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## ABSTRACT

The library is an organization that continues to grow and develop along with the behavior of its users. Users who will continue to use the library despite the emergence of many other sources of information, such as the internet, are needed for library sustainability. This study aims to determine the relationship between service quality and satisfaction on user loyalty in-state college libraries in Surabaya, Indonesia. The research method used is quantitative by distributing questionnaires through Google form to 500 respondents of state academic library users with the criteria of having used services in the library. The analysis technique is Confirmatory Factor Analysis (CFA) with the aim of testing the model. Data processing software used is SPSS and Smart PLS. The results of the study are as follows: 1) Service quality has a significant effect on user satisfaction, with a contribution of 79.6%; 2) Service quality has a significant effect on user loyalty, with a contribution of 60.7%; 3) User satisfaction has a significant effect on loyalty, with a contribution of 23.8%; 4) Service quality has a significant effect on loyalty by mediating user satisfaction with a contribution of 19%.

KEYWORDS: Service quality, satisfaction, loyalty, user library, college library

BACKGROUND

User loyalty is something that grows in the user through the perceived experience (Tajedini, et.al., 2019; Kanakaratne, Bray, and Robson, 2020). Contrary to the perception that only profit-oriented organizations compete with each other so as not to lose the loyalty of their users, loyalty also becomes a major goal for non-profit organizations (Zalluhoglu, 2017; Suki, 2010; Oh, 2017) The library is no exception, as it is considered as a non-profit organization in the field of information services. Library users become a determinant of the survival of the library, hence, it is important for libraries to determine how to get new users and maintain old users. Loyalty of library users is illustrated as those who are willing to spend time, energy, or even money to utilize the services provided by the library (Keshvari, Farashbandi, and Geraei, 2014). Meanwhile, according to Tajedini, et.al., (2019) loyalty of library users can be interpreted as a response to user behavior, such as revisiting the library and deciding to use the services provided, such as borrowing and returning books. Furthermore, loyalty is not only a matter of reusing it, but also to recommending a library to those around the area (Bakti & Sumaedi, 2013)

Library user loyalty is not only influenced by external factors such as the source of information from the internet as a library competitor. It is also influenced by internal factors such as the quality of services provided by libraries (Helgesen & Nesset, 2011; Annamdevula & Bellamkonda, 2014) or the satisfaction felt by users while using library services (Xu and Du, 2018; Haruna, Kiran, & Tahira, 2017), or both (Bakti & Sumaedi, 2013; Martensen & Gronholdt, 2003). There are still many factors that make users less satisfied when visiting the library. Users are still complaining about the library building that are not comfortable (Asemi, Kazempour, Rizi, 2010). Some librarians are felt to be unfriendly and need to improve their ability to serve users (Killick, Weerden, & weerden, 2014; Kumar & Mahajan, 2019). Likewise, online library services are also regarded to have low quality (Bae & Cha, 2014). This shows that the library needs to improve good relations with users through the provision of quality services so that users feel satisfied and give loyalty to the library.

The results of the research conducted by Nurahman (2016) at the library of Universitas Airlangga show that service quality, image, user satisfaction and loyalty have a positive relationship. User satisfaction as a supporting variable strengthens the relationship between variables. Research conducted by Gede & Sumaedi (2013) revealed that service quality does not directly affect customer loyalty in library services. However, it was found that service quality affects customer loyalty in library services indirectly through customer satisfaction. Different

things were obtained in the study of Tajedini, et.al. (2020), which show that observing moral and humanitarian principles when dealing with library users plays an important role in building user loyalty to the library and attracting new users. From the three results of this study, it can be seen that there are still gaps about the factors that affect the loyalty of library users.

OBJECTIVES OF THE STUDY

The purpose of this study is to identify: 1) The condition of service quality, satisfaction and loyalty of college library users; 2) the relationship between service quality and loyalty of college library users; 3) the relationship between user satisfaction and loyalty of college library users; 4) the relationship of service quality by intervening user satisfaction and loyalty of college library users and; 5) the most dominant factor in determining the loyalty of college library users.

