and minimizing environmental waste. The aim is to foster Indonesian individuals who possess the knowledge, awareness, and skills to actively contribute to the preservation and enhancement of the environment. Research on ecolabeling in environmental education is being conducted to achieve this goal.

A study [1] explores the integration of science and environmental education, highlighting the interconnectedness of these two fields. This is followed by research establishing a correlation between green consumers and eco-labeling [2] However, it is

noted that the dissemination of information regarding environmentally-friendly products through ecolabels is currently ineffective. Thus, prioritizing ecolabeling becomes crucial in fostering sustainable development [3] Another study focuses on the eco-labeling of agricultural products as an approach to environmental preservation [4]. The aim is to raise awareness among community members about the detrimental environmental consequences of choosing non-environmentally friendly materials in agricultural production. By socializing ecolabels, efforts can be made to reduce such hazards and encourage environmentally-conscious agricultural practices.

According to another study [5], the fragrance of non-ecolabel detergents is found to be environmentally unfriendly compared to that of ecolabel detergents. While detergent fragrances play a significant role in marketing, they can pose a threat to human health and the environment. This emphasizes the importance of ecolabeling as a means to indicate environmentally friendly products that are safe for both humans and the environment. Additionally, a separate study suggests that consumers' choices of food products are influenced by their perceptions of product quality, credibility, and willingness to pay [6] Consumers tend to prefer products that offer better quality and reliable environmental information, such as ecolabels. Therefore, the provision of environmental information about products holds significant value for consumers, thereby warranting the need for companies to highlight their products as ideal choices for consumers.

The main objective of this study is twofold: 1) to identify the indicators of ecolabels and environmental education, and 2) to examine the connection between ecolabels and environmental education. This research combines the principles of environmental education with the inclusion of ecolabels on environmentally friendly products. The aim is to promote the effective dissemination of various information and understanding to the public, ensuring that it is accurate and not misleading in relation to the environmental aspects of a product. This, in turn, contributes to the sustainability of environmental conservation efforts. Moreover, it is anticipated that community members will become more vigilant and responsible in their decision-making when selecting products, ultimately fostering a community that is environmentally conscious, caring, and accountable.

## 2. Method

The research methodology employed in this study is a quantitative descriptive approach. The sampling technique used is incidental sampling, involving a total of 1740 individuals from the community who are consumers of various industrial products. The inclusion criteria for the participants are having at least a high school education level and being

employed with their own income. The variables examined in this study are environmental education and ecolabeling.

This study aims to combine ecolabels found on environmentally friendly products with the significance of environmental education. This combination will facilitate the accurate and reliable transmission of various information to the public regarding the environmental aspects of products with a short lifecycle. The goal is to enable optimal decision-making in selecting environmentally friendly products and promote sustainable environmental conservation. By considering environmental factors alongside price and quality, individuals will become more conscientious and responsible in their product choices, leading to a greater awareness and concern for the environment.

The research's main objective is to address the significance of ecolabeling in environmental education. It emphasizes the community's involvement in selecting product categories and ecolabel criteria. The application of ecolabels within environmental education serves as an accessible, reliable, and up-to-date medium for transferring information. Its implementation aims to preserve the community's well-being and promote environmentally friendly products, ultimately contributing to the maintenance of a high-quality living environment. This research also serves as a foundational procedure for environmentally friendly education, which can be further developed in other regions of Indonesia to foster an environmentally conscious community. The study focuses on the development of an augmented reality-based ecolabel model in environmental education. By integrating ecolabeling into education, accurate information regarding the environmental impact of products can be effectively conveyed to consumers, thus fostering increased awareness and concern in choosing sustainable and eco-friendly products.

