

Research Article

Potential Sector Mapping for MSMEs in Magelang City Related to Insurtech Needs

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Abstract.

Technological developments in Indonesia continue to increase. This is followed by an increase in the level of insurance literacy. Digital-based insurance or InsurTech is the use of insurance products offered online. It is expected that the development of MSMEs in Magelang City will have the convenience of buying insurance products as an asset safeguarding investment in the event of an unexpected accident. The purpose of this study is to identify the potential of the MSMEs sector, identify related legal InsurTech services that can be accessed by MSMEs, and provide an important overview of InsurTech for safeguarding assets as a supporter of MSMEs sustainability in Magelang City. The study was carried out descriptively and supported by secondary data in the form of the number of MSMEs, MSMEs workers, and turnover. Data analysis was done using the Location Quotient method. The findings of the study show that the City of Magelang consists of four MSMEs sectors, namely, services, trade, agriculture, and production/non-agriculture. The study is divided into three regions with different base sectors. The northern region of the base sector included services, agriculture, and production/non-agriculture. Services and trade are the basic sectors in the central region, while the southern region has trade and production/non-agricultural base sectors. The results of the InsurTech mapping study show that there are four insurance services registered with the OJK including Qoala, Yuk Takaful, Cermati, and Pasar Polis. MSMEs sustainability can occur after the mapping of potential MSMEs and InsurTech sectors has been identified.

Keywords: insurtech, MSMEs, location quotient, labor, turnover

1. Introduction

The current development has presented technological advances. Activities that were initially carried out conventionally now can be run digitally. Manufacturing technology has referred to the impulsive trend, cyber-physic data switching, Internet of Things (IoT), cloud computing, and cognitive computing in the revolutionary era of 4.0. It is considered, this revolution potentially can cause a decline in the human role. Therefore, Japan has created a new design, namely Society 5.0. It is expected, the existence of this design makes artificial intelligence divert big data, collected from the internet in all areas of life forms, to formulate a new policy, to increase human capabilities toward various opportunities for humans[1].

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Currently, technological advances are indivisible to society. In social life, various information originating from various parts of the world can be easily announced with the presence of technology. As a result of technological advances, major shifts have occurred in people's lives, including changes in civilization and culture. Specifically, people with distinguished cultures and traditional customs like Indonesia. Today, cultural values in both urban and rural communities have been modernized. Technological advances such as mobile phones and the internet are well-accepted by both urban and rural communities[2].

According to the Association of Indonesian Internet Service Providers (APJII) (2023) in the 2022-2023 period, the users hit 215.63 million people. In the previous year, there were 210.03 million internet users, exhibiting an increase of 2.67 percent. It indicates ease of interaction between people, including in the implementation of digital insurance, which is currently developing and aligned with technological advances. Digital insurance or the so-called InsurTech is the implementation of all insurance instruments carried out voluntarily online using Internet media. Insurance service users will be given the convenience wherever and whenever to obtain the various insurance products offered.

The expansion of conventional insurance into digital insurance has been regulated by the Financial Services Authority (OJK), which is the OJK Regulation No. 28 of 2022 concerning Amendments to Financial Services Authority Regulation No. 70/PJOK.05/2016 concerning Business Conduct of Insurance Broker Companies, and Insurance Loss Appraisal Companies. The nature of the rule is to regulate digital insurance services that include the scope of insurance brokerage services, consumer protection, and the cooperation of insurance brokerage companies with third parties. These regulations provide innovation to Insurance Technology (InsurTech). So consumers can compare which insurance company is preferred and tolerated under secured assurance as well as valid and consistent digital services to uphold their insurance activities.

The Indonesian insurance industry shows post-Covid-19 pandemic positive growth. According to the Financial Services Authority[3], the penetration rate of insurance in Indonesia in 2021 was calculated as 3.18 percent, insurance penetration included social insurance at 1.45 percent, life insurance at 1.19 percent, general insurance at 0.47 percent, and the remaining percentage was allocated for compulsory insurance. Yet, it still needs to be optimized since the improvement was only 3.48 percent from 2019 of 13.15 percent to 16.63 percent in 2022. On the other hand, the insurance literacy rate from 2019 was 19.40 percent, increasing to 31.72 percent by 2022. This condition is a reciprocal state of the efforts of all founders of the insurance industry who adopt and maximize the use of technology, in this case, Insurance Technology (InsurTech).