LITERATURE REVIEW

Loyalty

Loyalty is defined as a commitment held firmly to buy or subscribe to certain products or services in the future despite the influence of the situation and marketing efforts that have the potential to cause behavior change (Kotler and Keller, 2007). Loyalty itself becomes the most important thing in developing effective strategies to maintain users using library services (Gede & Sumaedi, 2013). Not only for users, loyalty can also occur in volunteers. According to Oh (2019), the loyalty of volunteers is one of the motivations which is also very beneficial for non-profit companies, such as libraries, because resources will not be a concern.

Loyalty needs to be managed properly so that it can be maintained for the users. According to (Rowley & Dawes, 1999) the following attitudes are generated from loyalty: (1) motivation to search for brands or services, (2) communication that will arise from satisfaction/dissatisfaction, (3) resistance to counterpersuasion. The ultimate goal of a service provider institution such as a library is user loyalty (Haruna, Kiran, & Tahira, 2017). Loyalty will lead to positive comments, reuse, and recommendations to others.

Satisfaction

Satisfaction is someone's feeling of pleasure or disappointment resulting from the perceived performance of a product or outcome against expectations (Kotler and Keller, 2007). Satisfaction is also interpreted as the achievement of self-desires or self-needs and happiness obtained after achievement (Stoltenberg, 2011). Library user satisfaction needs to be evaluated to continue to improve library performance, because satisfied users will result in the reuse of the library and recommend it to other friends (Motiang et. al, 2014).

Several factors can affect the level of user satisfaction such as library services, information resources and the physical library environment (Tetteh, 2019) and also are library collections both print and non-print. A complete collection and updates will increase user satisfaction, and will make the library a place to find the information they need. Putra, et.al. (2018) said that the previous researchers referred to the theory carried by DeLone and McLean that the 4 variables that referred to satisfaction were information quality, system quality, service quality, and user satisfaction.

Service Quality

Libqual is defined as a method that helps libraries to evaluate and measure LSQ (library service quality), in which it is considered as a popular standard protocol used to help libraries to track, understand, and act on SQ (service quality) users' attitudes (Kumar & Mahajan, 2019). The LibQual method is commonly used in various academic libraries. Not only that, LibQual is the cheapest and this method provides an opportunity for comparison of the same and interesting questions with other colleagues (Hitchingham & Kenney, 2002). In LibQual evaluation, the response is about the user's perception of the library, in which the users perceive the services to be on a general level, but also simultaneously brings up a more nuanced view involving these specific elements (Cook, Heath, & Thompson, 2001).

The latest the LibQUAL+™ consists of three dimensions, namely affect of service, information control, and library as place (Colleen, 2015). Affect of service is the ability of library staffs to serve users. Information control deals with the availability of information and access to quality information. Library as place is the availability of facilities and spaces that are useful for library learning activities. The library today is not just a building, it is recognized as a culture as the result of the accumulation of various civilizations that produce metadata, OPAC, websites, and so on (Hudson, 2018).