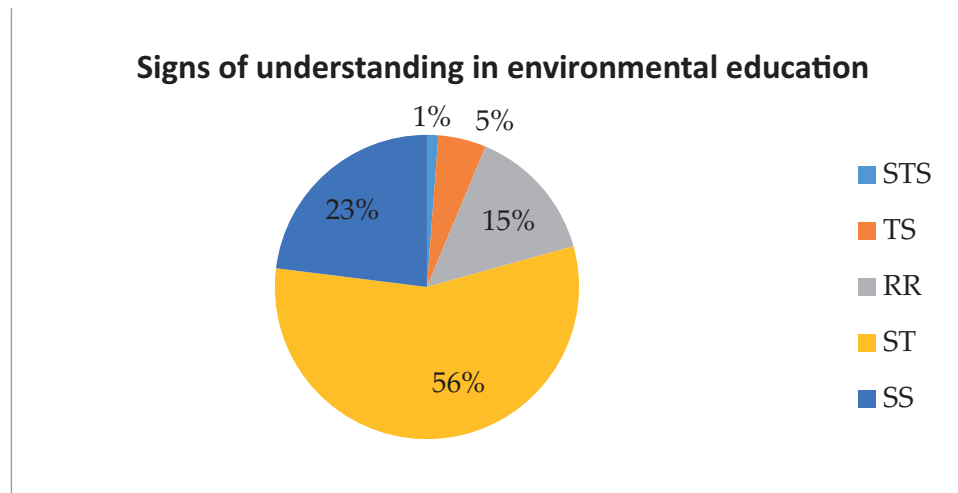
### 3. Results and Discussion

By embracing environmentally friendly labels, it becomes possible to motivate and promote heightened efforts in environmental management. The information conveyed through ecolabels plays a crucial role for prospective buyers, aiding them in selecting products that align with their environmental and other pertinent concerns. Simultaneously, product providers anticipate that the implementation of these environmental labels will influence consumer behavior in favor of their products, influencing their purchasing decisions. Ecolabeling serves as a method to deliver accurate, verifiable, and non-misleading information to consumers, especially regarding the environmental aspects of products, including materials and packaging. Its purpose is to promote

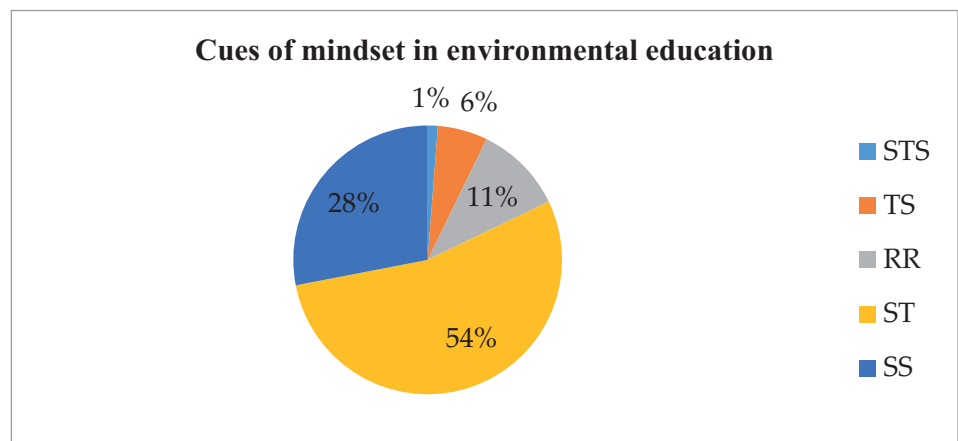
the demand and supply of environmentally friendly products, thus fostering sustainable environmental improvement. From a consumer's perspective, ecolabeling provides information about the environmental impact of a product, enabling the community to actively participate in the selection of product categories and ecolabel criteria. Furthermore, ecolabeling plays a pivotal role in raising consumer awareness and consciousness, guiding their decision-making process to consider environmental impact alongside price and quality. The success of ecolabeling can be measured through environmental quality improvement initiatives implemented throughout the entire production process, involving various stakeholders such as entrepreneurs, importers, distributors, government, and communities. An ecolabeled product signifies that it has a relatively lower environmental impact compared to similar unlabeled products throughout its life cycle, encompassing raw material acquisition, manufacturing, distribution, utilization, disposal, and recycling. These ecolabeled products prioritize the use of legally sourced raw materials, sustainable management practices, adherence to specified environmental thresholds, efficient waste management, and responsible utilization of natural resources. By choosing ecolabeled products, consumers contribute to the preservation of forests as vital sources of raw materials.

According to research, environmental education, including environmental knowledge, attitudes, consumer behavior, and pro-environmental values, plays a vital role in promoting greening efforts [7] Environmental education significantly influences individuals' environmental awareness, lifestyle choices, and daily behaviors. The integration of environmental education into higher education institutions is crucial as it correlates with the level of environmental knowledge and consciousness [8]. Positive attitudes towards nature and the environment are indicators of pro-environmental behavior [8] Attitude serves as a predictor of an individual's behavior and can determine their inclination to act in a certain way. Another study highlights that the demand for imported goods may be influenced by factors such as price and the level of environmental friendliness [9] The competitiveness in the market is not limited to pricing but also extends to the environmental considerations of a product. This trend poses a threat to domestic companies by increasing the volume of imported goods. Furthermore, ecolabeling serves as a green branding strategy that incorporates both implicit and explicit information processing approaches for consumers [10] This communication strategy aims to provide consumers with environmental preservation information and influence their decision-making process when selecting products.

