MANAGEMENT | RESEARCH ARTICLE

Effects of service quality and customer satisfaction on loyalty of bank customers

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Abstract: Service quality and customer satisfaction are parts of factors that influence customer loyalty to bank services. Both are necessary to be fulfilled in order to gain customer loyalty, which in turn maintaining organization survival in the long term. This study aims to (1) examine how service quality influenced customer loyalty; (2) how customers’ satisfaction influenced their loyalty to the bank; and (3) examine simultaneous effects of service quality and customer satisfaction on customer loyalty. This study used a survey research design, and respondents were selected purposively from a population of Bank organization in Indonesia. Data were analyzed employing path analysis and One-Way Analysis of Variance. Results indicate that service quality did not have significant effects on customer loyalty, but it provided significant effects on customer satisfaction followed by influencing customer loyalty. Service quality had indirect effects on customer loyalty through customer satisfaction. Further studies are expected to examine the model of relationships with other variables.

Subjects: Personnel Selection, Assessment, and Human Resource Management; Business, Management and Accounting; Cultural Studies

Keywords: service quality; customer satisfaction; customer loyalty

1. Introduction
Quality banking management is necessary in order to achieve goals effectively and efficiently. In the era of global competition recently, organizations are required to be able to improve their

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PUBLIC INTEREST STATEMENT

Customer loyalty to Bank services should be maintained in order to make the Bank organization survive globally in the long term. Service quality and customer satisfaction are parts of the factors to be explored to find how they influence the customer loyalty. The two factors were found to influence the level of customer loyalty. However, this loyalty is gained through customer satisfaction first.

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performance through quality improvement. This can be done through fulfilling customer needs (Demirbag, Koh et al., 2006; Demirbag, Tatoglu et al., 2006; Imran et al., 2018; Jong et al., 2019; Sinha et al., 2016). The key to surviving in a global market is to focus on service quality for customers (Cristea & Mocuta, 2018).

Several previous studies have stated that there is a relationship between customer satisfaction and services provided by an organization (Anderson & Mittal, 2000; Brocato et al., 2012; Heinonen & Strandvik, 2015; Novokreshchenova et al., 2016; Schneider et al., 2005). Customer satisfaction is one of the factors that influences customer loyalty to organizations (Harazneh et al., 2020). While customer loyalty indirectly contributes to enhancing organizational performance (Ahmed Al-Maamari & Abdulrab, 2017). The issue of customer satisfaction is prominent to many organizations (Anderson & Mittal, 2000; Schneider et al., 2005; Smith et al., 1999). Organizations can claim success when customer satisfaction is attained.

Research related to service quality and customer satisfaction has been widely carried out in management studies for more than 30 years both in banking and education organizations (Chin Wei & Sri Ramalu, 2011). Research conducted by Shanka (2012), for example, found that there was a positive relationship between service quality and customer satisfaction in the banking sector. In this study, it was also found that customer satisfaction can lead to high commitment and loyalty to banking services. Customers will tend to be loyal if the bank is trustworthy, committed to service, reliable and efficient in communicating with customers, and is able to solve problems properly (Coelho & Henseler, 2012; Flint et al., 2011; Henning-Thurau et al., 2002; Mascarenhas et al., 2006; Ndubisi, 2007; Vivek et al., 2012). Based on further investigation, the service quality then affects customer loyalty (Binsar Kristian & Panjaitan, 2014). Such a finding supports results of previous studies that found employee loyalty is significantly related to service quality. This in turn influences customer satisfaction, loyalty, and finally leads to increasing profitability (Yee et al., 2010).

Other findings indicated that service quality affects customer loyalty and the level of employee relationship quality did not significantly influence customer loyalty (Nyadzayo & Khajehzadeh, 2016; Rauyruen & Miller, 2007). Trust, commitment, communication, and conflict handling are the variables that have significant effects and predict a high proportion of variance in customer loyalty (Ndubisi, 2007). The relationship between these variables shows that the effect of service quality on customer loyalty is tentative indefinite and remains controversial. Thus, it has to be tested in further studies. Service quality refers to the level of service quality provided by the organization to customers. Service quality leads to focused evaluation that describes customer perceptions of certain service dimensions. The service dimensions being tested consist of (1) tangibility such as property, buildings and employees; (2) reliability that means appropriate and consistent services; (3) responsiveness showing the spontaneous responses in providing services; (4) assurance or ability to build customers’ confidence; (5) empathy, being systematic, and reliable communication (2011, 1988).

Organizations need a capacity to get many customers in order to survive or exist. Excellent services, responding customers’ demands can directly increase satisfaction. This is an indicator of satisfaction level to the services’ quality. This can be measured by assessing their purchase and consumption experience on particular products, services, brands, and company name (Johnson, 2015).

Satisfied customers tell us about the quality of the organizations. On the other hand, unsatisfied customers remind the organizations to have low performance (Kotler, 2006). shows that there are several factors which potentially affect customer satisfaction upon the banking sector including good relations between banks and customers and trust. Loyal customers are those who use organizations’ services continuously. They show loyalty, commitment, and being proud of using the services. Customer loyalty can be measured based on these as indicators (Binsar Kristian & Panjaitan, 2014; Jiang & Zhang, 2016). Banking organizations must obtain customer loyalty to ensure their existence within a global market (Ayodele, 2016).
Customer loyalty fostered by organizations results in increased customer satisfaction. According to Ariff et al. (2013) ensuring that customers remain loyal, it must be ensured that they are satisfied with the provided services. This is supported by previous studies that customer satisfaction has a positive and significant effects on customer loyalty (Amin, 2016).

Customer satisfaction is able to increase customer loyalty in banking organizations (Shanka, 2012). Service quality and customer satisfaction are important antecedents of customer loyalty. While the customer satisfaction mediates effects of service quality on customer loyalty (Ngo & Nguyen, 2016).

It is predicted that service quality and customer satisfaction will have effects on customer loyalty as depicted by a theoretical model in Figure 1.

Compared to previous studies, the current research model is focused on relationships and effects of service quality and customer satisfaction on customer loyalty. The subjects of the study are the schools and bank organizations that have been involved in merging program. Meanwhile, a previous study explored how specified banks and school organisations merged their organizations.

