

STUDENTS' SATISFACTION ON ACADEMIC SERVICES IN HIGHER EDUCATION USING IMPORTANCE-PERFORMANCE ANALYSIS

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Abstract - The objective of this research was to determine the students' satisfaction level on the academic services provided by the accounting program at a private university in Jakarta and to evaluate attributes that should be improved. The data were obtained from questionnaires by using 5 quality dimensions. There are tangible, reliability, responsiveness, assurance, and empathy. Moreover, the data were processed by using Excel, SPSS 20, Customer Satisfaction Index (CSI) to determine the level of customer satisfaction, and also Importance-Performance Analysis (IPA) to determine the attributes of service be repaired and maintained. The results show that the CSI is 71%, which means that the majority of customers are satisfied with the performance of the service quality of accounting program. Meanwhile, the results of IPA indicate that the improvement priorities have two attributes in quadrant 1. They are the availability of space to support student activities and the availability of books and teaching materials related to the syllabus. These attributes are the top priority because the importance level is high while the performance level is low from the customers' point of view.

Keywords: students satisfaction, academic service, Importance-Performance Analysis (IPA)

I. INTRODUCTION

Education is a service sector that is currently growing rapidly in Indonesia. This can be seen by many educational institutions that have sprung up both nationally and internationally. The emergence of educational institutions is not only in the primary and secondary level but also in the universities. Education is very important for personal knowledge, career achievement as well as increasing status within the organization and community (Lee *et al.*, 2012). The rapid development of higher education has caused fierce competition to grab market share. In a competitive environment, people have more options to choose. Hence, higher education institutions should start looking for the effective and creative ways to attract and maintain stronger relationships with the students (Hasan *et al.*, 2009). University as a service institution should provide services in quality education, and fulfill the needs and desires of consumers.

Academic services often comprise lectures, practicum, administration and facilities provided by the university to serve students' necessity. Because there are a lot of academic services that must be provided, it must involve several elements that are expected to have high commitment and quality. Quality is a dynamic condition that affects products, services, people, processes, and environments that meet or exceed expectations (Goetsch & Davis, 2013). The elements include lecturers, laboratory staffs,

and administrative personnel. In addition, the availability of other resources that support academic activity such as facilities and infrastructure largely determine the quality of academic services provided. Previous research on service quality in higher education often emphasizes on academic services like the quality of teachers, teaching resources, teaching mechanisms, assessment, and student involvement (Seng & Ling, 2013).

This research is a case study in a private university in Jakarta. The university has been established since 2006 and has 2 faculties and 10 undergraduate programs. One of the undergraduate programs is accounting program which is relatively new and needs feedback to give excellent service. In this research, Customer Satisfaction Index (CSI) is measured to know the satisfaction level. Tjiptono (2012) stated that CSI was a measurement to determine the overall level of customers' satisfaction by considering the importance of the attributes of service quality. The results of CSI can be used as a reference to determine the target to improve services for the consumers. Several researches measure customer satisfaction using CSI such as Pohandry *et al.* (2013), Widi *et al.* (2013), and Nugraha *et al.* (2014).

Moreover, Importance-Performance Analysis (IPA) was first introduced by Martilla and James (1977). This method is used in this research because it can determine which service attributes that should be improved and maintained. Importance-Performance paradigm aims to identify the underlying importance attributed by consumers to the various quality criteria assessed (Sampson & howalter, 1999 in Sari *et al.*, 2014). IPA used in the service field is like previous research from Yang *et al.* (2011), Pohandry *et al.* (2013), Dirgantara and Sambodo (2015), Sari *et al.* (2014), and Nugraha *et al.* (2014) Meanwhile, in educational sector, there are previous researches by Kuo *et al.* (2011), Silva and Fernandes (2011), and Peng (2008).

This research aims to measure students' satisfaction in the educational services system in the accounting program at a private university in Jakarta. The expected results of this research are the level of expectations and customer satisfaction in educational services in accounting program. The evaluation is useful to measure the performance of accounting program in the private university in Jakarta from the customers' perspective. Moreover, knowing the level of expectation and real performance of service quality attributes will lead to improving the top attributes. Hence, the accounting program can allocate resources effectively.

