

Digitalization Strategy of MSMEs in Indonesia: Systematic Study Using Systematic Literature Review (SLR) Method



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ABSTRACT: This research seeks to determine the digitalization strategies utilized by Indonesian MSMEs and the strongest success drivers among them. Based on a systematic literature review of 12 scientifically accepted and recognized papers that are nationally and internationally acclaimed, five top strategies were identified: the integration of e-commerce, enhancing digital branding, digitalization of internal processes, digital literacy programs, and strategic partnerships. The effectiveness of these strategies is contingent on the state of digital literacy, access to infrastructure, and policy landscape. The findings of this study make a conceptual contribution in developing an adaptive MSME digitalization strategy framework and serve as a guide for formulating evidence-based policies.

KEYWORDS: MSMEs, digitalization, e-commerce, digital literacy, digital branding, systematic review, public policy

I. INTRODUCTION

Digital transformation has been a significant driver for the world's economy, including in the Micro, Small, and Medium Enterprises (MSMEs) sector that has been a significant contributor to the Indonesian economy. Based on the Ministry of Cooperatives and SMEs report (KemenkopUKM, 2023), MSMEs provide approximately 61.07% of the national Gross Domestic Product (GDP) and employ over 97% of the national labor force, making them the backbone of the domestic economy (KemenkopUKM, 2023).

But in the middle of this strategic function of MSMEs, the use of digital technology by MSMEs is still relatively low. According to the e-Conomy SEA 2023 report conducted by Google, Temasek, and Bain & Company, the utilization of digital solutions by Indonesian MSMEs in their operational and sales processes has only reached 27% (Google et al., 2023). This is a low figure that shows an enormous gap between the economic potential of MSMEs and their capacity to optimize digitalization.

This gap occurs because of several underlying reasons, such as low digital literacy (Handayani & Hadiwijaya, 2024), underdeveloped internet infrastructure in rural regions (Chaerunisak & Ayem, 2024), and a lack of managerial strategies adaptive to technological change (Mariani & Prasetyo, 2022). This slows down the internal modernization process and digital-based market development.

Actually, several studies have proven that digitalization can enhance MSME performance substantially. For instance, in Aini & Mufidah's (2025) study of lumpia MSMEs in Central Java, it was reported that the transaction volume increased substantially with the utilization of e-commerce like Tokopedia and Shopee. There is also research by Zed et al. (2024) that demonstrated the application of local content-based branding was able to enhance customer engagement by up to 45% and sales by up to 35% in Cikarang's culinary MSMEs.

Aside from the external determinants, internal capabilities in the use of technology also dictate the success of digitalization. Research by Sari & Widoretno (2024) established that digitalization of business management processes—through the utilization of cloud-based inventory, financial software, and point-of-sale systems—helped significantly with the operational efficiency of leather craft MSMEs. This indicates that digitalization not only impacts market expansion but also the strengthening of internal systems and structures.

Sadly, most intervention programs have not addressed the root causes like the absence of technical support and the absence of needs-based training for MSME actors (Handayani & Hadiwijaya, 2024; Shafa, 2024). Resistance to change and holding onto conventional working cultures remain significant hindrances in rural areas.

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In the literature review, much of the previous studies are descriptive and scattered. None utilize strategic viewpoints in developing a coherent MSME digitalization framework. This research thus adopts the Systematic Literature Review (SLR) procedure, as laid down by Kitchenham (2007), in order to consolidate different scholarly findings in a structural and open manner.

This study is pertinent, given the fact that digitalization is not merely technology adoption but a paradigm changes in work systems, business processes, and the mindset of the business players. Digital transformation in MSMEs is always effective in a bundle of internal drivers (digital competence) and external enablers (infrastructure, regulation, and strategic alliances) (Rizqi & Asmara, 2021).

As such, this research also has a very strong sense of urgency in coming up with more contextual, measurable, and sustainability-oriented MSME digitalization strategy. As an output of this research, it is hoped to contribute significantly to the building of digitalization-based strategic management theory, as well as being the basis in establishing evidence-based intervention policies at the national and local levels.