CONCEPTUAL DATA MODELS AND HYPOTHESES

Conceptual models in this study can be seen in Figure 1. This model shows that there is a relationship between service quality on satisfaction towards loyalty, in which satisfaction from the service will drive the users to be loyal.
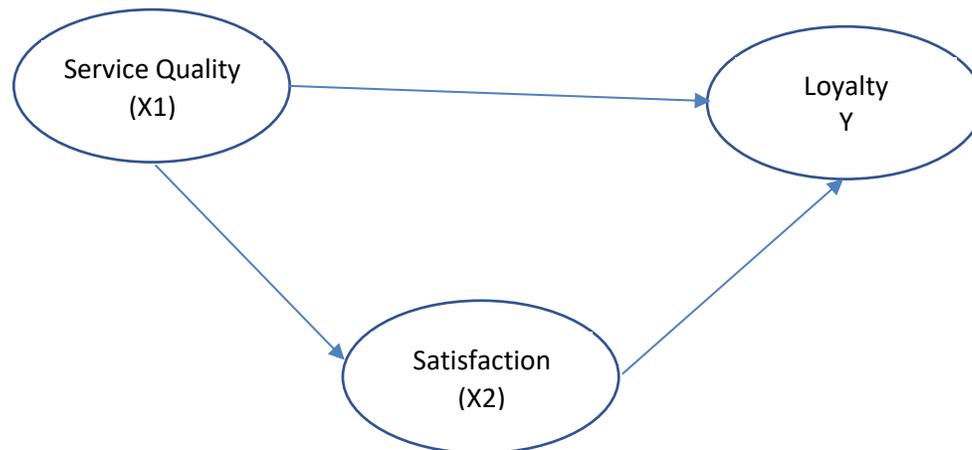


Figure 1. Conceptual research model

Research conducted by Masruroh (2017) explains that there is a significant relationship between service quality and user satisfaction. The same result was also shown by Afthanorhan et. al (2019), in which service quality has a significant influence on library user satisfaction. Thus, the first hypothesis of this study is:

H1: Service quality affects the satisfaction of users of state university libraries

User loyalty can be obtained by improving the quality of service and user satisfaction, this is in line with research conducted by Nurahman (2016). The same research also shows that the influence of service quality and satisfaction on library loyalty is significant, with the influence of the quality of service of librarians on library loyalty by mediating library satisfaction having the same result (Risparyanto, 2017; Cumbara, 2019). This leads to the second and third hypotheses in this study:

H2: Service quality affects the loyalty of users of state university libraries

H3: Satisfaction affects the loyalty of state university library users

H4: Service quality has an effect on loyalty by intervening the satisfaction of users of state university libraries

RESEARCH METHOD

This research uses a quantitative approach using numbers and statistical tests. This study aims to test the theory with data that has been collected. Data collection was carried out by surveying through Googleforms to library user students in 5 state universities in Surabaya, namely Universitas Pembangunan Negara (UPN), Universitas Airlangga (UNAIR), Universitas Negeri Surabaya (UNESA), Institut Teknologi Surabaya (ITS) and Universitas Islam Negeri Sunan Ampel (UINSA).

The population of this study is all library users of State college in Surabaya with the criteria that they have visited the library and used the existing facilities in the library. These criteria are given to ensure that the respondent can give a valid opinion in accordance with the condition of the library, including satisfaction in using the library which ultimately causes them to be loyal to the library they visit.

This research applies purposive sampling. Because the total population is not known, the number of samples is used under the concept of Hair (2014). The number of question variables is 31 multiplied by 15 (465) and to facilitate the distribution and processing of data, it is rounded up to 500 respondents divided equally into 5 tertiary institutions, so that in each university there are 100 samples. The data that has been collected is then analyzed using the Confirmatory Factor Analysis (CFA) technique. Confirmatory factor analysis aims to find a number of variables which form variables that are not measured directly by the theoretical basis. Hence, this confirmatory factor analysis aims to test the theory.

Descriptive data processing is done by creating categories or levels to determine the level of respondents' answers. The division of categories in this research is divided into 3 namely high, medium and low. The method of division of categories is as follows:

I = R / K = (5-1) / 3 = 1.33, where I: Interval R: Range K: Class

The levels or categories of respondents' answers are as follows:

| Scale | Quality | Satisfaction | Loyalty |
|---|---|---|---|
| 1 - 2.33 | Poor (P) | Low (L) | Low (L) |
| 2.34 - 3.66 | Fair (F) | Moderate (M) | Moderate (M) |
| 3.67 - 5.00 | Good (G) | High (H) | High (H) |