The growth in consumer literacy level on online services is relatively high, so there is potency for InsurTech industry optimization is widely open. The challenges are less efficient insurance processes and systems, as well as limited data analysis. InsurTech's presence and innovation are expected to be able to overcome challenges quickly and consider opportunities.

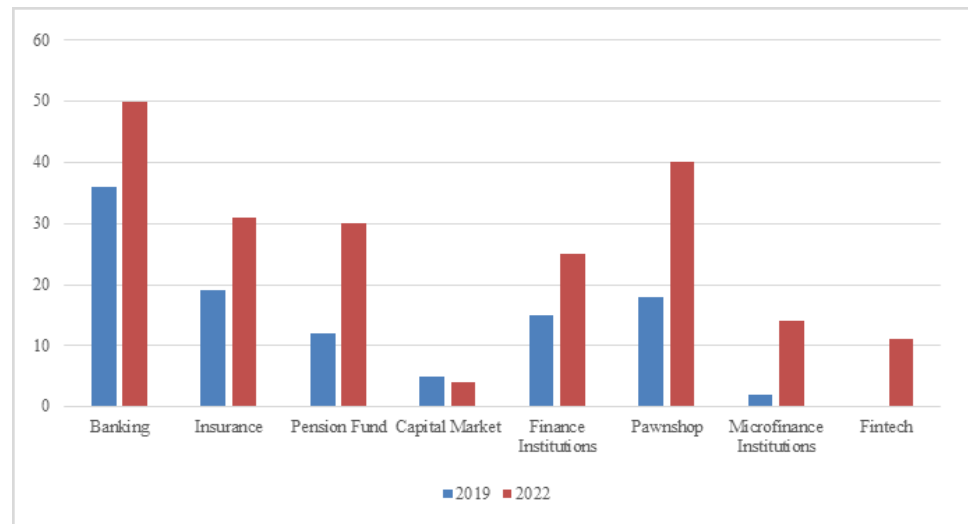


Figure 1: Level of Financial Literacy Based on the Financial Services Sector 2019-2022. Source: OJK in 2022.

Figure 1 delivers data from the Financial Services Authority [3] stating that Indonesian people's literacy in the financial services insurance sector from 2019 was 19.40 percent, increasing to 31.72 percent in 2022.

People in Central Java Province have a financial literacy level of 49,68 percent [3]. The percentage level of financial literacy in the community provides wide-open opportunities in the city of Magelang to include digital insurance innovations or so-called InsurTech to business people. Seeing the potential of Magelang City as an area that includes tourist attractions visited by both local and foreign tourists provides opportunities to develop Micro, Small, and Medium Enterprises (MSMEs). The growth and development of MSMEs accompanied by digital insurance services is envisioned to make it easier for business actors to buy insurance products as a form of investment for the business being carried out to anticipate unexpected casualties in the future.

As stated by the data originating from Statistics Indonesia (BPS) for the City of Magelang (2023) that the population in Central Magelang District will reach 37,247 thousand people in 2022. It includes residents of productive age. The existence of a productive age population contributes to increasing the productivity of an area. One of the contributors to the value of GRDP is MSMEs in Central Magelang District [4]. According to Aminy [5], MSMEs are the existence of community life that has a sizeable

contribution to the economy. According to datago.kotamagelang, there are 742 business actors in Central Magelang District. Out of six urban villages in Central Magelang District, the highest number of MSME business actors is occupied by North Rejowinangun with a total of 220 SMEs.

Multiple challenges in efforts to empower MSMEs include unclear linkages to business opportunities and the unoptimized concept and vision and mission. It arises because MSMEs are considered income-gathering with the following characteristics: the business is family-owned, uses simple technology, lacks access to capital, and there is no separation of capital between business and private [6].

For solutions to problems, especially in capital and business capital assets with personal capital to secure assets, it is necessary to connect with insurance services. Microinsurance plays an important role in improving the economy of low-income communities and microinsurance has a function as a rescuer from poverty and decisions when natural disasters occur. Even MSME activities in agriculture are included in the scope of the microinsurance market which will protect farmers when their crops fail due to an uncertain climate[7]. The difficulties fronted by MSMEs in order to continue to grow and ensure business continuity, such as obtaining access to finance in the insurance sector. The development of insurance with inclusive financial innovation designed by the Bank of Indonesia and the Financial Services Authority is the solution.