Indicators of the survey instrument were developed from the research variables including service quality dimensions constructed of tangibility (5 items), reliability (4 items), responsiveness (3 items), assurance (3 items), and empathy (2 items). Dimensions of customer satisfaction consist of attitude (3 items), happiness (3 items), and customer satisfaction (4 items). Customer loyalty dimensions are developed based on variables: cognitive (4 items), affection (3 items), conative (3 items), and action (3 items).

Based on these studies and research is still open in the field of bank payments (Abdullah & Naved Khan, 2021), the researchers tested the proposed research model: (1) service quality and its effects on customer satisfaction; (2) customer satisfaction and its effects on customer loyalty; and (3) simultaneous effects of service quality and customer satisfaction on customer loyalty to banking services.

2. Method
This study uses a quantitative approach with a survey design. It is aimed to test the proposed theoretical model (Figure 1) exploring effects of service quality on customer satisfaction and customer loyalty. Population of this study are customers of banking services in Malang City and Surabaya City, East Java Province, Indonesia. Purposive random sampling technique was used to select the sample of customers whose positions as principals, teachers, and school administrative staff. Questionnaires were administered to these respondents. There were 1190 respondents who returned the questionnaire consisting of principals (78), teachers (1017), and school administrative staff (95). The figures of the sample were selected from a population of Malang City (276), Surabaya City (914), the biggest city in east java, Indonesia. The sample involved in this study was obtained from Malang Elementary School (60) and Surabaya Elementary School (48). As shown in Figure 1, gender of respondents consists of female (915) and male (275). In terms of education level, there were high school graduates (14), Diploma (42), S-1/ Undergraduate (974), S-2/Postgraduate (143), and S-3/Higher Degree graduates (7). Data were collected using a questionnaire. The developed items of the questionnaire are listed in the grid matrix in Table 1.
The scale of the instrument fulfilled the validity and reliability criteria with a validity loading value of 0.3932 indicating all items are valid. As for the reliability using Cronbach’s Alpha (α) obtained the value of 0.985 explaining the reliability criteria is fulfilled. Thus, it can be used as reliable scales to measure the research variables. Data were analyzed using path analysis and One-Way Analysis of Variance (ANOVA), assisted by statistical software as well as IBM SPSS Statistics 26 and AMOS 24 versions.

3. Results

3.1. Effects of service quality and customer satisfaction on customer loyalty
The null hypothesis of the model set is “There is no difference between the model and the data used in the field” (H₀). If the value of chi-square/DF < 5 (Wheaton et al., 1977), then H₀ is not rejected. This means that there is no difference between the model formed and the data used in the field. In addition to the chi-square/DF value because the research sample is large, in determining whether the model is fit or not the data needs to be accompanied by other indices of accuracy, including CFI (Comparative Fit Index); TLI (Tucker-Lewis Index); PCFI ( Parsimony Comparative Fit Index); and RMSEA (Root Mean Square of Error Approximation); so that even though based on chi-square/DF H₀ is rejected, the model is still considered appropriate if other criteria meet. The criteria for drawing conclusions for each index are presented in Table 2.

3.2. Final model with measurement error
The final model of the effect of service quality and customer satisfaction on customer loyalty is presented in Figure 2. Referring to this figure, it is known that the value on the path of service quality to customer satisfaction is 0.96; the value on the path of customer satisfaction to customer loyalty is 1.14; and the value on the path of service quality to customer loyalty of −0.26.

Based on measurements of direct, indirect, and total effects, it can be seen that the one that has a direct effect on customer satisfaction is service quality (the largest value is 0.957 rounded to 0.96) and the one that has a direct effect on customer loyalty is customer satisfaction (the largest value is 1,140 rounded to 1.14). Meanwhile, the direct effect of service quality on customer loyalty is negative or minus, so it can be stated that service quality has no direct effect on customer loyalty (the largest value is 1.091). More details, can be seen in Table 3.

Ideally, based on these measurement results, if you want to increase customer satisfaction, you need good service quality as well. For example, by providing excellent service, completing existing facilities, responding to customer complaints quickly, and so on. Likewise with increased customer loyalty which can be pursued by increasing customer satisfaction. Overall, from the final model it can be concluded that service quality has a positive and significant impact on customer satisfaction; customer satisfaction has a positive and significant effect on customer loyalty; and service quality does not have a positive and significant effect on customer loyalty. This statement is supported by the measurement results of the Regression Weight (can be seen in Appendix 1) and Standardized Regression Weight (can be seen in Attachment 2).

Referring to the Regression Weight table in Appendix 1, it is known that the indicators that form latent variables can be said to be significant (Unpaired symbol: *) seems to be missing with a CR that is higher than the t table (t ≥ 2.021 at 0.05 probability). For example, on the QServ □ SQ12 line the value CR is 11.733 with a probability ≤0.001, so it can be said that the SQ12 indicator is significant in forming the service quality variable. It is the same for the Csatisfy ➔ CS12 and Cloyal ➔ CL12 lines. The CR values obtained are 38.884 and 36.376, respectively, with a probability of ≤0.001, so that it can be stated that the CS12 indicator is significant in forming the customer satisfaction variable, as well as the CL12 indicator is significant in forming the customer loyalty variable.