II. METHODS

The research uses questionnaires. By considering the competition among university, researchers notice that customer satisfaction survey is very important. Therefore, customers' opinions are obtained by distributing the

questionnaires to the students. The questionnaires are distributed to the active students of accounting program to know the importance level of each characteristic of academic services. The data of importance level is collected by using questionnaires with 5 Likert scales. Those are very important (5), important (4), neutral (3), unimportant (2), and very unimportant (1). Moreover, for the performance level, the Likert scales are very satisfied (5), satisfied (4), neutral (3), dissatisfied (2), and very dissatisfied (1).

According to the accreditation of higher education institutions, there are 15 attributes included in the accreditation standards. However, the academic factors affecting students' satisfaction only have six attributes as guidelines. They are human resources, curriculum, facilities and infrastructure, learning system, academic atmosphere, and management system. Furthermore, the researchers use five dimensions of service quality developed by Parasuraman *et al.* (1988) in Syukri (2014) for the customer satisfaction measurements. The dimensions are physical evidence (tangibles), reliability, responsiveness, assurance, and empathy. A list of questions is prepared to see the performance level of service quality in the institution. It is symbolized as X and the level of importance as Y. Next, CSI and IPA will be analyzed. The attributes of academic services in the accounting program analyzed are based on the head of the accounting program. The attributes can be seen in Table 1.

Table 1 The Attributes of Academic Service of the Accounting Program

No	Attributes	Quality Dimensions
1	Teaching must be based on the syllabus	Assurance
2	Administrative staffs provide information and friendly services	Assurance
3	Head of the accounting program can be met and contacted by students	Assurance
4	Lecturers provide accurate and timely assessment	Assurance
5	Head of the accounting program is willing to receive complaints, criticism, and suggestion	Empathy
6	Academic tutoring services can provide solutions and benefits to students	Empathy
7	Lecturer is discipline in teaching time	Reliability
8	Lecturer gives time to students to ask a question	Reliability
9	Lecturer know teaching material well	Reliability
10	The administrative staffs provide a quick response	Responsiveness
11	The administrative staffs know a lot of information needed by the students	Responsiveness
12	Adequate spaces for laboratory and practicum are available	Tangibles
13	The space to support student activities must be available	Tangibles
14	Books and teaching materials related to the syllabus are available	Tangibles
15	There is availability of complete and easily understood teaching module in accordance with the syllabus	Tangibles

Fitriana *et al.* (2014) mentioned that the CSI was necessary because the customer satisfaction was measured continuously. To measure CSI, Deckson in Fitriana *et al.* (2014) described 4 steps in CSI. First, it determines the Mean Importance Score (MIS) and Mean Satisfaction Score (MSS). This value is derived from the average level of importance and performance of each respondent.

$$MIS = \frac{\sum_{i=1}^n Yi}{n} \quad (1)$$

$$MSS = \frac{\sum_{i=1}^n Xi}{n} \quad (2)$$

Where it means:

N = Number of respondents

Yi = Importance value of i attribute

Xi = Performance value of i attribute

Second, it calculates Weight Factor (WF). It presents a percentage value of MIS in each attribute to the total MIS of all the attributes. The equation can be:

$$WF = \frac{MIS}{\sum_{i=1}^p MISi} \times 100\% \quad (3)$$

Where:

P = Number of importance attributes

i = Service attribute

Third, it measures Weight Score (WS). This value is derived from multiplication of the Weight Factor (WF) with the average level of satisfaction (MSS). The equation can be seen as:

$$WSi = WFi \times MSSi \quad (4)$$

Fourth, it is determining the CSI value. Customer satisfaction scale is commonly used to interpret the index scale of zero to one, or zero to one hundred. The equation is:

$$CSI = \frac{\sum_{i=1}^n WSi}{5} \times 100\% \quad (5)$$

Furthermore, CSI values in the research are divided into 5 categories. Table 2 shows the categories.