The financial inclusion form in the insurance services sector is insurance technology (InsurTech), in which all insurance activities starting from the offering process to buying insurance products are carried out digitally and protected by OJK. So, MSMEs will find it easier to obtain information, and confidence in protected business assets, and can create MSMEs that are more productive in supporting the economy. The purpose of the study is to identify the MSMEs' potencies in Magelang City, identify related legal services InsurTech to be accessible by MSMEs in Magelang City, and provide an outline of the important roles of InsurTech for maintaining assets as support for sustaining the establishment of the MSMEs in Magelang City.

2. Theory, Literature Review, and Hypothesis

Economic basis theory reveals that economic growth variables in certain areas are related to goods and services required from outside the region [8]. It distinguishes the components of the base from non-base activities. Activities in the base sector are the

growth of a sector that gives an effect on the whole region's development, while non-base activities are the second sector that still depends on the whole development of expansion.

In basis theory, calculations in this theory are used to determine potential sectors in an area. Potential sector development has a significant influence on improving the economy of a region, which has an optimal impact on expanding regional income. Based on this theory, regions have mainstay and non-reliable areas which are modified into potential economic sectors or sub-sectors.

Regional economic growth is inseparable from the role of MSMEs. According to Sarfiah et al. [9]. MSMEs in the national economy play an important and strategic role. MSMEs convey different definitions in each literature according to several agencies or institutions and even laws. Following Law number 20 of 2008 concerning MSMEs, MSMEs are defined as micro-enterprises that are owned by individuals or entities with certain criteria, small businesses are explained as businesses that stand alone with individual/entity ownership that meet the criteria small business, while medium business is translated as a productive business by individuals or business entities with a total net worth or annual sales proceeds in accordance with the law.

Based on wealth and benefits from sales, according to Law No. 20 of 2008 Article 6, the criteria for micro-enterprises is a net worth of 50 million excluding land and buildings for business premises or annual sales of no more than 300 million. The small business covers a net worth of more than 50 million to 500 million or annual sales of more than 300 million to 2.5 billion. While the criteria for medium-sized businesses are: having a net worth of more than 500 million to 10 billion or having annual sales of more than 2.5 billion to 50 billion.

Meanwhile, in the digital economy, the concept of the digital economy was first introduced by Don Tapscott in his book *The digital economy: Promise and Peril in the Age of Networked Intelligence*. He stated that the digital economy is also called the new economy, with the characteristics of using the digital economy exclusively and not referring to just one ICT [4]. In terms of digitalization, it shifts global economic behavior. Technological changes have an impact on economic activities starting from the process of production, distribution, and consumption. People's behavior is shifting from the traditional to the digital era where in the process of transaction activities, it is unnecessary for the sellers to meet the buyers. In this era, people can buy products from home through software [10]. According to Permana & Puspitaningsih [11], the digital economy continues to grow rapidly in Indonesia and Indonesia has the potential to become the largest market share in Southeast Asia. One indication of the existence of

a digital economy is InsurTech. Then, by definition, it can be specified that Insurance Technology (InsurTech) is an insurance product whose services are offered online with technological advances. InsurTech basically transforms the financial industry, such as insurance, through innovation in the realm of digital technology. The organizer of “InsurTech” consists of financial service institutions in the form of legal entities such as Limited Company (PT) or cooperatives. OJK issues OJK regulations regarding digital financial innovation in the financial services sector as a legal umbrella and supervision and regulation of the digital financial industry.

3. Research Methods

This study employs secondary data obtained from the Department of Industry and Trade of Magelang City. Descriptive research is entitled to this study, a research conducted to consider variables, whether single or more variables, without making comparisons to increase one variable with another variable. This type of research uses a quantitative approach. A quantitative approach is a type of research that provides a general description of the subject being researched in data or numbers which are then processed by the Location Quotient method then analyzed. The variables to be studied are MSMEs, labor, and turnover.