The Standardized Regression Weight table in Appendix 2 shows the level of influence of the predictor variable on the criterion variable, with the following conditions. The simple rule is that if the estimated value does not show a negative sign, then the relationship between variables is positive. For example,
Table 1. Research instrument grid

| Variable          | Indicator           | Item                                                      | Symbol |
|-------------------|---------------------|-----------------------------------------------------------|--------|
| Service quality   | 1. Tangibility      | a. Completeness of property                               | SQ11   |
|                   |                     | b. The grandeur of the building                           | SQ13   |
|                   |                     | c. Employee appearance                                    | SQ15   |
|                   | 2. Reliability      | a. Service accuracy                                       | SQ21   |
|                   |                     | b. Consistency of service                                 | SQ23   |
|                   |                     | a. The accuracy of service information                    | SQ24   |
|                   | 3. Responsiveness   | a. Response speed in responding                           | SQ31   |
|                   |                     | b. Ethics in service                                      | SQ32   |
|                   |                     | c. Simplicity/ease of service                             | SQ33   |
|                   | 4. Assurance        | a. Giving customer trust                                 | SQ41   |
|                   |                     | a. Ability to provide warranty                            | SQ42   |
|                   |                     | c. Providing security to customers                        | SQ43   |
|                   | 5. Empathy          | a. Concern                                                 | SQ51   |
|                   |                     | b. Individual attention to customers.                     | SQ52   |
| Customer satisfaction | 1. Customer attitude | a. customer attitude towards the product                  | CS11   |
|                   |                     | b. customer attitudes towards the organization’s brand    | CS12   |
|                   |                     | c. Attitudes of customers to organizational service       | CS13   |
|                   | 2. Customer happiness | a. security services                                     | CS21   |
|                   |                     | b. Reassuring service                                     | CS22   |
|                   |                     | c. Pleasant service                                       | CS23   |
|                   | 3. Customer Satisfaction | a. Service stability                                   | CS31   |
|                   |                     | b. Harmonious relationship                                | CS32   |
|                   |                     | c. Trust in each other                                    | CS33   |
|                   |                     | d. Communication in service                               | CS34   |
| Customer loyalty  | 1. Cognitive Loyalty | a. Rational to the organization                           | CL11   |
|                   |                     | b. Rating is better than others                           | CL12   |
|                   |                     | c. The frequency increases                                | CL13   |
|                   |                     | d. Long time                                              | CL14   |
|                   | 2. Affective Loyalty | a. Pride in being a customer                              | CL21   |
|                   |                     | b. Commitment to the organization                         | CL22   |

(Continued)
on the QServ ➔ CSatisfy line, the value is 0.957, which means that the relationship between service quality variables and customer satisfaction is positive and has a strong influence. Unlike in the case with QServ ➔ CLoyal which resulted in a value of −0.257. That is, the relationship between the variable service quality and customer loyalty can be said to be negative or if it is based on the level of strength, it can be stated that there is a weak influence of service quality on customer loyalty.

**Table 1. (Continued)**

| Variable       | Indicator | Item                                                                 | Symbol |
|----------------|-----------|----------------------------------------------------------------------|--------|
| a. Feeling of belonging to an organization |           |                                                                      | CL23   |
| 3. Conative Loyalty | a. Keep abreast of organizational developments |                                      | CL31   |
| b. Willing a lot for the organization |                   |                                                                      | CL32   |
| c. Wish you success in joining the organization |             |                                                                      | CL33   |
| 4. Action Loyalty | a. Increased frequency of participating in organizational activities |                            | CL41   |
| b. Has a long time for organization |              |                                                                      | CL42   |
| a. Demonstrate self-success to the organization. |                  |                                                                      | CL43   |

**Figure 2.** Final model the influence of service quality and customer satisfaction on customer loyalty with measurement error.
Although the estimation of latent factor loading and indicators (as presented in Appendix 1) shows significance, accuracy of the model and the data still needs to be checked. In this analysis several indicators are used as summarized in Table 4.

### Table 2. Criteria for data interpretation

| Index | Criteria | Conclusion |
|-------|----------|------------|
| CFI (McDonald & Marsh, 1990) | 0–1 | Poor to Good fit |
| TLI (Bentler & Bonett, 1980) | 0–1 | Poor to Good fit |
| PCFI (James et al., 1982) | >0.06 | Good fit |
| RMSEA (Browne & Cudeck, 1993) | ≤0.05 | Close fit |
| | 0.05 ≥ RMSEA ≤ 0.08 | Good fit |

4. Discussion

Based on results of the analysis, it is evident that there is no direct effects of service quality on customer loyalty; (2) service quality had direct effects on customer satisfaction, (3) customer satisfaction provides significant direct effects on customer loyalty to the bank services; and (3) while service quality only provides indirect effects on customer loyalty through the customer satisfaction experienced by customers. The findings then contributed to answering differences and controversial conclusions in previous research that service quality influenced customer loyalty (Binsar Kristian & Panjaitan, 2014; Harazneh et al., 2020; Yee et al., 2010).

The results of this study indicate that it has supported previous research which states that service quality has no effect on customer loyalty, but through customer satisfaction as an intermediary. In other words, service quality does not have a direct effect on customer loyalty, where

### Table 3. Measurement of the final model direct, indirect, and total effect

| Standardized Direct Effects | QServ | CSatisfy | CLoyal |
|-----------------------------|-------|----------|--------|
| QServ                       | .957  | .000     | .000   |
| CSatisfy                    | .257  | 1.140    | .000   |

| Standardized Indirect Effects | QServ | CSatisfy | CLoyal |
|-------------------------------|-------|----------|--------|
| QServ                         | .000  | .000     | .000   |
| CSatisfy                      | 1.091 | .000     | .000   |

| Standardized Total Effects | QServ | CSatisfy | CLoyal |
|---------------------------|-------|----------|--------|
| QServ                     | .957  | .000     | .000   |
| CSatisfy                  | .834  | 1.140    | .000   |

Source: Research data, processed.

Information

QServ: Quality service
CSatisfy: Customer satisfaction
CLoyal: Customer loyalty
previous research was conducted in various fields, such as industry, culinary, internet, and aviation. Likewise, with service quality which has a direct effect on customer satisfaction, and customer satisfaction has a direct effect on customer loyalty (Amin, 2016; Hapsari et al., 2017; Kasiri et al., 2017; Kuo et al., 2011; Pakurár et al., 2019; Ribbink et al., 2004; Siddiqi, 2011).

The results of research, which states that there is a direct effect of service quality on customer loyalty, automatically suggests an increase in service quality to increase customer satisfaction as well as customer loyalty. In general, increasing service quality begins with building internal loyalty or employee loyalty first. Allegedly, by creating internal loyalty, employees can improve their service to customers, so that customers are satisfied and will be loyal to the industry or service provider (Indimas & Fachira, 2017; Yee et al., 2010) and also religious aspects (Alsaad et al., 2020).