Table 2 Customer Satisfaction Index (CSI) Scale

No	Index Value	Remark
1	81%-100%	Very satisfied
2	66%-80,99%	Satisfied
3	51%-65,99%	Quite satisfied
4	35%-50,99%	Less satisfied
5	0%-34,99%	Not satisfied

(Source: Fitriana *et al.*, 2014)

This analysis links the importance level of the attributes with perceived performance by the users. The first step to analyze IPA is to calculate the average level of importance and performance for each attribute with the equation:

$$\bar{X}_i = \frac{\sum_{i=1}^k X_i}{n} \quad (6)$$

$$\bar{Y}_i = \frac{\sum_{i=1}^k Y_i}{n} \quad (7)$$

It means:

X_i = Average weight of performance level for i item

Y_i = Average weight of importance level for i item

n = number of respondents/samples

Secondly, the step is to calculate the average level of importance and performance for the entire items. The equation can be:

$$\bar{\bar{X}} = \frac{\sum_{i=1}^k \bar{x}_i}{p} \quad (8)$$

$$\bar{\bar{Y}} = \frac{\sum_{i=1}^k \bar{y}_i}{p} \quad (9)$$

Where it means:

$\bar{\bar{X}}$ = value of average performance item

$\bar{\bar{Y}}$ = value of average importance item

P = number of items

This $\bar{\bar{X}}$ value cuts perpendicular to the horizontal axis. The y-axis reflects the satisfaction of the item (x).

Meanwhile, the value of $\bar{\bar{Y}}$ makes perpendicular to the vertical axis. The x-axis represents the importance of items (y). After obtaining performance and importance weight, and the average value of performance and importance items, the researchers illustrate the values in a Cartesian diagram. To interpret the IPA graph, the diagram is divided into 4 quadrants based on measurements of importance and performance as shown in Figure 1.

Importance (\bar{Y})	Quadrant I (Concentrate Here)	Quadrant II (Keep up the good work)
	Quadrant III (Lower Priority)	Quadrant IV (Possible overkill)
	Performance (\bar{X})	

Figure 1 Four Quadrants of Importance-Performance Analysis (Source: Adapted from Martilla & James, 1977)

The diagram of Importance-Performance Analysis (IPA) as seen in Figure 1 consists of 4 quadrants, namely: (1) quadrant I, the area contains the items with relatively high importance, but the performance does not meet user expectations. The items in this quadrant must be improved immediately; (2) quadrant II, the area contains the items that have a relatively high importance level with a relatively high level of satisfaction as well. The items in this quadrant are considered as an additional factor for user satisfaction and should be maintained because all of these items make the product or service superior in customers' point of view; (3) quadrant III, the area contains the items with relatively low importance level and satisfaction. The items in this quadrant provide a very small effect on the benefits perceived by the user; (4) quadrant IV, this area contains the items with relatively low importance level, but the performance level are relatively high. The expenses used to support these items can be reduced to save costs.

Next, population identification is the first step in research aiming to determine who the respondents are. The research object is active students in the academic year 2015/2016. The active students of accounting program are 227 students. Around 70 students as the samples are obtained by using the Slovin Formula (Umar, 2005 in Sari *et al.*, 2014) with 10% tolerance level.

Data analysis techniques are performed by using SPSS 20 to measure the level of reliability and validity of a questionnaire. A questionnaire is reliable if the respondents answer the questions consistently or stably over time. Meanwhile, SPSS software provides the facility to measure reliability with Cronbach Alpha statistical test. A constructor variable is said to be reliable if the value of Cronbach Alpha is $> 0,60$. The results of validity and reliability test of the questionnaires obtained are shown in Table 3.

III. RESULTS AND DISCUSSIONS

Consumer satisfaction is a feeling of pleasure or disappointed arising from the performance of services provided by the company to the consumer. Customer satisfaction will give a major contribution to the survival of a company because consumers who feel satisfied with the performance of services will continue to establish a strong bond with the company by using the products or services. On the other hand, if the customer is not satisfied or disappointed with the services, they can switch to another products or services and no longer use the company's products or services. This will ultimately affect the financial condition and viability of the company. The customer satisfaction level in this research is analyzed using Customer Satisfaction Index (CSI) and Importance-Performance Analysis (IPA). CSI requires attributes of service quality. It consists of five dimensions of service quality. There are tangible, reliability, responsiveness, assurance, and empathy. The results of CSI of accounting program are in Table 4.

The CSI value is 71%. This value illustrates that the accounting program students are satisfied with the performance of the services provided. However, they still feel that the services have not been provided maximally as expected. They want to feel more satisfied with the services provided in the future.