Analysis of Location Quotient (LQ) is an approach to analyzing the relative concentration of industry/economic sector compared to the level of national concentration. This method is used in identifying the empirical basis studies. Economic activity is the basis of having a competitive advantage for development in driving the process of regional development. Meanwhile, the non-base sector has a role as a support for the base sector [12]. If LQ is greater than 1, it indicates that the sector has a comparative advantage in the area studied compared to the national level or regional comparison. If LQ is equal to 1, it indicates that the sector has the same proportion in the area studied and at the national level or region of comparison. If LQ is less than 1, it indicates that the sector is less developed in the area studied compared to the national level or regional comparison.

Analysis of Location Quotient can provide useful information for regional economic development planning, policy development, and identification of potential leading sectors. The formula for calculating LQ is as follows:

$$LQ = \frac{\frac{E_{ir}}{E_r}}{\frac{E_{in}}{E_n}}$$

where: E_n is the total sector i in regional reference n , E_{ir} is subsector i in regional basis r , E_r is the total sector in regional basis r , and E_{in} is the subsector in regional reference n .

4. Results and Discussion

The data acquired are then processed using Location Quotient analysis with the following calculation results that table 1 shows the results of data processing on the number of MSMEs, MSME labour, and MSME turnover per sector in 2022 in Magelang City. There are 8,447 units of MSMEs in Magelang City. The MSMEs are classified into four sectors including the service sector, the trade sector, the agricultural sector, and the non-agricultural production sector.

Magelang City is divided into three sub-districts, namely, North Magelang District, Central Magelang District, and South Magelang District. Based on the number of MSMEs in North Magelang District, the service, agricultural, and non-agricultural production sectors are categorized as the basis sectors. Then, the basic sector in Central Magelang District is the service sector. Later, based on the number of MSMEs, in the South Magelang District, the trade sector is considered the base sector.

Analysis of the base and non-base sectors is not only noticed from the number of MSMEs but also seen based on the workforce and turnover of Magelang City MSMEs. In North Magelang District, in terms of the workforce, the sector is based on service, agriculture, and non-agricultural production. For turnover, the base sectors are stated in the trade, agricultural, and non-agricultural production sectors. In Central Magelang District, the workforce is based on the service and trade sectors, while the turnover value is based on the trade, agriculture, and non-agricultural production sectors. South Magelang District, based on the number of workers, the base sector is the trade and non-agricultural production sectors, while the turnover value is in the trade, agricultural, and non-agricultural production sectors.

5. Service in Insurance Technology

Digital insurance or Insurance Technology is a form of risk transfer for MSME actors. MSME protection can be initiated by selecting insurance products according to MSME needs. One of the main functions of insurance is the protection of business assets. Not only protecting assets but providing protection for employees [13]. According to Samosir [14] the importance of insurance for MSMEs, namely: risk protection, a strong business

TABLE 1: Value of Location Quotient (LQ) MSMEs in Magelang City in 2022.

NORTH MAGELANG DISTRICT									
BUSINESS SECTOR	TOTAL SUB-DISTRICT SMEs	TOTAL CITY MSMEs	LQ	SUB-DISTRICT LABOR	MUNICIPAL LABOR	LQ	TURNOVER/ MONTH OF DISTRICT	TURNOVER/ MONTH OF CITY	LQ
Service	409	1498	1.09096	629	2137	1.08614	3729071500	31567215500	0.54838
trade	1096	4832	0.90632	1517	6176	0.90639	7920646000	33612683500	1.09389
Agriculture	39	87	1.79119	47	106	1.63618	85625000	241505000	1.64585
Non-Agricultural Production	570	2030	1.12196	1092	3703	1.0882	7167301450	22327018950	1.49019
TOTAL	2114	8447	1	3285	12122	1	18902643950	87748422950	1
CENTRAL MAGELANG DISTRICT									
BUSINESS SECTOR	TOTAL SUB-DISTRICT SMEs	TOTAL CITY MSMEs	LQ	SUB-DISTRICT LABOR	MUNICIPAL LABOR	LQ	TURNOVER/ MONTH OF DISTRICT	TURNOVER/ MONTH OF CITY	LQ
Service	609	1498	1.07247	845	2137	1.09484	2498898000	31567215500	0.36757
trade	1827	4832	0.99745	2316	6176	1.03832	10735987000	33612683500	1.48307
Agriculture	24	87	0.72773	31	106	0.80976	73740000	241505000	1.41775
Non-Agricultural Production	742	2030	0.96425	1186	3703	0.88681	5589443500	22327018950	1.16241
TOTAL	3202	8447	1	4378	12122	1	18898068500	87748422950	1
SOUTH MAGELANG DISTRICT									
BUSINESS SECTOR	TOTAL SUB-DISTRICT SMEs	TOTAL CITY MSMEs	LQ	SUB-DISTRICT LABOR	MUNICIPAL LABOR	LQ	TURNOVER/ MONTH OF DISTRICT	TURNOVER/ MONTH OF CITY	LQ
Service	480	1498	0.86447	663	2137	0.84342	2849164000	31567215500	0.28844
trade	1909	4832	1.06586	2343	6176	1.03134	14956050500	33612683500	1.42197
Agriculture	24	87	0.74424	28	106	0.71811	82140000	241505000	1.08694
Non-Agricultural Production	718	2030	0.95422	1425	3703	1.04616	9570274000	22327018950	1.36984
TOTAL	3131	8447	1	4459	12122	1	27457628500	87748422950	1