In contrast to the results, which state the opposite, increased customer loyalty is done separately from improving the service quality. Increasing service quality is carried out to increase customer satisfaction; then, customer satisfaction is increased to increase customer loyalty. In other words, customers who are satisfied with the service will not necessarily be loyal. However, loyal customers are certainly satisfied with the services provided. Regarding the measurement dimensions used in the three variables, both service quality, customer satisfaction, and customer loyalty, the indicators in it are significant to form each of the dimensions of these variables. As for the model being tested, although the dimensions of the customer satisfaction variable indicate poor fit (as explained above), the dimensions of the service quality and customer loyalty variables indicate a good fit model, which means that there is a match between the models built and the data used in the field.

Points that need to be underlined are the dimensions of service quality variables, which include tangibility, reliability, responsiveness, assurance, and empathy, as stated by Parasuraman et al. (1988). In this study, four dimensions are made, where for the empathy dimension, the indicators composing it are combined with the dimensions of assurance and responsiveness. This is done to anticipate the occurrence of unidentified variables in path analysis. Apart from that, it is known that the four dimensions represent

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Table 4: Fit model summary

| Model               | NPAR | CMIN      | DF  | P  | CMIN/DF |
|---------------------|------|-----------|-----|----|---------|
| Default model       | 123  | 5983.656  | 737 | .000 | 8.119   |
| Saturated model     | 860  | .000      | 0   |    |         |
| Independence model  | 40   | 56,300.159| 820 | .000 | 68.659  |

**Baseline Comparisons**

| Model               | NFI Delta1 | RFI rho1 | IFI Delta2 | TLI rho2 | CFI  |
|---------------------|------------|----------|------------|----------|------|
| Default model       | .894       | .882     | .906       | .895     | .905 |
| Saturated model     | 1.000      | 1.000    |            |          | 1.000|
| Independence model  | .000       | .000     | .000       | .000     | .000 |

**Parsimony-Adjusted Measures**

| Model               | PRATIO | PNFI | PCFI |
|---------------------|--------|------|------|
| Default model       | .899   | .803 | .814 |
| Saturated model     | .000   | .000 | .000 |
| Independence model  | 1.000  | .000 | .000 |

**RMSEA**

| Model               | RMSEA | LO 90 | HI 90 | PCLOSE |
|---------------------|-------|-------|-------|--------|
| Default model       | .075  | .073  | .077  | .000   |
| Independence model  | .231  | .229  | .233  | .000   |
and are significant in shaping the service quality variable. As seen in the results of model testing for service quality variables, both correlation, and hierarchy, it shows that the model is in the good fit category, and the overall indicators that compose it are declared significant. This means that there is no difference between the model and the data used for field observations. In line with the results of research conducted by Ghotbabadi et al. (2015) concluded that, in general, the hierarchical model is the most suitable model to measure customer perceptions regarding service quality.

Although service quality has many versions apart from the five dimensions previously mentioned, these five dimensions are deemed suitable for application in the banking industry (Siddiqi, 2011; Sureshchandar et al., 2002). Khan and Fasih (2014) stated that all dimensions in service quality are shown to be significantly correlated with customer satisfaction. However, from the five dimensions, those that have a significant effect on customer satisfaction are tangibility, assurance, and empathy. As for the other two dimensions, namely reliability, and responsiveness, it is known that they are not significant (Indimas & Fachira, 2017). In contrast to the research results, Kant and Jaiswal (2017) stated that the responsiveness dimension has the strongest influence on customer satisfaction. This statement is supported by Shankha (2012), it is not only responsiveness that has the most significant effect (the highest significant value), but also the empathy dimension, followed by tangibility, assurance, then reliability.

Based on this description, it can be concluded that customers will tend to increase their satisfaction if the five dimensions of service quality are also enhanced by the banking industry. Customer satisfaction in some literature is caused by (1) a good relationship between the bank and customers, (2) the growth of trust between the bank and the customer, (3) the physical appearance of employees, (4) customer access to the bank, and (5) services rendered (Bhat et al., 2018; Ozatoc et al., 2016; Yilmaz et al., 2018). Paul et al. (2016) in detail states, in the private banking sector, the factors that are proven to be related to overall customer satisfaction include (1) understanding of product, (2) response to customers’ needs, (3) fast service, (4) providing solutions to customers’ problems, (5) connecting with the right person or according to customers’ needs, and (6) banking efforts to reduce queue duration.

Meanwhile, in the public bank sector, it is known that only two factors determine customer satisfaction, specifically the understanding of the banking sector towards bank products and fast service.

As previously stated, customer satisfaction becomes a mediator in the influence of service quality on customer loyalty. On the other hand, customer satisfaction is considered to have a positive and significant impact on customer loyalty (Amin, 2016; Hapsari et al., 2017; Kasiri et al., 2017; Kuo et al., 2011; Pakurár et al., 2019; Ribbink et al., 2004; Siddiqi, 2011). The results of research conducted by Tabrani et al. (2018), the commitment and intimacy built by the bank with customers are proven to have a significant effect on customer loyalty. Added by Bhat et al. (2018) Customer trust, satisfaction, and commitment are known to have a significant effect on customer loyalty.

Regarding the perception of the three variables in this study based on gender, it was concluded that there were no differences in perceptions of service quality, customer satisfaction, and customer loyalty among male and female respondents. However, when viewed from the mean plot, it is known that men have a higher average than women regarding the perception of customer loyalty. As for the perception of service quality and customer satisfaction, the mean plots of this study indicate that the average woman is higher than that of men. Inversely proportional to the results of this study, previous research conducted by Vanniarajon and Manimaran (2008) that male customers earn a higher average than females regarding the perception of service quality. In more detail, male customers give high urgency scores on the dimensions of reliability, effectiveness, and assurance. Meanwhile, female customers emphasize service quality on the aspects of price and convenience. Added by Zalatar (2012) states that there is a difference in the percentage of the urgency of the five dimensions that make up service quality, where men are known to give the highest importance score on the reliability dimension, while women give the highest importance score on the empathy dimension.
When viewed in terms of work (position), latest education level, and age, the results of this study indicate that there are differences in perceptions regarding service quality, customer satisfaction and customer loyalty based on these variances. This statement is confirmed by the existing mean plots, where from the mean plots it is known that (1) respondents with the position of principal have a higher perception than the position of School Administrative Personnel; (2) respondents with a higher education level are proven to have a higher perception than those with secondary education; and (3) young respondents tend to have higher perceptions than older ones. This is in line with research conducted by Murari (2018) shows that there are significant differences by occupation, last education, and age, especially in the urgency of responsiveness and assurance, likewise, with the speed of tangibility. As for differences based on gender, it is known that they are significant to the urgency of the empathy and assurance dimensions.