RESULTS AND DISCUSSION

**TABLE 1.** Demographic data of respondents

| Description | | UNAIR | | UNESA | | UPN | | ITS | | UINSA | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | f | % | f | % | f | % | f | % | f | % | f | % |
| **Faculty Type** | Science | 16 | 16 | 28 | 28 | 26 | 26 | 98 | 98 | 9 | 9 | 177 | 35 |
| | Social | 84 | 84 | 72 | 72 | 74 | 74 | 2 | 2 | 91 | 91 | 323 | 65 |
| **Gender** | Male | 32 | 32 | 13 | 13 | 33 | 33 | 33 | 33 | 42 | 42 | 153 | 31 |
| | Female | 68 | 68 | 87 | 87 | 67 | 67 | 67 | 67 | 58 | 58 | 347 | 69 |

The demographics of the respondents are listed in the Table 1 above. It can be seen that the number of respondents coming from the exact sciences group is 35% of the total, which is 177 respondents. While the number of respondents coming from social major groups is 65% of the total number of 323 respondents. It can also be taken that from the 69% of respondents, 347 are female respondents, while the other 31% are 153 male respondents. Most female respondents came from UNESA as many as 87%, while 13% were male respondents. While most respondents were from UINSA (42%).

## CONDITIONS OF SERVICE QUALITY, LEVEL OF SATISFACTION, AND USER LOYALTY

**TABLE 2.** Average value of service, quality of public tertiary libraries

| Service Quality (X1) | UNAIR | UNESA | UPN | ITS | UINSA | Avg | Note: |
|---|---|---|---|---|---|---|---|
| Affect Of Service | 3.83 | 3.36 | 3.63 | 3.62 | 3.65 | **3.62** | **Fair** |
| Information Control | 3.91 | 3.41 | 3.6 | 3.62 | 3.94 | **3.70** | **Good** |
| Library as Place | 4.22 | 3.51 | 3.88 | 3.95 | 4.15 | **3.94** | **Good** |
| **Average** | **3.99** | **3.43** | **3.70** | **3.73** | **3.91** | **3.75** | **Good** |
| **Note:** | **Good** | Fair | Good | Good | Good | Good | |

The data processing shown in table 2 shows that the average yield of the effect of service indicator is 3.62, which means the quality of the librarian's service is sufficient, while the Information control dimension is 3.7, indicating that availability and access to information is sufficient as well. The library as place indicator has an average value of 3.92, meaning that the quality of the transfer as a place of learning, discussion is good. Hence, the overall quality of service in 5 public tertiary institutions is sufficient with an average value of 3.75. From the table above, it can also be seen that among the selected library, UNAIR is considered to have the best

quality of the five other universities with an average rating of 3.99 while the lowest is UNESA with a value of 3.43.

**TABLE 3.** The average measurement results of the level of library user satisfaction

| Satisfaction | UNAIR | UNESA | UPN | ITS | UINSA | AVG | Note: |
|---|---|---|---|---|---|---|---|
| Service | 3.99 | 3.39 | 3.76 | 3.72 | 3.98 | 3.77 | Moderate |
| Data Collection | 3.98 | 3.22 | 3.39 | 3.54 | 3.87 | 3.6 | Moderate |
| Facility | 4.04 | 3.44 | 3.78 | 3.76 | 4.11 | 3.83 | High |
| Performance | 3.86 | 3.23 | 3.39 | 3.49 | 3.63 | 3.52 | Moderate |
| Average | 3.97 | 3.32 | 3.58 | 3.62 | 3.89 | 3.68 | High |
| Note: | High | Moderate | Moderate | Moderate | High | Moderate | |

Table 3 above is the result of the calculation of the satisfaction indicators in 5 university libraries, it can be seen that the average yield of satisfaction is 3.68. The university library that the highest score was the Universitas Airlangga library which amounted to 3.97, followed by the Sunan Ampel State Islamic University library (3.89), while the lowest value is in the Surabaya State University library which is 3.32.