Due to the absence of robust conceptual structure in the previous research and fragmentation in the pattern of digital strategy being followed by MSMEs, the Systematic Literature Review (SLR) approach is relevant here to provide an extensive, structured, and replicable framework. SLR allows researchers to filter and synthesize findings scattered across various geographic locations and business domains in order to develop a more adaptive and evidence-based digitalization plan.

II. RESEARCH METHOD

Research Approach

This research utilizes the Systematic Literature Review (SLR) methodology as the primary method, adopting the guidelines suggested by Kitchenham (2007) commonly used in evidence-based studies. SLR was employed due to its capability to offer an extensive summary of multiple related studies and enable researchers to determine trends, research gaps, as well as build a systematic conceptual framework from multiple academic literature (Kitchenham, 2007).

In order to enhance replication and transparency, the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) strategy is also employed that assists in recording the process of exclusion and selection of literature in a systematic way (Moher et al., 2009).

Data Collection Sources and Techniques

a. Scientific Databases and Repositories

Literature was collected from various national and internationally accredited scientific databases and journals, including:

1. Garuda Kemdikbud
2. Google Scholar
3. Directory of Open Access Journals (DOAJ)
4. SINTA Portal (Science and Technology Index)
5. Crossref

All articles reviewed came from national journals accredited SINTA 1 and SINTA 2, or reputable international journals (Scopus/WOS), with a publication year coverage of 2018–2025.

b. Inclusion and Exclusion Criteria

Table 1. Article Inclusion and Exclusion Criteria

No.	Inclusion Criteria	Exclusion Criteria
1.	Articles published 2018–2025	Articles before 2018
2.	Fokus pada UMKM dan digitalisasi Focus on MSMEs and digitalization	Not relevant to the digitalization of MSMEs
3.	Peer-reviewed (SINTA 1 & 2 / Scopus/WOS)	Popular / non-peer-reviewed articles
4.	Full text available (Bahasa Indonesia / English)	Not fully available

Systematic Literature Review (SLR) Steps

The following are the systematic stages in the review process based on Kitchenham's (2007) framework and modifications of PRISMA:

Table 2. Systematic Literature Review (SLR) Steps

No.	Step	Deskripsi
	Identification of problems	The main question is formulated: "What digitalization strategies do MSMEs use and what are the determining factors for their success?"
	Literature Search	Search for articles with keywords: "digitalization strategy for MSMEs", "digital transformation", "e-commerce for MSMEs"
	Initial Screening	Screening by checking the title and abstract according to inclusion-exclusion criteria.
	Eligibility Evaluation	Articles are checked for full-text availability and academic validity.
	Data Extraction	Each article was coded based on: author, year, location, type of strategy, findings.
	Thematic Synthesis	Grouping of results into themes: e-commerce, digital branding, process digitalization, digital literacy training, and partnerships
	Analysis & Interpretation	Thematic content analysis was conducted to identify general patterns, research gaps, and formulate strategy models.

Data Analysis Method

Qualitative analysis of data was conducted with the assistance of the Thematic Content Analysis method (Braun & Clarke, 2006). This method was chosen to categorize findings based on salient themes, determine the connection between digitalization strategies and their effectiveness, and develop a conceptual model based on synthesis of literature.

Study Quality and Risk of Bias Evaluation

To ascertain the quality and methodological integrity of the studies that were reviewed, the methodology of each paper was assessed in terms of the basic principles of the CASP appraisal tool. The assessment included clarity of purpose, appropriateness of methodological design, and validity and reliability of data. Additionally, risks of bias were taken into consideration, particularly with respect to selection of data, conflicts of interest, and reporting of results.

Validity and Transparency of the Process

To provide methodological clarity and enable replication, a PRISMA flowchart was the visual documentation of the article search, selection, and screening process. From the initial 147 articles, only 12 articles met all criteria and were selected to be part of the analysis process.

III. RESULTS AND DISCUSSION

Overview of Reviewed Literature

Through a systematic literature review procedure, 12 selected scientific articles that are thematically relevant to MSME digitalization and e-commerce strategy in Indonesia were reviewed in-depth. The articles belong to nationally accredited journals (SINTA 1 and 2) and cover the years of publication from 2018 to 2025. The process of selection was carried out solely based on inclusion and exclusion criteria, and trimmed according to thematic keywords such as "MSME digitalization strategy", "digital transformation", and "local-based e-commerce".