This research needs to be continued with different themes to fill the existing gaps. Several themes that need further research are to examine the variable of human resources commitment, strength of the relationship between the bank service quality and customers, trust, and customer commitment to customer loyalty, e-commerce, business and managerial in global organizations (Alsaad et al., 2021).

5. Conclusion
Various researches have been implemented to examine the relations between service quality, customer satisfaction, and its effects on customer loyalty. However, the findings are still confusing for most researchers addressing unpredictable factors could influence the relationships among the research variables as well as service quality effects on customer loyalty, and how other variables that are assumed moderating each impacts on customer satisfaction and customer loyalty. This research adds to the theory, and contribute to the development school and bank organizations in implementing merging programs. Specifically, the findings provide valuable measures on how school and bank organization leaders or managers enhance organization performance, empower their members effectively through providing them with high job satisfaction, and increased loyalty to their jobs. Therefore, this research was generated and resulted in the following conclusions. First, service quality influenced customer satisfaction. Second, customer satisfaction results in increased customer loyalty. Third, service quality has no direct effects on customer loyalty. Based on these conclusions, the researchers provide recommendations (1) the bank management needs to focus more on maximum service quality so that customer satisfaction is always maintained and customer loyalty can be increased; and (2) other researchers can launch further research to examine the commitment, strength of the relationship between the bank service quality and customers, trust, and customer commitment to customer loyalty, e-commerce, business and managerial in global organizations, and its impacts on the banking profitability.

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References
Abdulrah, F., Suhaimi, R., Saban, G., & Hamali, J. (2011). Bank Service Quality (BSQ) Index: An indicator of service performance. International Journal of Quality and Reliability Management, 28(5), 542–555. https://doi.org/10.1108/02656711111132571
Abdullah, & Naved Khan, M. (2021). Determining Mobile Payment Adoption: A Systematic Literature Search and Bibliometric Analysis. Cogent Business & Management, 8(1), 1892345. https://doi.org/10.1080/23311975.2021.1893245.
Ahmed Al-Maamari, Q., & Abdulrah, M. (2017). Factors affecting on customer loyalty in service
organizations. International Journal of Energy Policy and Management, 5, 25-312. http://www.aascit.org/journal/archive?journalid=895&paperid=6070

Alamgir, M., & Shamsuddoha, M. (2004). Service quality dimensions: A conceptual analysis. Chittagong Mohammad Shamsuddoha Assistant Professor of Marketing University of Chittagong. Journal of Business Administration, 19 (May). 19, 111. https://ssrn.com/abstract=1320144

Alsaaad, A., Saif-Alyousfi, A. Y. H., & Elrehail, H. (2021). Understanding the global diffusion of B2B E-commerce (B2B EC): An integrated model. Journal of Information Technology, 32, 686-2096139. https://doi.org/10.17777/02683962096139

Amin, M. (2016). Internet banking service quality and its implication on e-customer satisfaction and e-customer loyalty. International Journal of Bank Marketing, 34(3), 280-306. https://doi.org/10.1108/IJBM-10-2014-0139

Anderson, E. W., & Mittal, V. (2000). Strengthening the satisfaction-profit chain. Journal of Service Research, 3(2), 107–120. https://doi.org/10.1177/10946705002001

Ariff, M. S. M., Yun, L. D., Zakuan, N., & Ismail, K. (2013). The impacts of service quality and customer satisfaction on customer loyalty in internet banking. Procedia - Social and Behavioral Sciences, 81, 469–473. https://doi.org/10.1016/j.sbspro.2013.06.462

Ayodele, A. A. (2016). Predictive Indicators of Customer Loyalty in the Nigerian GSM Market. British Journal of Marketing Studies, 4(7), 15–32. https://www.researchgate.net/publication/3235544811

Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. Psychological Bulletin, 88(3), 588–606. https://doi.org/10.1037/0033-2909.88.3.588

Bhat, S. A., Darzi, M. A., & Parrey, S. H. (2018). Antecedents of customer loyalty in Banking sector: A meditational study. Vikalpa: The Journal for Decision Makers, 43(2), 92–105. https://doi.org/10.1177/0256090918774697

Bisnar Kristian, P., F. A., & Panjaitan, H. (2014). Analysis of customer loyalty through total quality service, customer relationship management and customer satisfaction. International Journal of Evaluation and Research in Education (IJERE), 3(3), 142-151. https://doi.org/10.11591/ijere.v3i3.6191

Brocato, E. D., Voorhees, C. M., & Baker, J. (2012). Understanding the influence of cues from other customers in the service experience: A scale development and validation. Journal of Retailing, 88(3), 384–398. https://doi.org/10.1016/j.jretai.2012.01.006

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. Bollen KA, Long JS, eds. Testing structural equation models. Sociological Methods & Research, SAGE Publications Inc. 136–162. https://doi.org/10.1177/004912419301200105

Chin Wei, C., & Sri Ramulu, S. (2011). Students satisfaction towards the University: Does service quality matters? International Journal of Education, 3(2), 1-15. https://doi.org/10.5296/ijoe.v3i2.1065

Coelho, P. S., & Henseler, J. (2012). Creating customer loyalty through service customization. European Journal of Marketing, 46(3/4), 331–356. https://doi.org/10.1108/03090561211202503

Cristea, I. G., & Mocuta, D. (2018). Customer relationship management. Proceedings of the 31st International Business Information Management Association Conference, IBIMA 2018: Innovation Management and Education Excellence through Vision 2020.Milan, Italy. https://doi.org/10.33619/2416-2948/5121