**TABLE 4.** The average measurement results of the level of library user's loyalty.

| Loyalty | UNAIR | UNESA | UPN | ITS | UINSA | AVG | Note: |
|---|---|---|---|---|---|---|---|
| Re-use | 3.77 | 3.45 | 3.59 | 3.51 | 3.79 | 3.62 | Moderate |
| Recommendation | 3.93 | 3.41 | 3.61 | 3.62 | 3.85 | 3.68 | High |
| Average | 3.85 | 3.43 | 3.6 | 3.57 | 3.82 | 3.65 | Moderate |
| Note: | High | Moderate | Moderate | Moderate | High | Moderate | |

Table 4 above is the result of the calculation of loyalty indicators from 5 university libraries. The average results obtained are 3.6. While the highest average results of the 5 libraries are in Universitas Airlangga library which is 3.84 and the lowest is the Surabaya State University library which is 3.42.

THE EFFECT OF SERVICE QUALITY SATISFACTION ON USER LOYALTY

**TABLE 5.** Test the validity and reliability of the data

|  | Cronbach's Alpha | rho_A | Composite Reliability | Average Variance Extracted (AVE) |
|---|---|---|---|---|
| Satisfaction | 0.88 | 0.883 | 0.917 | 0.736 |
| Quality of Service | 0.969 | 0.972 | 0.972 | 0.603 |
| Loyalty | 0.889 | 0.894 | 0.923 | 0.75 |

Requirements 1 must be valid and reliable, because the Cronbach's Alpha value is more than 0.7 and the AVE value is above 0.5 (table 5).

**TABLE 6.** Multicollinearity Test

|  | Satisfaction | Quality of Service | Loyalty |
|---|---|---|---|
| Satisfaction |  |  | 2.724 |
| Quality of Service | 1 |  | 2.724 |
| Loyalty |  |  |  |

The second requirement, the value of multicollinearity is less than 5 or even less than 3 (2.724). Hence, it can be said to be ideal or free from multicollinearity (table 6).

**TABLE 7.** Test the effect on service quality

| Service Quality Dimensions | Value |
|---|---|
| Affect Of Service | 0.767 |
| Information Control | 0.737 |
| Library as Place | 0.774 |

From table 7, it can be seen that Affect of Service has a relationship of 0.767 to Service Quality, Information Control has a relationship of 0.737 to Service Quality, and Library as a place has a relationship of 0.774 to Service Quality. From these results it can be seen that the library as place has the most influence on the quality of service in the state university libraries.

**TABLE 8.** Direct Effect of Independent Variables on Dependent Variables

| | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (|O/STDEV|) | P Values |
|---|---|---|---|---|---|
| Satisfaction -> Loyalty | 0.238 | 0.238 | 0.051 | 4.653 | 0.000 |
| Service Quality -> Satisfaction | 0.796 | 0.798 | 0.023 | 34.628 | 0.000 |
| Service Quality -> Loyalty | 0.607 | 0.607 | 0.05 | 12.163 | 0.000 |

Table 8 shows that Satisfaction influences loyalty because the P Value is below 5%, Service Quality influences Satisfaction because the P Value is below 5%, and Service Quality influences Loyalty, because the P Value below 5%. Hypothesis testing is done by comparing the T statistic value with the T table value (T table = 1.984467455, sample 500) and because all independent variables have a T statistic value exceeding T table, all independent variables are said to have a significant effect on the dependent. Thus, the results are:

1. H1 is accepted, which means that service quality has a significant effect on satisfaction with a Tstat value of 34.628> 1.984.

2. H2 is accepted, which means that service quality has a significant effect on Loyalty with a Tstat value of 12.163 > 1.984.

3. H3 is accepted, which means that user satisfaction has a significant effect on Loyalty with a Tstat value of 4.653> 1.984.

**TABLE 9.** Strength value of direct influence X1, X2 on Y

| | R Square | R Square Adjusted |
|---|---|---|
| Satisfaction | 0.633 | 0.632 |
| Loyalty | 0.655 | 0.653 |

Table 9 shows that the Effect of Service Quality on Loyalty is 0.655/65.5%, meaning that service quality affects the loyalty of users of the center by 65.5% while 34.5% is influenced by other factors. Likewise, the effect of satisfaction on loyalty is 0.633/63.3%, meaning that user satisfaction affects library user loyalty by 63.3% while 36.7% is influenced by other factors.