The chosen articles not only provide an empirical snapshot of the sector, but also a strategic agenda in the development of a contextual MSME digitalization framework. The majority of the studies were carried out in areas of Indonesia with varying demographic and geographic conditions, with representative data coverage of Indonesia's heterogeneous reality of MSMEs.

Visualization of Strategy and Literature Selection

The following shows the PRISMA flow of the article selection process:

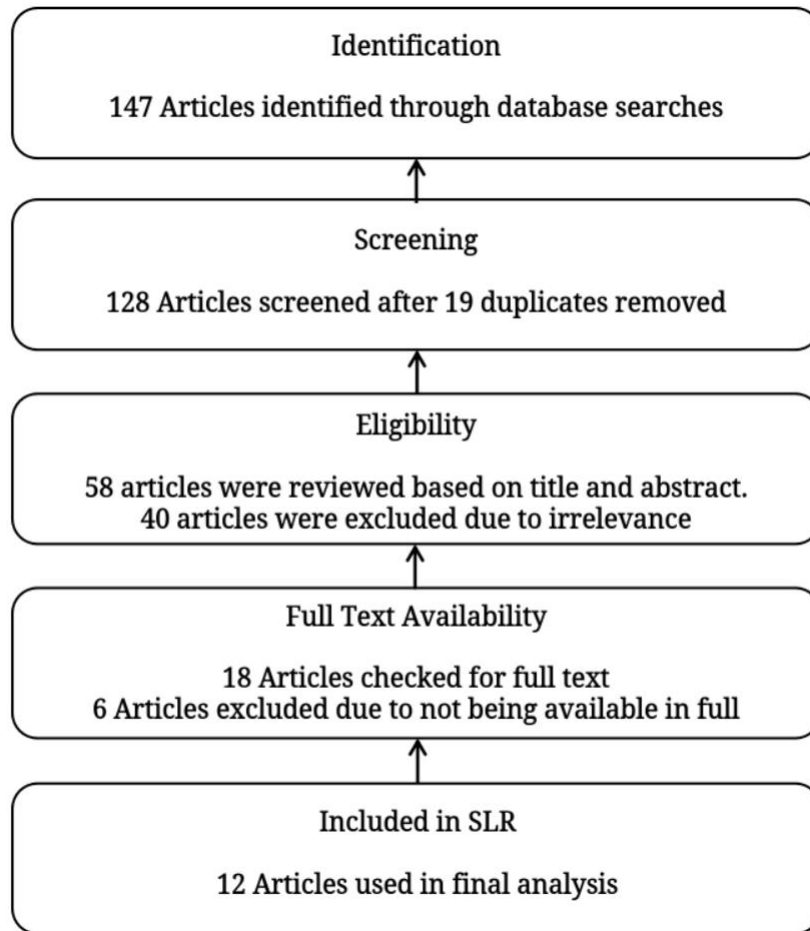


Figure 1. PRISMA Diagram of the Article Selection Process

The following describes the five main dimensions of MSME digitalization strategy:

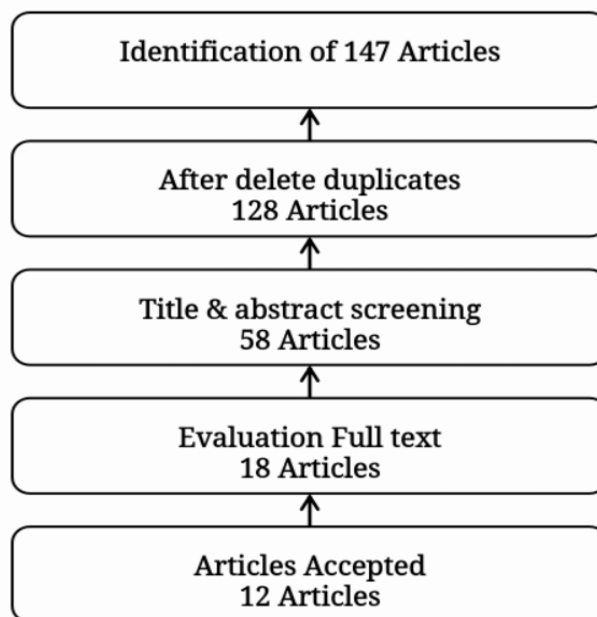


Figure 2. Five main dimensions of MSME digitalization strategy

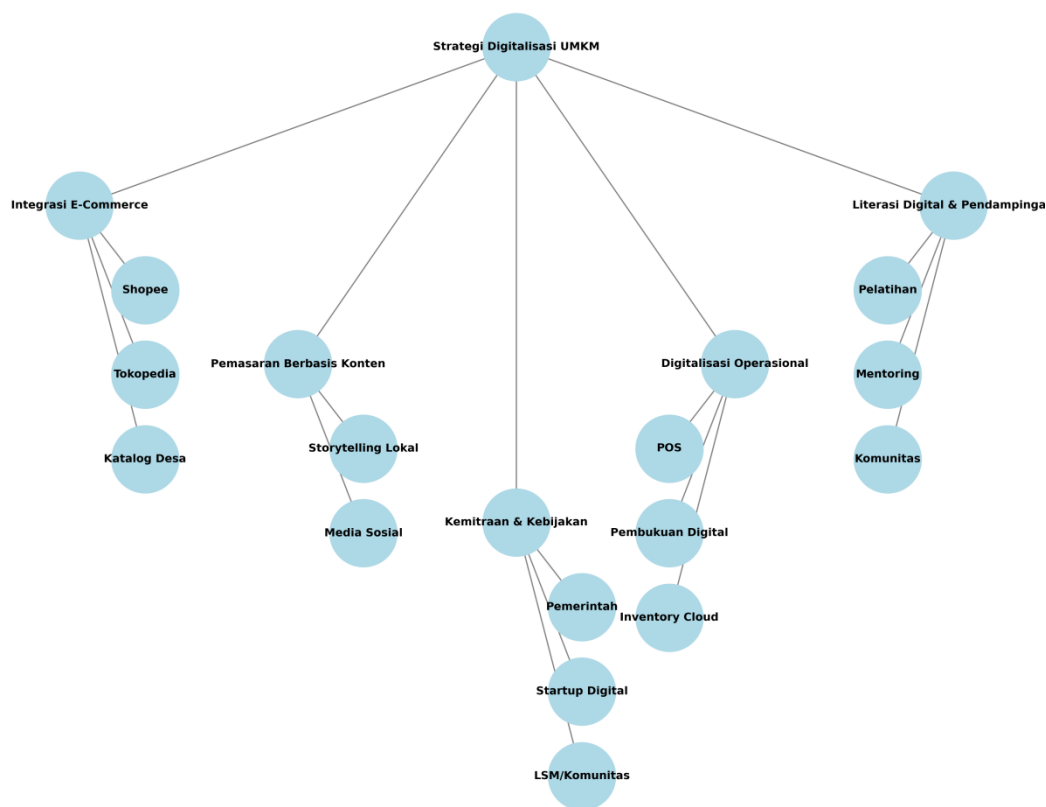


Figure 3. MSME Digitalization Strategy Map

Thematic UMKM Digitalization Strategy

Through thematic content analysis, findings from all literature can be classified into five main themes of digitalization strategies implemented by UMKM, namely:

a. E-Commerce Platform Integration

MSMEs are more empowered using e-commerce platforms as the primary driver in widening market coverage. According to a study conducted by Aini and Mufidah (2025), the utilization of digital platforms like Shopee and Tokopedia has proven to raise the volume of transactions substantially, particularly in the domestic product segment.

b. Branding Strengthening through Digital Marketing

Brand and content marketing strategies are fundamental in developing product uniqueness and loyalty among customers. Zed et al. (2024) found that the use of local value-based stories on social media can boost customer engagement up to 45%, which is a source of competitive advantage for Cikarang food MSMEs.

c. Internal Process Digitalization

Not only does change happen on the sales front, but also on management and operational systems. Computerization of processes like cloud-based inventory systems, utilization of point of sale (POS), and utilization of accounting software are typical practices that have been experimented with to enhance business efficiency as per Sari and Widoretno (2024).

d. Improving Digital Literacy through Mentoring

Handayani and Hadiwijaya (2024) emphasize the strong influence of technical training and continuous mentoring in driving digital adoption among MSMEs, particularly those based in rural areas where digital access is low.

e. Strategic Partnerships and Supporting Policies

Active governmental engagement and multi-stakeholder coordination are determinants of an inclusive digital ecosystem. KemenkopUKM report (2023) highlights the significance of fiscal incentive policies, availability of digital infrastructure, and coordination with tech platforms as determinants of extensive MSME participation.