Demirbag, M., Tatoglu, E., Tekinkus, M., Zaim, S., & Ketikidis, P. H. (2006). An analysis of the relationship between TQM implementation and organizational performance: Evidence from Turkish SMEs. Journal of Manufacturing Technology Management, 17(6), 829–847. https://doi.org/10.1108/17410380610678828

Flint, D. J., Blocker, C. P., & Boutin, P. J. (2011). Customer value anticipation, customer satisfaction and loyalty: An empirical examination. Industrial Marketing Management, 40(2), 219–230. https://doi.org/10.1016/j.indmarman.2010.06.034

Ghotabadi, A. R., Feiz, S., & Baharoun, R. (2015). Service quality measurements: A review. International Journal of Academic Research in Business and Social Sciences, 16, 267–286. https://doi.org/10.6007/IJARSS/v5-i2/121484

Hapsari, R., Clermes, M. D., & Dean, D. (2017). The impact of service quality, customer engagement and selected marketing constructs on airline passenger loyalty. International Journal of Quality and Service Sciences, 9 (1), 21–40. https://doi.org/10.1108/IJSQS-07-2016-0048

Harazneh, I., Adaleh, M. J., Tbielita, A., Afoneh, S., Khanfar, S., Harasis, A. A., & Elrehail, H. (2020). The impact of quality of services and satisfaction on customer loyalty: The moderate role of switching costs. Management Science Letters, 10, 8. https://doi.org/10.1051/m2l/2019.12.034

Heinonen, K., & Strandvik, T. (2015). Customer-dominant logic: Foundations and implications. Journal of Services Marketing, 29(6/7), 472–484. https://doi.org/10.1108/JSM-02-2015-0096

Hennig-Thurau, T., Gwinner, K. P., & Gremler, D. D. (2002). Understanding relational marketing outcomes: An integration of relational benefits and relationship quality. Journal of Service Research, 4(3), 230–247. https://doi.org/10.1177/1094670502004003006

Imran, M., Abdul Hamid, S. N. B., & Aziz, A. B. (2018). The influence of TQM on export performance of SMEs: Empirical evidence from manufacturing sector in Pakistan using PLS-SEM. Management Science Letters, 1 (1), 483-496. https://doi.org/10.5267/f.mssl2018.3.003

Indimas, S., & Fachiro, I. (2017). Customer loyalty: The effects of service loyalty and the mediating role of customer satisfaction study case: Pt sabda almar hotel. Journal of Business and Management, 6(2), 250–261. https://ijmkinh.unila.ac.id/index.php/jom/article/viewFile/2158/1130

James, L. R., Mulai, S. A., & Brett, J. M. (1982). Causal analysis: Assumptions, models, data SAGE Publications. https://www.scholars.northwestern.edu/en/publications/causal-analysis-assumptions-models-and-data

Jiang, H., & Zhang, Y. (2016). An investigation of service quality, customer satisfaction and loyalty in Chinas airline market. Journal of Air Transport Management, 57, 80–88. https://doi.org/10.1016/j.jairtraman.2016.07.008

Johnson, M. D. (2015). Customer satisfaction. In International encyclopedia of the social & behavioral sciences (Second). 630-632. Elsevier Ltd. https://doi.org/10.1016/B978-0-08-097086-8.73025-X

Jong, C.-Y., Sim, A. K. S., Lew, T. Y., & Nonino, F. (2019). The relationship between TQM and project performance:
Empirical evidence from Malaysian construction industry. *Cogent Business & Management, 6*(1), 1568655. https://doi.org/10.1080/23311975.2019.1568655

Kant, R., & Jaiswal, D. (2017). The impact of perceived service quality dimensions on customer satisfaction. *International Journal of Bank Marketing, 35*(3), 411-430. https://doi.org/10.1108/IJBM-04-2016-0051

Kasirin, L. A., Guan Cheng, K. T., Sambasivan, M., & Sidin, S. M. (2017). Integration of standardization and customization: Impact on service quality, customer satisfaction, and loyalty. *Journal of Retailing and Consumer Services, 35*, 91-97. https://doi.org/10.1016/j.jretconser.2016.11.007

Khan, M., & Fasih, M. (2014). Impact of service quality on customer satisfaction and customer loyalty: Evidence from banking sector. *Pakistan Journal of Commerce and Social Sciences (PJCSS), 2*, 333-354. http://www.jspks.net/publications/180.pdf

Kotler, P. (2006). *Marketing management* (11th ed.). Pearson Education.

Kuo, N. T., Chang, K. C., Cheng, Y. S., & Loi, C. H. (2011). The impact of service quality, customer satisfaction and loyalty in the restaurant industry: A multiple-item scale measuring consumer perceptions of service quality. *Journal of Retailing, 6*(41), 12-40. https://doi.org/10.1016/S0068-2963(99)00084-3

Paul, J., Mittal, A., & Srivastav, G. (2016). Impact of service quality on customer satisfaction in private and public sector banks. *International Journal of Bank Marketing*, 34(5), 606-622. https://doi.org/10.1108/IJBM-03-2015-0030

Rauyruen, P., & Miller, K. E. (2007). Relationship quality as a predictor of B2B customer loyalty. *Journal of Business Research, 60*(1), 21-31. https://doi.org/10.1016/j.jbusres.2005.11.006

Ribbink, D., Van Riel, A. C. R., Lijander, V., & Streukens, S. (2006). Confront your online customer: Quality, trust and loyalty on the internet. *Managing Service Quality: An International Journal, 14*(6), 446-456. https://doi.org/10.1108/09604520410569784

Schneider, B., Ehnhart, M. G., Mayer, D. M., Saltz, J. L., & Niles-Jolly, K. (2006). Understanding loyalty: A customer link study: Moderating effect in link settings. *Academy of Management Journal, 48*(6), 1017-1032. https://doi.org/10.5465/amj.2005.19573107

Shanka, M. S. (2012). Bank service quality, customer satisfaction and loyalty in Ethiopian banking sector. *Journal of Business Administration and Management Sciences Research, 1*(1), 1-9. [http://www.apexjournal.org/JBAMSR](http://www.apexjournal.org/JBAMSR) ©2012 Apex Journal.