**TABLE 10.** The Indirect Effect of X1 on Y through X2

| | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (|O/STDEV|) | P Values |
|---|---|---|---|---|---|
| Satisfaction -> Loyalty | | | | | |
| Service Quality -> Satisfaction | | | | | |
| Service Quality -> Loyalty | 0.19 | 0.19 | 0.043 | 4.451 | 0.000 |

As seen in table 10, service quality indirectly affects Loyalty through user satisfaction because P Values (0.000) are less than 5%, with an indirect effect value between Service quality on Loyalty through user satisfaction of 0.190/19% (table 11). It also can be taken that the service quality influences user satisfaction by 0.796 or 79.6%, meaning that service quality provides an effect of 79.6% while 20.4% is influenced by other factors (table 8).

**TABLE 11.** The Indirect Effect of X1 on Y through X2

| | Satisfaction | Quality of Service | Loyalty |
|---|---|---|---|
| Satisfaction | | | |
| Quality of Service | | | 0.190 |
| Loyalty | | | |

DATA ANALYSIS

From table 12 above, it can be seen that research to the satisfaction of library users of services in university libraries in the city of Surabaya from 2016 to 2020 experienced significant changes. Based on research by Harisanty (2016) conducted in 3 library locations, namely Universitas Airlangga, ITS, and UNESA, stated that the ITS library received the highest average value compared to 2 other libraries. ITS Library gets superior value in the dimensions of library as place which is equal to 4.1822, which means the conducive atmosphere of the library, maintained cleanliness, and comfort of the library room is considered very good by the users. Meanwhile, according to Wulandari (2016) in her research on the quality of ITS library services, based on the calculation of the customer satisfaction index, the number obtained was 72.15%, which means that it can be concluded that the overall visitors of the ITS library are satisfied with

the services provided. ITS library users assess 2 factors that make users feel satisfied, which are the cleanliness and neatness of the ITS library, and the completeness of the facilities that can be utilized by the users, both are considered pivotal factors.

**TABLE 12.** Comparison of research results on service quality, level of satisfaction, and loyalty of library users

| Year | Author | Location | Measuring instrument | Result |
|------|--------|----------|----------------------|--------|
| 2016 | Dessy Harisanty and Siti Khotijah | Universitas Airlangga, ITS, and UNESA. | LibQual Services Assessment | - ITS: 3.9691<br>- UNESA: 3.8260<br>- Universitas Airlangga: 3.6726 |
| 2016 | Sandra Yuni Wulandari and Wahyu Wibowo | ITS | customer satisfaction index (CSI) | The number obtained was 72.15%, which means that it can be concluded that overall ITS library visitors were satisfied with the services provided. |
| 2018 | Tanisa Putih Andansari | ITS, Universitas Airlangga, UNESA, and UPN. | LibQual Services Assessment | - ITS: 3.74<br>- Universitas Airlangga: 3.62<br>- UNESA: 3.53<br>- UPN: 3.27 |
| 2017 | Yani Kurnia Sukmawati | UK Petra and ITS | customer loyalty characteristics | - Average score of UK Petra and ITS: 3.74 |
| 2018 | Rifka Husrotus Saadah | UINSA | ServQual | - Quality of service: 3.56 |
| 2020 | Dyah Puspitasari Srirahayu | Universitas Airlangga, UNESA, UPN, ITS, and UINSA | LibQual$^{+ TM}$ Satisfaction and Loyalty | - Universitas Airlangga: 3.98<br>- UINSA: 3.9<br>- ITS: 3.73<br>- UPN: 3.7<br>- UNESA: 3.42 |