Determining Factors for the Success of Digitalization Strategy

Based on literature synthesis, the success of implementing digitalization strategies in MSMEs is influenced by a number of crucial factors:

1. Digital Literacy Capability: A high level of digital literacy is directly proportional to the success of technology adoption.

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2. Access to Technology Infrastructure: The existence of a stable internet network and adequate hardware are basic requirements for implementing digitalization.
3. Strategy Contextualization: Digital strategies that are tailored to local culture and market characteristics have proven to be more effective.
4. Managerial Commitment: Visionary and adaptive leadership is a catalyst in changing the mindset of MSME organizations towards digitalization.
5. Supporting Ecosystem: Collaboration between business actors, government, educational institutions, and technology platforms forms a synergy that accelerates digital transformation.

Major Obstacles in Digitalization Implementation

Although the digitalization strategy promises many opportunities, the implementation process is not without obstacles. Some of the main obstacles identified include:

1. Limited access to technology and the internet, especially in remote areas and islands.
2. Lack of technical assistance, which makes most business actors hesitate to switch to a digital system.
3. Low access to capital, especially for initial investment in equipment and training.
4. Resistance to change, which comes from old habits and doubts about the effectiveness of new technology.

Based on a systematic synthesis of all articles, a conceptual model of MSME digitalization strategy can be formulated which is divided into five main elements:

Table 3. MSME Digitalization Strategy Model

No.	Strategic Components	Detailed Description
1.	Digital Platform Integration	Selection of e-commerce and social media that suit target consumers and products
2.	Content Based Marketing	Implementation of storytelling and visual branding based on locality and cultural values
3.	Operational Process Optimization	Digitalization of inventory, financial and customer service management systems
4.	Digital Training and Literacy	Multi-level training program and intensive mentoring
5.	Partnerships and Public Policy	Synergy between MSMEs, government, and digital technology players

This model is adaptive, flexible, and can be customized according to the geographic context and industrial sector of MSMEs.

Conceptual Model Visualization of Strategy

To clarify and convey the integrative structure of the digitalization strategy found, a visual model was created that depicts five strategic elements hierarchically. This model maps the interrelationships between strategies, starting from basic factors such as training and infrastructure to strategic execution such as branding and internal process optimization. This visualization can be used by policy makers and business actors as an application guide.

Scientific Contributions and Practical Implications

This study not only provides a conceptual contribution to the development of digitalization-based strategic management theory, but also presents a practical framework that can be used as a reference by policy makers, MSMEs, and training institutions. By adopting a systematic approach, the results of this study are able to fill the gap between previous descriptive studies and the need for a strong empirical evidence-based synthesis.

Practical implications of this study include:

1. Formulation of sector-based and regional digital transformation incentive policies.
2. Design of contextual digital literacy training curriculum.
3. Guidelines for developing data-based digital business models.

SLR Visualization

To support transparency and replication of the review process, it is recommended to include visualizations such as:

1. PRISMA Diagram: Shows the process of searching, selecting, and filtering literature.
2. Thematic Synthesis Matrix: Presents the main findings of each article in a structured manner.