Siddiqi, K. O. (2011). Interrelations between service quality attributes, customer satisfaction and customer loyalty in the retail banking sector in Bangladesh. *International Journal of Business and Management, 6*(3), 12-36. https://doi.org/10.5539/jbm.v6n3p12

Sinha, N., Garg, A. K., & Dhall, N. (2016). Effect of TQM principles on performance of Indian SMEs: The case of automotive supply chain. The *TQM Journal, 28*(3), 338-359. https://doi.org/10.1108/TQM-10-2014-0086

Smith, A. K., Bolton, R. N., & Wagner, J. (1999). A model of customer satisfaction with service encounters involving failure and recovery. *Journal of Marketing Research, 36*(3), 356-372. https://doi.org/10.1177/002224379903600305

Sureshchandar, G. S., Rajendran, C., & Anantharaman, R. N. (2002). The relationship between service quality and customer satisfaction – A factor specific approach. *Journal of Services Marketing, 16*(4), 363-379. https://doi.org/10.1108/08876040210433248

Tabrani, M., Amin, M., & Nizam, A. (2018). Trust, commitment, customer intimacy and customer loyalty in Islamic banking relationships. *International Journal of Bank Marketing, 36*(5), 823-848. https://doi.org/10.1108/IJBM-03-2017-0054

Vanniarajan, T., & Manimaran, S. (2008). Managing service quality in commercial banks: a gender focus. *Asia Pacific Business Review, 6*(2), 51-63. https://doi.org/10.1177/1354857X0800400207

Vivek, S. D., Beatty, S. E., & Morgan, R. M. (2012). Customer engagement: Exploring customer relationships beyond purchase. *Journal of Marketing Theory and Practice, 20*(2), 127-145. https://doi.org/10.2753/MTP1069-6679200201

Wheaton, B., Muthen, B., Alwin, D. F., & Summers, G. F. (1977). Some methodological and measurement properties of the SES. *Sociological Methodology, 8*(3), 84. https://doi.org/10.2307/270754

Yee, R. W. Y., Yeung, A. C. L., & Edwin Cheng, T. C. (2010). An empirical study of employee loyalty, service quality
and firm performance in the service industry. *International Journal of Production Economics*, 124(1), 109–120. https://doi.org/10.1016/j.ijpe.2009.10.015

Yılmaz, V., Ari, E., & Gürbüz, H. (2018). Investigating the relationship between service quality dimensions, customer satisfaction and loyalty in Turkish banking sector: An application of structural equation model. *International Journal of Bank Marketing*, 36(3), 423-440. https://doi.org/10.1108/IJBM-02-2017-0037

Zalatar, W. F. (2012). Quantifying customers’ gender effects on service quality perceptions of philippine commercial banks. *Procedia - Social and Behavioral Sciences*, 57, 268-274. https://doi.org/10.1016/j.sbspro.2012.09.1185
Appendix 1. Weight regression model for path analysis with error measurement

| Label | From | To         | Estimate | S.E. | C.R. | P   | Label |
|-------|------|------------|----------|------|------|-----|-------|
| CSatisfy | <---- | QServ     | 5.426    | .454 | 11.952 | *** | par_40 |
| CLooyal | <---- | QServ     | -1.471   | .409 | -3.599 | *** | par_38 |
| CLooyal | <---- | CSatisfy  | 1.149    | .075 | 15.263 | *** | par_39 |
| SQ11   | <---- | QServ     | 5.217    | .454 | 11.733 | *** | par_1  |
| SQ12   | <---- | QServ     | 5.185    | .439 | 11.803 | *** | par_2  |
| SQ14   | <---- | QServ     | 5.274    | .447 | 11.798 | *** | par_3  |
| SQ15   | <---- | QServ     | 5.422    | .454 | 11.933 | *** | par_4  |
| SQ21   | <---- | QServ     | 5.765    | .480 | 11.998 | *** | par_5  |
| SQ22   | <---- | QServ     | 5.897    | .488 | 12.088 | *** | par_6  |
| SQ23   | <---- | QServ     | 5.982    | .494 | 12.107 | *** | par_7  |
| SQ24   | <---- | QServ     | 5.870    | .485 | 12.112 | *** | par_8  |
| SQ31   | <---- | QServ     | 5.949    | .497 | 11.966 | *** | par_9  |
| SQ32   | <---- | QServ     | 6.032    | .500 | 12.064 | *** | par_10 |
| SQ33   | <---- | QServ     | 5.979    | .495 | 12.081 | *** | par_11 |
| SQ41   | <---- | QServ     | 6.033    | .498 | 12.114 | *** | par_12 |
| SQ42   | <---- | QServ     | 5.963    | .491 | 12.137 | *** | par_13 |
| SQ43   | <---- | QServ     | 6.043    | .499 | 12.098 | *** | par_14 |
| SQ51   | <---- | QServ     | 5.852    | .487 | 12.011 | *** | par_15 |
| SQ52   | <---- | QServ     | 2.750    | .268 | 10.247 | *** | par_16 |
| CS11   | <---- | CSatisfy  | 1.000    |      |     |     |       |
| CS12   | <---- | CSatisfy  | 1.014    | .026 | 38.884 | *** | par_17 |
| CS13   | <---- | CSatisfy  | 1.049    | .026 | 39.778 | *** | par_18 |
| CS21   | <---- | CSatisfy  | 1.065    | .024 | 43.606 | *** | par_19 |
| CS22   | <---- | CSatisfy  | 1.031    | .025 | 40.766 | *** | par_20 |
| CS23   | <---- | CSatisfy  | 1.048    | .024 | 43.822 | *** | par_21 |
| CS31   | <---- | CSatisfy  | 1.054    | .024 | 43.529 | *** | par_22 |
| CS32   | <---- | CSatisfy  | 1.029    | .026 | 40.084 | *** | par_23 |
| CS33   | <---- | CSatisfy  | 1.047    | .027 | 38.823 | *** | par_24 |
| CS34   | <---- | CSatisfy  | 1.054    | .026 | 39.966 | *** | par_25 |
| CL11   | <---- | CLooyal   | 1.000    |      |     |     |       |
| CL12   | <---- | CLooyal   | 1.050    | .029 | 36.376 | *** | par_26 |
| CL13   | <---- | CLooyal   | 1.046    | .029 | 35.547 | *** | par_27 |
| CL14   | <---- | CLooyal   | 1.042    | .026 | 39.833 | *** | par_28 |
| CL21   | <---- | CLooyal   | 1.058    | .028 | 37.433 | *** | par_29 |
| CL22   | <---- | CLooyal   | 1.099    | .027 | 40.914 | *** | par_30 |
| CL23   | <---- | CLooyal   | 1.106    | .029 | 37.608 | *** | par_31 |
| CL31   | <---- | CLooyal   | 1.070    | .030 | 35.146 | *** | par_32 |
| CL32   | <---- | CLooyal   | 1.041    | .029 | 35.565 | *** | par_33 |
| CL33   | <---- | CLooyal   | 1.056    | .031 | 33.952 | *** | par_34 |
| CL41   | <---- | CLooyal   | 1.042    | .041 | 25.172 | *** | par_35 |
| CL42   | <---- | CLooyal   | 1.067    | .039 | 27.620 | *** | par_36 |
| CL43   | <---- | CLooyal   | 1.054    | .040 | 26.431 | *** | par_37 |
## Appendix 2. Standardized regression weight final model with error measurement