The research conducted by Andansari (2018) in ITS library also received the most superior score compared to the 3 other university libraries that were used as research locations, namely Universitas Airlangga, UNESA, and UPN. The excellence of ITS library can be seen from the dimensions of Library Environment with an average value of 3.93. Library Environment includes locations, facilities, and infrastructure that is considered to be very good by ITS library users. Based on research conducted by Sukmawati (2017) on the loyalty of library users conducted at UK Petra and ITS libraries, the results showed that UK Petra and ITS libraries gained an average

value of 3.74, which means that both libraries have highly loyal users. The high level of customer loyalty in the UK Petra and ITS library can be seen from the attractiveness and excellence aspects of the libraries compared to other competitors, which means that most respondents have demonstrated the excellence and attractiveness of the UK Petra and ITS libraries. While the latest findings of this research indicate that the user loyalty possessed by ITS library is included in the medium category with an average score of 3.56.

In the latest findings, Universitas Airlangga library got the most value compared to 4 other libraries. The advantages of Universitas Airlangga library can be seen from the average value of the library as place dimensions with an average value of 4.22, which means that the library users consider that the convenience of the library facilities as very well. Meanwhile, according to Harisanty (2016), Universitas Airlangga library got the lowest average score compared to 2 other libraries, namely ITS and UNESA. The study stated that the library information control of Universitas Airlangga library has a lower value than both libraries, which means that access and availability of information in the library is considered lower than the library of ITS and UNESA. Meanwhile, based on Andansari's research (2018), it is stated that the Universitas Airlangga library is still below ITS library with an average value difference of 0.12.

The next university library is UNESA. In her research, Harisanty (2016) stated that the UNESA library received an average grade superior in Universitas Airlangga library. The highest average value of the UNESA library of the study is in the library as place dimension, which is 3.9011, which means that the user considers that the comfort, cleanliness, and facilities owned by the UNESA library to be better than the other 2 dimensions. But in Andansari's research (2018) UNESA library was below Universitas Airlangga library with a value of 3.53.

Based on research conducted by Andansari (2018) in the UPN library, it was found that the UPN library got the lowest average value compared to the ITS, Universitas Airlangga, and UNESA libraries. The UPN library has a very low average value in the library service dimension, which is 2.98. From these data, it can be seen that UPN library users consider that the services obtained at UPN libraries are still not optimal. Thus, the library is expected to improve in terms of services and formulate ways to meet the information needs of its users. Whereas in the latest findings, it was found that the UPN library received an average grade that was superior to the UNESA library. UPN library has the advantage of average value in the library as place dimension, which means that UPN library users assess that the comfort of the place and the facilities available are more

maximal compared to the other 2 dimensions. The same thing was also found in Yuniarta (2015) research (2015) which showed that the lowest value was affect of service and comprehension collection, or information control, but the same results are also shown in this study. In addition to quality service, user satisfaction can be achieved through the utilization of email, databases, and library websites (Atanda, 2017).

Based on research conducted by Saadah (2018) on the effect of service quality on user satisfaction conducted at UINSA libraries, the results obtained was 3.56, which states that UINSA library user satisfaction is in the good category. The user considers that the quality of service is the best compared to the other 3 categories with the highest average value proving to be 3.89. The latest findings from this study state that UINSA library user satisfaction obtains a pretty high average score of 3.89, which means that users are satisfied with the services provided by UINSA library. Similarly, for the quality of service users, UINSA library has good service quality as evidenced by an average result of 3.9. The quality of service that is considered the best is in the library as place dimension, which means the UINSA library has provided the convenience of the place, facilities, as well as infrastructure to its users.

The development of information and communication technology that is increasingly sophisticated raises the number of sources of information that can be accessed easily and quickly. This causes the library, as a source of information for the public, to have competitors (Kiran & Diljit, 2011). Many research results show that users prefer the internet as the main and most preferred source of information from the library (Kumah, 2015; Alsarar, and Goultepe, 2017; Anindita, 2018; Yebowaah, 2017; Ranaweera, et.al., 2018). Google and the internet are considered as a source of macro information that displays far more information (Zimerman, 2012), while libraries are considered unable to provide information according to their needs (Rowlands, et.al, 2008) where according to Hannabus (2002), libraries will continue to co-exist with the internet. From this fact, the library must strive to maintain the declining loyalty of library users (Xu and Du, 2018).