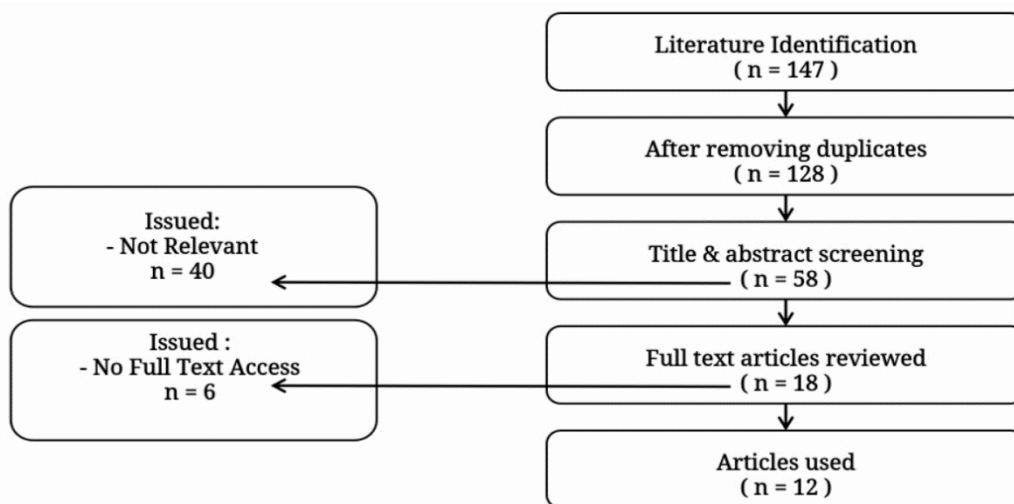


Figure 4. PRISMA Diagram of the Literature Selection Process

Here is a PRISMA Diagram visualization of the Systematic Literature Review (SLR) process in your research. This diagram illustrates the flow of article selection from initial identification to the final articles used for synthesis:

1. 147 articles were initially identified.
2. After removing duplicates, 128 articles remained.
3. Through the title and abstract screening process, 58 articles were considered.
4. 40 articles were excluded because they were not relevant, and 6 articles were excluded because they did not have full-text access.
5. A total of 18 articles were reviewed in full.
6. Finally, 12 articles met the criteria and were used in the analysis.

Table 4. Thematic Synthesis Matrix of MSME Digitalization Studies

No	Author (Year)	SME Context	Digital Strategy	Key Results
1	Zed et al. (2024)	Culinary (Cikarang)	Local branding and digital content	35% increase in sales
2	Aini & Mufidah (2025)	Lumpia (Central Java)	Tokopedia/Shopee E-commerce	Transactions increased significantly
3	Handayani & Hadiwijaya (2024)	Brick Craftsmen (Banyuasin)	Training & mentoring	Barriers to digital literacy
4	Sari & Widoretno (2024)	Leather Craft	Digitalization of management	Work efficiency increases
5	Chaerunisak & Ayem (2024)	Retail MSMEs	Digital financial inclusion	Improving MSME performance
6	Shafa (2024)	UMKM Desa Randu	Konten branding lokal	Peningkatan daya tarik pasar
7	Mariani & Prasetyo (2022)	E-Commerce MSMEs	Complete digital transformation	E-commerce adoption increases
8	Zizah & Lubis (2021)	MSMEs during the pandemic	Digital marketing strategy	Effective content strategy
9	Rizqi & Asmara (2021)	National study	The role of e-commerce in performance	E-commerce positive for sales
10	Pramudito & Wibowo (2020)	Innovation Based MSMEs	Digital product innovation	Innovation increases competitiveness
11	Google et al. (2022)	Southeast Asia	Digital growth trends	Accelerated digitalization
12	KemenkopUKM (2023)	National MSMEs	Ecosystem policies and support	Government intervention is important

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The following is a Thematic Synthesis Matrix that summarizes the articles reviewed in the SLR study. The table displays the MSME context, the digitalization strategies used, and the main results of each study.

IV. CONCLUSIONS

This study identifies five main strategies in the process of digitalizing MSMEs in Indonesia, namely: (1) integration of e-commerce platforms, (2) strengthening branding based on digital content, (3) digitalization of internal managerial processes, (4) increasing digital literacy through training, and (5) strengthening strategic partnerships and public policy support. The determining factors for the success of these strategies include the digital capabilities of business actors, access to technological infrastructure, contextualization of strategy, adaptive leadership, and the existence of a supporting ecosystem.

Through the Systematic Literature Review (SLR) approach, this study contributes conceptually to the development of an evidence-based MSME digitalization strategy model that is adaptive to local dynamics. However, as explained in the previous section, the results of this synthesis have limitations in the context of generalization and the variety of studies reviewed. Therefore, this study is not only an initial foundation in the preparation of MSME digital transformation policies, but also a trigger for further research that is more in-depth, comparative, and sectoral in order to strengthen the validity of the proposed strategy model.

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