|        |        | Estimate |
|--------|--------|----------|
| CSat   | QServ  | .957     |
| CLo    | QServ  | -.257    |
| CLo    | CSat   | 1.140    |
| SQ11   | QServ  | .339     |
| SQ12   | QServ  | .752     |
| SQ13   | QServ  | .774     |
| SQ14   | QServ  | .773     |
| SQ15   | QServ  | .820     |
| SQ21   | QServ  | .846     |
| SQ22   | QServ  | .885     |
| SQ23   | QServ  | .894     |
| SQ24   | QServ  | .894     |
| SQ31   | QServ  | .833     |
| SQ32   | QServ  | .874     |
| SQ33   | QServ  | .882     |
| SQ41   | QServ  | .897     |
| SQ42   | QServ  | .908     |
| SQ43   | QServ  | .890     |
| SQ44   | QServ  | .851     |
| SQ51   | QServ  | .976     |
| CS11   | CSat   | .856     |
| CS12   | CSat   | .844     |
| CS13   | CSat   | .855     |
| CS21   | CSat   | .896     |
| CS22   | CSat   | .866     |
| CS31   | CSat   | .898     |
| CS32   | CSat   | .895     |
| CS33   | CSat   | .858     |
| CS34   | CSat   | .844     |
| CL11   | CLo    | .821     |
| CL12   | CLo    | .849     |
| CL13   | CLo    | .837     |
| CL14   | CLo    | .897     |
| CL21   | CLo    | .864     |
| CL22   | CLo    | .911     |
| CL23   | CLo    | .867     |
| CL31   | CLo    | .831     |
| CL32   | CLo    | .837     |
| CL33   | CLo    | .812     |
| CL41   | CLo    | .654     |
| CL42   | CLo    | .702     |
| CL43   | CLo    | .679     |
# Appendix 3. Instrument validity

|     | Correlation   | Total  |
|-----|---------------|--------|
| SQ11| Pearson Correlation | .327** |
| SQ12| Pearson Correlation | .746** |
| SQ13| Pearson Correlation | .768** |
| SQ14| Pearson Correlation | .770** |
| SQ15| Pearson Correlation | .784** |
| SQ21| Pearson Correlation | .820** |
| SQ22| Pearson Correlation | .852** |
| SQ23| Pearson Correlation | .863** |
| SQ24| Pearson Correlation | .866** |
| SQ31| Pearson Correlation | .814** |
| SQ32| Pearson Correlation | .829** |
| SQ33| Pearson Correlation | .837** |
| SQ41| Pearson Correlation | .864** |
| SQ42| Pearson Correlation | .877** |
| SQ43| Pearson Correlation | .852** |
| SQ51| Pearson Correlation | .820** |
| SQ52| Pearson Correlation | .502** |
| CS11| Pearson Correlation | .845** |
| CS12| Pearson Correlation | .846** |
| CS13| Pearson Correlation | .831** |
| CS21| Pearson Correlation | .867** |
| CS22| Pearson Correlation | .845** |
| CS23| Pearson Correlation | .867** |
| CS31| Pearson Correlation | .872** |
| CS32| Pearson Correlation | .855** |
| CS33| Pearson Correlation | .829** |
| CS34| Pearson Correlation | .851** |
| CL11| Pearson Correlation | .834** |
| CL12| Pearson Correlation | .811** |
| CL13| Pearson Correlation | .802** |
| CL14| Pearson Correlation | .875** |
| CL21| Pearson Correlation | .842** |
| CL22| Pearson Correlation | .856** |
| CL23| Pearson Correlation | .800** |
| CL31| Pearson Correlation | .779** |
| CL32| Pearson Correlation | .809** |
| CL33| Pearson Correlation | .777** |
| CL41| Pearson Correlation | .593** |
| CL42| Pearson Correlation | .645** |
| CL43| Pearson Correlation | .622** |
| Total| Pearson Correlation | 1      |
Appendix 4. Instrument reliability

| Reliability statistics | Cronbach’s Alpha | Cronbach’s Alpha Based on Standardized Items | N of Items |
|-------------------------|------------------|---------------------------------------------|------------|
|                         | .985             | .985                                        | 40         |

Appendix 5. Normality test result

| Tests of normality | Kolmogorov-Smirnov\(^a\) Statistic | df | Sig. | Shapiro-Wilk Statistic | df | Sig. |
|--------------------|-------------------------------------|----|------|-------------------------|----|------|
| QServe             | .129                                | 1190| .000 | .864                    | 1190| .000 |
| Satisf             | .196                                | 1190| .000 | .842                    | 1190| .000 |
| CLoyalty           | .129                                | 1190| .000 | .893                    | 1190| .000 |

\(^a\) Lilliefors Significance Correction

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