IPA is an analytical tool used to analyze the level of importance and performance. It aims to determine which attributes that are with low performance and should be improved. It also determines which 15 attributes of service

quality performance that has been rated as good and should be maintained. The importance level of consumer and the performance level of the company can be determined by calculating the average level of importance and the performance from the questionnaires. The results can be seen in Table 5.

Based on calculations in Table 5, The overall average value of importance level is 4,27 while the overall average value of performance level is 3,54. The average value of importance and performance level will be used as a benchmark to determine which 15 attributes that have an average value exceeded the overall average importance and performance level.

From the 15 attributes of service quality, 7 attributes of importance level have greater average value than the average score of the overall importance level. These attributes are: (1) teaching must be based on the syllabus (4,29); (2) head of the accounting program can be met and contacted by students (4,41); (3) head of accounting program is willing to receive complaints, criticism, and suggestion (4,34); (4) lecturer know teaching material well (4,47); (5) the space to support student activities must be available (4,34); (6) books and teaching materials related to the syllabus are available (4,41); (7) there is availability of complete and easily understood teaching module in accordance with the syllabus (4,34).

As for the performance level, there are seven attributes too that have greater average value than the average level of overall performance. These are: (1) teaching must be based on the syllabus (3,67); (2) administrative staffs provide information and friendly services (3,64); (3) head of the accounting program can be met and contacted by students (4,04); (4) head of accounting program is willing to receive

complaints, criticism, and suggestion (3,76); (5) lecturer gives time to students to ask a question (3,89); (6) lecturer know teaching material well (3,74); (7) the administrative staffs know a lot of information needed by the students (3,61).

After knowing the average value of each attribute, the average level of importance and performance are put in a Cartesian quadrant or Cartesian diagram and analyzed by using SPSS 20. There are 4 parts of quadrants describing the position of the 15 attributes of service quality. Each of the 4 quadrants states different conditions. The numbers of each attribute are inserted into the Cartesian quadrant or Cartesian diagram as shown in Figure 2.

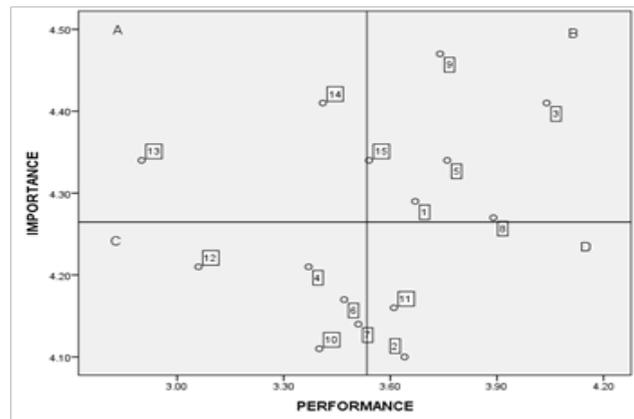


Figure 2 Cartesian Diagram of Importance-Performance Analysis (IPA)

Table 3 Validity and Reliability Test of Questionnaire

Item-Total Statistics				
Questions	Scale Mean If Item is Deleted	Scale Variance If Item is Deleted	Corrected Item-Total Correlation	Cronbach's Alpha If Item is Deleted
Q1	49,20	68,510	0,620	0,890
Q2	49,23	68,323	0,481	0,894
Q3	48,53	68,326	0,427	0,897
Q4	49,37	66,240	0,638	0,889
Q5	49,03	63,206	0,676	0,887
Q6	49,60	67,283	0,538	0,892
Q7	49,27	68,133	0,494	0,894
Q8	48,80	66,786	0,466	0,896
Q9	48,90	64,852	0,627	0,889
Q10	49,43	65,426	0,750	0,885
Q11	49,27	66,271	0,671	0,888
Q12	49,93	66,478	0,558	0,892
Q13	49,90	67,266	0,448	0,897
Q14	49,43	64,599	0,734	0,885
Q15	49,30	67,183	0,598	0,890

Reliability Statistics	
Cronbach's Alpha	N of Items
0,898	15

Table 4 Customer Satisfaction Index (CSI)