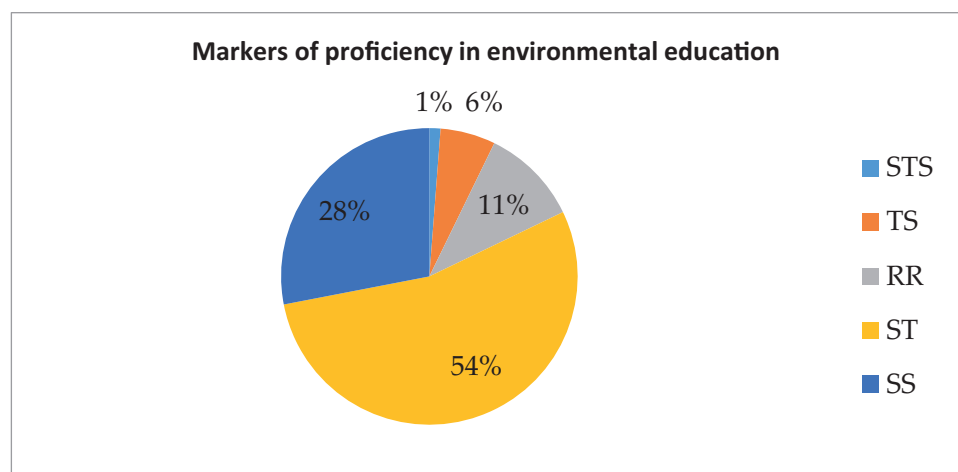
By analyzing the aforementioned table, we can observe that the knowledge indicators in the realm of environmental education achieved a total score of 27,324 (79%), while



**Figure 1:** Signs of understanding in environmental education.



**Figure 2:** Cues of mindset in environmental education.



**Figure 3:** Markers of proficiency in environmental education.

the attitude indicators obtained a total score of 27,800 (83%), and the skills indicators obtained a total score of 28,576 (83%). This indicates that respondents demonstrated

TABLE 1: Signs of environmental education.

Indicator: Environmental Education	STS	TS	RR	S	SS	Score	Total Score	Ideal Score
Knowledge	83	353	995	3895	1594	6920	27324	34600
	1%	5%	14%	56%	23%	100,0%	79%	
Attitude	84	416	736	3744	1940	6920	27800	34600
	1%	6%	11%	54%	28%	100%	33%	
Skills	30	231	615	3981	2063	6920	28576	34600
	0%	3%	9%	58%	30%	100%	83%	
Score Total							83700	103800
Score Percentage							81%	

a positive response towards environmental education, with an overall score of 83,700 or 81% in the “very good” category.

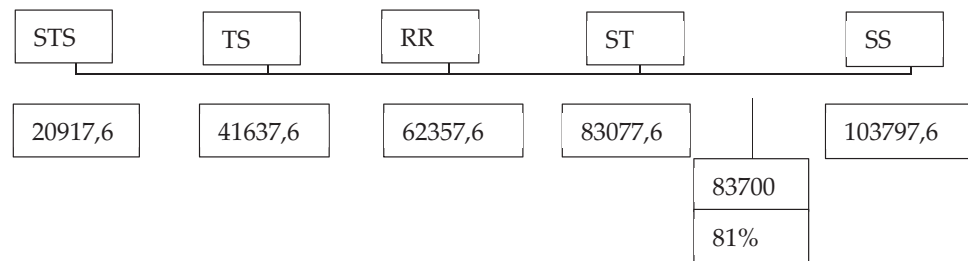


Figure 4: The spectrum of environmental education.