Source: Disperindag of Magelang City in 2022 - processed

foundation, stability in doing business, compensating for losses, and facilitating financial management. There are two service Insurance

Technology companies registered under the Financial Services Authority (OJK). However, there are also services on Insurance Technology organized by companies with an aggregator business model. Aggregator business model is a term regarding a business system that acts as a collector where this business process is carried out to support other parties or businesses that use its services.

Insurance Technology Company undoubtedly offers a variety of insurance service products ranging from individual insurance to business insurance. Business insurance

TABLE 2: List of Licensed Insurance Technology Company.

No	Name Platform	of	Company name	No. Decree Letter	Business Model
1	Qoala		PT Anchor Teknologi Digital	S-132/MS.72/2020	InsurTech
2	Yuk Takaful		PT URUN DANA TAKAFUL	S-323/MS.72/2019	InsurTech
3	Cermati		PT Dwi Cermati Indonesia	S-85/MS.72/2019	Aggregator
4	Pasar Polis		PT Pasar Polis Indonesia	S-67/MS.72/2021	Insurance Hub

Source: Service Authority & Company's Official Website

can transfer some of the risks, which means that MSME businesses will get protection and insurance protection so as to provide comfort, peace, and security in running their business. Based on the company data of Insurance Technology above, Qoala company offers individual insurance service products. YukTakaful company also offers individual insurance, under the Sharia system.

Individual insurance refers to health insurance, life insurance, vehicle insurance, to travel insurance. Furthermore, Cermati company, although in its implementation uses an aggregator business model, the company also offers insurance products for both individuals and businesses. Their business insurance products include business risk mitigation that provides indemnity benefits from insurance for compensation for damages, insurance for business goods, business goodwill insurance, and even insurance for shipping goods. Then the Policy Market company, using a business model Insurance Hub. This company organizes insurance digital infrastructure that can help distribute and submit insurance claims.

The demand for protection or insurance guarantees is driven to overcome uncertainty. Uncertainty can be a peril to private parties and business actors. This uncertainty encourages the fulfillment of the need to deal with losses from the consequences of unexpected occurrences. The risks that arise may originate from natural disasters, accidents, illness, negligence, incompetence, errors, failures, or other unforeseen causes including damage, sabotage, and terrorism. Each risk may have a different treatment from one another.

The first challenge dealt with by MSMEs is marketing and promotion, many MSMEs encounter difficulties in marketing and promoting their products, lack of knowledge about modern marketing strategies and limited budgets for promotion can be an obstacle to business growth. The second is access to markets, some SMEs may confront challenges in accessing broader markets outside the Magelang City area. Third, is

business sustainability, where today's technology continues to progress. In addition to this, incidents of fiercer competition that brings down a business are increasingly common. so the role of insurance becomes important in order to maintain business continuity. Fourth, business goods are a risky factor in a business, since these goods are basic goods used in the process of ongoing business activities. Fifth, unexpected events. Several things are unable to be predicted by business actors, such as natural disasters. So the role of insurance becomes important in terms of compensation due to damage that may be suffered by MSMEs. Finally, technology and innovation.