No	Attributes	Importance	Weight Factor	Performance	Weight Score
		(MIS)	(WF)	(MSS)	(WS)
		Scale 1-5		Scale 1-5	
1	Teaching must be based on the syllabus	4,29	0,07	3,67	0,25
2	Administrative staffs provide information and friendly services	4,10	0,06	3,64	0,23
3	Head of the accounting program can be met and contacted by students	4,41	0,07	4,04	0,28
4	Lecturers provide accurate and timely assessment	4,21	0,07	3,37	0,22
5	Head of the accounting program is willing to receive complaints, criticism, and suggestion	4,34	0,07	3,76	0,25
6	Academic tutoring services can provide solutions and benefits to students	4,17	0,07	3,47	0,23
7	Lecturer is discipline in teaching time	4,14	0,06	3,51	0,23
8	Lecturer gives time to students to ask a question	4,27	0,07	3,89	0,26
9	Lecturer know teaching material well	4,47	0,07	3,74	0,26
10	The administrative staffs provide a quick response	4,11	0,06	3,40	0,22
11	The administrative staffs know a lot of information needed by the students	4,16	0,06	3,61	0,23
12	Adequate spaces for laboratory and practicum are available	4,21	0,07	3,06	0,20
13	The space to support student activities must be available	4,34	0,07	2,90	0,20
14	Books and teaching materials related to the syllabus are available	4,41	0,07	3,41	0,24
15	There is availability of complete and easily understood teaching module in accordance with the syllabus	4,34	0,07	3,54	0,24
	Total	64,00	1,00	53,03	
	Total Weight				3,54
	Customer Satisfaction Index (CSI)				71%

Table 5 Average Value of Importance and Performance Level

No	Attributes	Importance	Performance
		(MIS)	(MSS)
		\bar{Y}	\bar{X}
1	Teaching must be based on the syllabus	4,29	3,67
2	Administrative staffs provide information and friendly services	4,10	3,64
3	Head of the accounting program can be met and contacted by students	4,41	4,04
4	Lecturers provide accurate and timely assessment	4,21	3,37
5	Head of the accounting program is willing to receive complaints, criticism, and suggestion	4,34	3,76
6	Academic tutoring services can provide solutions and benefits to students	4,17	3,47
7	Lecturer is discipline in teaching time	4,14	3,51
8	Lecturer gives time to students to ask a question	4,27	3,89
9	Lecturer know teaching material well	4,47	3,74
10	The administrative staffs provide a quick response	4,11	3,40
11	The administrative staffs know a lot of information needed by the students	4,16	3,61
12	Adequate spaces for laboratory and practicum are available	4,21	3,06
13	The space to support student activities must be available	4,34	2,90
14	Books and teaching materials related to the syllabus are available	4,41	3,41
15	There is availability of complete and easily understood teaching module in accordance with the syllabus	4,34	3,54
	Total	64,00	53,03
	Average Value	4,27	3,54

Based on Figure 2, there are 2 attributes of the 15 attributes of service quality in quadrant A (quadrant I), 6 attributes in quadrant B (quadrant II), 5 attributes in quadrant C (quadrant III), and 2 attributes in quadrant D (quadrant IV). The condition of each quadrant will be explored deeper.

First, quadrant A considers the position of the service quality attributes as the top priority. In this quadrant, the importance level of attributes is higher than the average level of importance, but the performance level is low. In other words, attributes of service quality in this quadrant are influential on consumer satisfaction because the consumer expectations on the existing attributes of this quadrant are very important but the performance is still low. Therefore, the company should pay more attention and improve the performance of the attributes in this quadrant to meet the customer satisfaction. There are several attributes in this quadrant. (1) Attribute number 13, the space to support student activities must be available. It has an average value of importance level 4,41 and the average value of performance level 2,90. Consumers' expectation is high, but the performance is still low which make consumers feel unsatisfied. It is because the capacity of the current room is not sufficient enough to support students' activities. (2) Attribute number 14, books and teaching materials related to the syllabus are available. This attribute has an average value of importance level 4,34, and the average value of performance level 3,54. This attribute describes that there is a high consumer expectation, but the performance level is still low. Consumers are not satisfied because of the limited number of books and teaching materials.

Second, quadrant B illustrates the conditions of service quality attributes that should be maintained. The attributes have a high level of importance level and performance level which is above the overall average value. In other words, consumers consider the attributes in this quadrant as very important, and the performance as good or satisfactory. Although the attributes are considered good, the management should not create complacency and should still maintain and even improve the performance of the attributes.