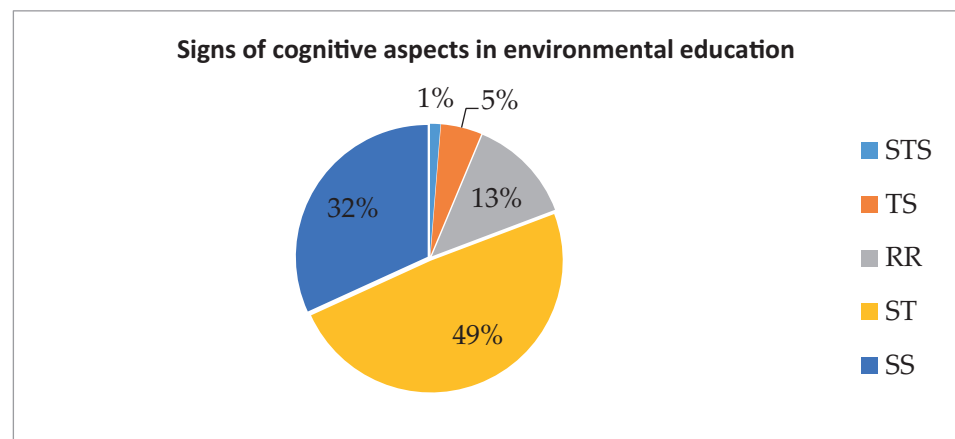


Figure 5: Signs of cognitive aspects in environmental education.

Upon reviewing the provided table, it is evident that the cognitive indicator in the context of ecolabeling received a total score of 56,096 (81%), while the affective indicator achieved a total score of 49,614 (82%), and the conative indicator obtained a total score

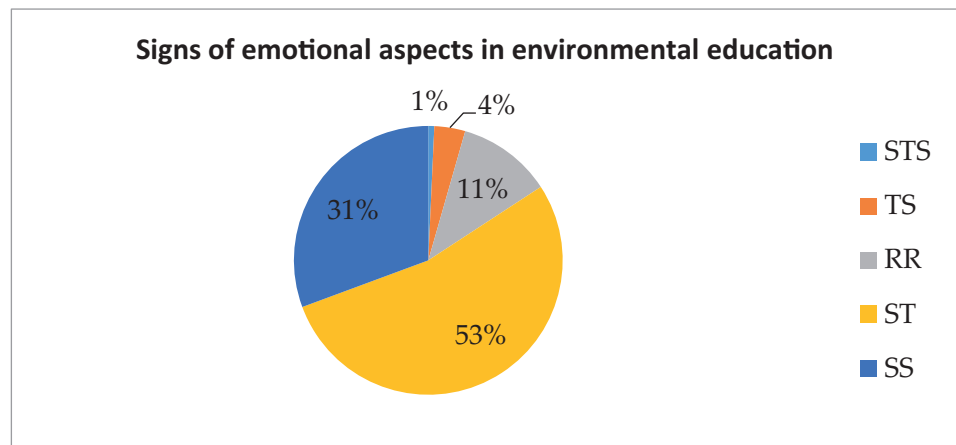


Figure 6: Signs of emotional aspects in environmental education.

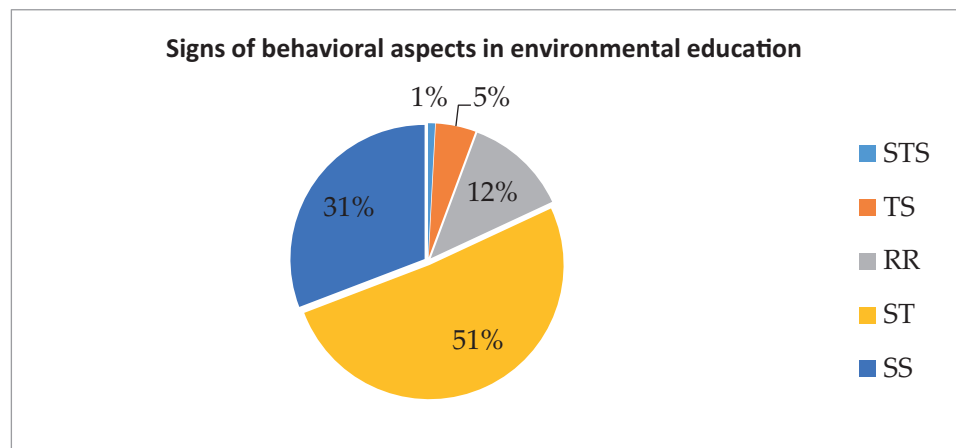


Figure 7: Signs of behavioral aspects in environmental education.