Some SMEs may face difficulties in adopting new technologies or innovations in their operations. Lack of knowledge about the potential of technology, the high cost of adopting it, or limited technological infrastructure can limit MSME business development. The role of insurance especially Insurance Technology becomes essential in reducing the anxiety of business actors regarding the obstacles that may occur. Insurance Technology is suitable for MSME actors, especially in the City of Magelang, namely Cermati, because InsurTech is relevant to the constraints faced by MSMEs. Cermati's products, such as the shipping insurance offer, are a solution to guaranteeing access to goods in the market and at the same time branding consumers for the goods sold because it guarantees that the goods sent are safe.

Good insurance products can be a solution to problems related to the good name of MSMEs. Insurance products on risk mitigation provide guarantees for reimbursement of damage to MSMEs, so that after the occurrences due to a disaster or others, if the MSMEs have been insured, the compensation for damages will be borne by the parties of InsurTech according to the prior agreement. Insurance products on business goods provide a guarantee for risk transferring on business goods during the MSME activity process.

6. Finding and Conclusion

This research suggests that insurance is important in the running of Micro, Small, and Medium Enterprises (MSMEs). It can be verified from the function of insurance as a protector of assets and workers/employees in it. Based on the results of the base sector mapping in Magelang City and recommendations on suitable Insurance Technology for MSMEs, it is expected that the relevant government can provide socialization and encourage MSMEs to be wise in transferring risks for safer business.

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for shipping goods. Then the Policy Market company, using a business model Insurance Hub. This company organizes insurance digital infrastructure that can help distribute and submit insurance claims.

The demand for protection or insurance guarantees is driven to overcome uncertainty. Uncertainty can be a peril to private parties and business actors. This uncertainty encourages the fulfillment of the need to deal with losses from the consequences of unexpected occurrences. The risks that arise may originate from natural disasters, accidents, illness, negligence, incompetence, errors, failures, or other unforeseen causes including damage, sabotage, and terrorism. Each risk may have a different treatment from one another.

The first challenge dealt with by MSMEs is marketing and promotion, many MSMEs encounter difficulties in marketing and promoting their products, lack of knowledge about modern marketing strategies and limited budgets for promotion can be an obstacle to business growth. The second is access to markets, some SMEs may confront challenges in accessing broader markets outside the Magelang City area. Third, is business sustainability, where today's technology continues to progress. In addition to this, incidents of fiercer competition that brings down a business are increasingly common. so the role of insurance becomes important in order to maintain business continuity. Fourth, business goods are a risky factor in a business, since these goods are basic goods used in the process of ongoing business activities. Fifth, unexpected events. Several things are unable to be predicted by business actors, such as natural disasters. So the role of insurance becomes important in terms of compensation due to damage that may be suffered by MSMEs. Finally, technology and innovation.

Some SMEs may face difficulties in adopting new technologies or innovations in their operations. Lack of knowledge about the potential of technology, the high cost of adopting it, or limited technological infrastructure can limit MSME business development. The role of insurance especially Insurance Technology becomes essential in reducing the anxiety of business actors regarding the obstacles that may occur. Insurance Technology is suitable for MSME actors, especially in the City of Magelang, namely Cermati, because InsurTech is relevant to the constraints faced by MSMEs. Cermati's products, such as the shipping insurance offer, are a solution to guaranteeing access to goods in the market and at the same time branding consumers for the goods sold because it guarantees that the goods sent are safe.

Good insurance products can be a solution to problems related to the good name of MSMEs. Insurance products on risk mitigation provide guarantees for reimbursement of damage to MSMEs, so that after the occurrences due to a disaster or others, if the

MSMEs have been insured, the compensation for damages will be borne by the parties of InsurTech according to the prior agreement. Insurance products on business goods provide a guarantee for risk transferring on business goods during the MSME activity process.

9. Finding and Conclusion

This research suggests that insurance is important in the running of Micro, Small, and Medium Enterprises (MSMEs). It can be verified from the function of insurance as a protector of assets and workers/employees in it. Based on the results of the base sector mapping in Magelang City and recommendations on suitable Insurance Technology for MSMEs, it is expected that the relevant government can provide socialization and encourage MSMEs to be wise in transferring risks for safer business.

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