There are 6 attributes of service quality whose performance should be maintained due to the good value in the consumers' opinion. The attributes are (1) attribute number 1, teaching must be based on the syllabus. It has the average value of the importance 4,29 and the average value of performance 3,67; (2) attribute number 3, head of the accounting program can be met and contacted by students. The average value of the importance is 4,41, and the average value of performance is 4,04; (3) attribute number 5, head of the accounting program is willing to receive complaints, criticism, and suggestion. This attribute has the average value of the importance 4,34 and the average value of performance 3,76; (4) attribute number 8, lecturer gives time to students to ask a question. The average value of importance is 4,27, while the average value of performance is 3,89; (5) attribute number 9, lecturer know teaching material well. This attribute has an average value of the importance 4,47, and the average value of performance 3,74; (6) attribute number 15, there is the availability of complete and easily understood teaching module in accordance with the syllabus. It is 4,34 for the average value of the importance, and 3,54 for the average value of performance.

Third, quadrant C illustrates the situation of service quality attributes that have an average level of importance-performance below the overall average score of attributes. The attributes in this quadrant are considered as unimportant

by consumers, and the company does not prioritize these attributes. It does not mean the management can ignore this attributes, but the performance of these attributes should be considered and managed well because the dissatisfaction in this quadrant could change into quadrant A depending on the trend change.

There are 5 attributes of service quality in this quadrant. They are (1) attribute number 4, lecturers provide an accurate and timely assessment. It is 4,21 for the average value of importance, and the 3,37 for the average value of performance; (2) attribute number 6, academic tutoring services can provide solutions and benefits to students. It has the average value of importance 4,17, and the average value of performance 3,47; (3) attribute number 7, the lecturer is discipline in teaching time. The average value of importance is 4,14, and the average value of performance is 3,51; (4) attribute number 10, the administrative staffs provide a quick response. It has the average value of importance 4,11, and the average value of performance is 3,40; (5) attribute number 12, adequate spaces for laboratory and practicum are available. The average value of importance is 4,21, and the average value of performance is 3,06.

Last, quadrant D is the position of service quality attributes whose importance level is low, while the performance level is high. In other words, the attributes of service quality in this quadrant are considered as unimportant by the consumers, but the company gives high performance. There are two attributes in this quadrant. (1) Attribute number 2, administrative staffs provide information and friendly services. The average value of importance is 4,10, and the average value of performance is 3,64. (2) Attribute number 11, the administrative staffs know a lot of information needed by the students. It has the average value of importance 4,16 and the average value of performance 3,61.

Compared to previous research, this research confirms that IPA method can be used to prioritize service quality attributes. Then, the attributes can be improved and maintained in higher education. This result is in line with research conducted by Silva and Fernandes (2011), and Peng (2008).

CSI method is useful for the management to know the overall customer satisfaction. On the contrary, IPA method analyzes the detailed attributes to determine the prioritization in improvement. Both of these methods give comprehensive insight into management to make a decision in the resource management.

IV. CONCLUSIONS

The level of student satisfaction of the Accounting Program is calculated by using the Customer Satisfaction Index (CSI) to the attributes of academic services. The result shows the value of 71%. It means the value is in the range of CSI between 66% - 80,99%. It can be concluded that the students are satisfied with the performance of the program.

Moreover, the student satisfaction level in the accounting program is analyzed by using Importance-Performance Analysis (IPA). The results show that there are 2 attributes in the top priority in quadrant A. In addition, it should be improved because of the high level of importance and low level of performance from the customers' point of view. These attributes are the availability of space to support student activities and the availability of books and teaching materials related to the syllabus. The attributes

in quadrant B should be maintained because it has high importance level and high-performance level. Meanwhile, the attributes in quadrant C are considered the low priority. It is because of the low importance level and performance level. On the contrary, quadrant D is considered to provide excessive services because of low importance level and high-performance level. IPA method successfully prioritizes the attributes for improvement. Therefore, the management can allocate resources better to improve service quality for customer satisfaction.

The limitation of this research is the researchers only indicate the areas of priority for improvement in the accounting program at a private university in Jakarta. Moreover, for the future research, the researchers suggest analyzing these priorities regarding how to improve the quality of the attributes by using Quality Function Deployment (QFD). It is because this method can translate customers' needs into technical requirements.

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