From the results of the study, it can be concluded that the loyalty of users of state university libraries in Surabaya is influenced by the quality of service and user satisfaction, where user satisfaction contributes more to user loyalty. The results showed that the dimension of service quality that had the most influence was a library as place, this is in line with the research conducted

by Andara (2018) using the LSQA scale, where environmental factor obtained the highest value while the lowest was the use of information technology. Research conducted by Sukmawati (2017) towards the level of loyalty at university libraries in Surabaya shows that the level of loyalty in the ITS library is quite good, where in this study, the level of ITS library loyalty is moderate.

This study shows that, in addition to service quality and user satisfaction, there are other factors that affect user loyalty. User loyalty can be influenced by the image of the library (Nurahman, 2016) and marketing, especially the communication variables (Pratiwi, 2017). Space management, infrastructure, improving the collection of both print and non-print materials, the development of the quality of human resources and also increasing the use of information technology, can also be a factor in increasing the loyalty of library users (Tajedini et.al, 2020)

The results of this study show the same results as the one conducted by Hosseinikhah & Mirabolghasemi (2018), where the quality of services (services, information control and library as a place) has a significant effect on user satisfaction. Haruna, Kiran, & Tahira (2017) in their research showed that service quality and user satisfaction directly affect user loyalty, since satisfaction mediates the relationship between service quality and user loyalty.

The library today is not just a building, it is recognized as a culture as the result of the accumulation of various civilizations that produce metadata, OPAC, websites, and so on (Hudson, 2018). At present many libraries are labeled as 'bridges' to overcome the imbalance between digital and information classes; in the 4.0 revolution, the library is known to be able to overcome this social problem (Noh & Chang, 2020). Library managers must begin to consider library opening hours by considering the factors that have been mentioned in this study (Ravenwood, Walton, & Stephens, 2019). That way, the library will still stand at a comfortable place which provides good service.

## CONCLUSION

The quality of service in state university libraries has an average value of 3.75, meaning that the quality of service is classified as good. Of the three dimensions of service quality, library as place (3.94) has the highest score, followed by information control (3.70) and effect of service (3.62). Universitas Airlangga library has the highest value of service quality among other public university libraries. The level of satisfaction of state university library users is in the high category, with an average value of 3.68. Satisfaction towards the facilities in the library has the highest value, which is in line with the results of the user's assessment on the quality of library services, where the

library as place has the highest value. The same thing applies to the level of user satisfaction towards the performance of librarians, which has the lowest value. In the dimension of service quality, effect of service also has the lowest value. The high level of user satisfaction can be found in Universitas Airlangga library with a value of 3.97. The level of user loyalty is included in the medium category with an average value of 3.65. The reuse of the library as a source of information by users has a lower value (3.62) compared to recommending the library to others (3.68). Similar to the quality and level of satisfaction, Universitas Airlangga library users are more loyal, with a score of 3.85 (highest category).

From the results of the statistical test, it can be concluded that all proposed hypotheses are accepted, meaning that 1) Service quality has a significant effect on user satisfaction, with a contribution of 79.6%; 2) Service quality has a significant effect on user loyalty, with a contribution of 60.7%; 3) User satisfaction has a significant effect on loyalty, with a contribution of 23.8%; 4) Service quality has a significant effect on loyalty by mediating user satisfaction with a contribution of 19%. From these results it can be seen that the quality of service in the university library has a great influence in building user loyalty and user satisfaction. If user satisfaction increases, loyalty also increases. Thus, the library needs to continue to improve the quality of service, especially the effect of service and the quality of service by librarians. Librarians are expected to be more empathetic towards users and keep improving their knowledge.

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