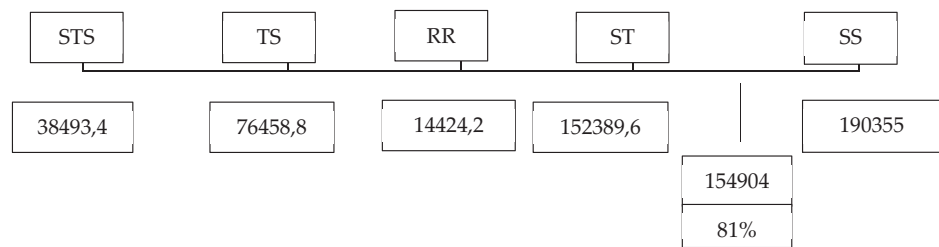
TABLE 2: Signs or criteria used to identify and assess the environmental performance of products or services.

Indicator of Ecolabel						total	Total score	Ideal score
	STS	TS	RR	S	SS			
Cognitive	23	75	276	952	415	13851	56096	69255
	1%	5%	13%	49%	32%	100,0%	81%	
Affective	87	450	1376	6486	3711	12110	49614	60550
	0%	3%	9%	58%	30%	100%	82%	
Conative	103	583	1502	6191	3731	12110	49194	60550
	1%	6%	11%	54%	28%	100%	81%	
Score Total	213	1108	3154	13629	7857	38071	154904	190355
Score Percentage							81%	

of 49,194 (81%). The respondents' responses towards the ecolabel aspect resulted in a



total score of 154,904 or a percentage score of 81%, placing it within the “very good” category.



**Figure 8:** A spectrum or range of indicators used to measure and evaluate the environmental attributes of products or services associated with ecolabeling.

**TABLE 3:** The connection or correlation between the promotion of environmental knowledge and awareness through education and the use of ecolabeling as a tool for consumers to make environmentally conscious choices.

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	21.009	1.161		18.100	.000
	ekolabel	.290	.012	.489	23.298	.000

a. Dependent Variable: VAR00001

Based on the results obtained from the Pearson product-moment correlation test, as indicated by the table above, it is evident that in the Sig. column, the value is 0.000 or probability < 0.05. Consequently, the null hypothesis (Ho) is rejected, indicating a significant relationship between environmental education and ecolabeling. This signifies that the public has the opportunity to actively participate in the implementation of ecolabels by choosing specific product categories and adhering to ecolabel criteria. The application of ecolabeling in environmental education serves as an effective, current, and reliable method of knowledge transfer, contributing to the preservation of life and well-being, particularly in terms of eco-friendly products. Ultimately, this endeavor plays a crucial role in maintaining environmental quality. Integrating ecolabeling into environmental education serves as a valuable source of knowledge, providing the community with accurate, verifiable, and unbiased information. This integration ultimately aims to protect and preserve the environment through the adoption of eco-labeling practices, ensuring sustainability for future generations. By prioritizing environmental preservation in the framework of environmental education, we can safeguard the well-being of local communities. It is essential to enhance community awareness and understanding of product selection, as this process should not solely rely on price and quality but

also take environmental considerations into account. This approach helps prevent the degradation of the environment, thereby securing its overall quality.

## 4. Conclusions

Ecolabeling serves as a reliable method to convey precise information to consumers regarding the environmental characteristics of a product. Ecolabels can take the form of symbols, labels, or statements displayed on product packaging. These labels represent the environmental aspects of a product and play a significant role within the framework of environmental management. The utilization of ecolabeling enables consumers to access valuable information about the environmental impacts of various products, empowering them to make informed choices. By opting for products with smaller environmental footprints, consumers actively contribute to sustainability efforts. The community itself has the opportunity to engage in ecolabel application by participating in the selection of product categories and criteria for ecolabeling. The strong correlation between environmental education and ecolabeling highlights the role of ecolabeling in providing valuable information about a product's environmental aspects, effectively serving as a form of informal environmental education for the community. This practice is implemented to promote environmental preservation and is especially relevant to individuals who are literate and environmentally conscious. By incorporating ecolabeling into environmental education, individuals gain knowledge, understanding, problem-solving abilities, and skills that align with environmental norms and ethics. This education encompasses the environmental aspects of product production, materials used, and packaging employed, ultimately fostering a commitment to environmental sustainability. The integration of ecolabeling in environmental education also contributes to safeguarding the well-being and livelihoods of the community, particularly through the promotion of environmentally friendly products, which in turn helps maintain environmental quality. Furthermore, it enhances the level of awareness and consciousness among consumers, encouraging them to consider environmental impact alongside price and quality when making purchasing decisions. Through this approach, environmentally friendly products gain favor among consumers, while non-environmentally friendly products naturally fade away from the market.

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