

Digital Customer Satisfaction Service Management Model Innovation Through Digital Literacy-Based Digital Service Excellence Education



Eliana Sari¹, Madhakomala², Bambang Avip Priatna³, Dian⁴, Durotul Yatimah⁵, Sudirman⁶, Fakhru Roji Ishak⁷

^{1,2,5} Faculty of Science Education - State University of Jakarta, Indonesia

^{3,6} Faculty of Science Education – Indonesian Education University, Indonesia

^{4,7} Faculty of Tarbiyah and Teacher Training – Sunan Gunung Djati Islamic University, Indonesia

ABSTRACT: This study aims to create a satisfaction-based Digital Service Excellence (DSE) measurement instrument through strengthening digital literacy for education staff in DKI Jakarta. The digital service excellence measurement instrument developed by researchers refers to the Servqual model which is modified according to field requirements. The unit of analysis in this study was students of state junior high schools in DKI Jakarta, with an affordable population of 413 state junior high school students, which was carried out by proportional random sampling. The method used in this study is a quantitative descriptive method, with data collection techniques through distributing questionnaires, and data analysis techniques using descriptive statistics. The results of this study indicate that overall the level of student satisfaction with digital service excellence for education staff in Indonesia is quite satisfied. The results of measuring student satisfaction on the dimensions of administrative services, library services, laboratory services, and digital service excellence special services were also quite satisfied. Satisfaction-based digital service excellence measurement instruments resulting from this study can be used as an instrument for evaluating the competence of education staff in Indonesia.

KEYWORDS: Education management, Digital customer satisfaction

I. INTRODUCTION

"The government's collaboration with private schools ensures quality education services, encourages cooperation between schools in sharing facilities and competencies, and builds a spirit of mutual cooperation," said DKI Jakarta Governor Anies Baswedan [25]. The Industrial Age 4.0 and Society 5.0 continue to move in almost all sectors of human life in various countries, even though the Covid-19 pandemic has not shown signs of becoming endemic soon. Rodriguez-Abitia & Briebesca-Correa (2021) [26] stated that the Industrial Age 4.0 and Society 5.0 significantly influenced the way organizations function and interact with the communities they serve. Massive penetration of computer and network applications is forcing organizations to digitize their processes and provide innovative product services. Furthermore, [5, 26] said that the education market is also experiencing changes, but the market is slower to respond. The process of digital transformation of educational institutions is lagging behind compared to other sectors. Before the COVID-19 pandemic, there were many phenomena of slow adaptation of educational institutions to digital transformation. Academics tend to think that educational institutions are centers of scientific research and development that must be carried out carefully and with full consideration, so they are often slow in responding to modernization developments. Effective leadership, inadequate levels of innovation and financial support, as well as cultural changes are alleged to be inhibiting factors in the slow process of digital transformation in educational institutions [5,15]. The COVID-19 pandemic has finally forced educational institutions to implement digital-based learning models and educational services. Digital superior services have become the most prominent area of the modern higher education industry in Indonesia. The provision of service quality has become a very important issue. The main problem of poor performance in service organizations is not understanding what their customers expect [10, 15, 21]. Just like other service sectors, the education sector is also assessed based on the quality of services offered. In a competitive environment, providing excellent service is the key to the success of many educational institutions. Educational service innovation that meets student expectations is one of the strategies to build student satisfaction and loyalty to educational institutions [10, 21, 24]. Digital-based excellent service is the answer to the positive response of educational institutions to the dynamics of the level of satisfaction of educational institution stakeholders in the midst of digital transformation that has hit the world community.

Digital Customer Satisfaction Service Management Model Innovation Through Digital Literacy-Based Digital Service Excellence Education

Education Services in DKI Jakarta

Education Services in DKI Jakarta As a barometer of the quality of education in Indonesia, the DKI Jakarta education office has gradually and planned to start developing education services that are able to compete in the global market. DKI Jakarta Disdik is gradually moving to encourage educational institutions located in the DKI Jakarta area to improve their quality so that they can go to global education. The DKI Jakarta education office plans for DKI Jakarta to become a center of reference for education with a global reputation. One Click Service is an application built by the DKI Jakarta Provincial Education Office to facilitate the types of education service services, including adding new PTK at Dapodik, Approve PTK Mutations, Approve fulfillment of teaching hours in non-main schools, Change parent school status, and Approve students status Outside Dapodik with required documents (<https://disdik.jakarta.go.id/#ArticleNewsDisplay-root>).

As a very intangible service sector, one of the ways in which the DKI Jakarta education office has implemented to improve the quality of educational institutions in its region is through the provision of superior quality digital education services that are oriented towards customer satisfaction. Digital-based education services are one of the responsive and adaptive forms of the DKI Jakarta education office towards the transformation of digital society through the creation of stakeholder satisfaction in a comprehensive and sustainable manner.

Digital Service Excellence

Digital service excellence is defined as superior digital services or high quality digital services. Digital Service Excellence or abbreviated as DSE is an organization's collective effort to engage customers through digital means [4, 15]. This includes providing support and service processes through digital channels, such as live chat, email, video chat, chat bots, or text messages. Every digital interaction that customers make with online organizations to get information or solve problems, is considered digital customer service, regardless of the channel, time, or device used [4, 15]. Several types of digital service excellence have been widely practiced by the public, including: a) Looking for answers in the help center / organizational knowledge base, b) Asking questions in live chat, c) Clicking on personalized offers presented by chatbots, d) Sending messages in messaging applications, e) Call support (many organizations have digitized their call centers), f) Troubleshooting through innovative customer service technologies such as shared browsing or video chat, etc. [15]. Some of the digital services that customers need from organizations that provide digital services, as follows: proper management, it is expected that PKBM will be able to do managerial and manage all PKBM programs optimally, so that all PKBM programs can be well accredited in order to meet all the learning needs of the surrounding community. of the online world [10]. In providing digital services, every organization will generally have its own strategy that is oriented towards the expectations of their customers. Some of the best practices for digital customer service that organizations can implement, including through: Sophisticated technology, teamwork, problem solving, empathy, and knowledge, as below.



Figure 2. Customer Needs of Digital Service [18]

While in-person purchases are important and still widely practiced, most customers have gone digital. People start researching items or services online, checking websites and reviews, and using digital means to ask questions or comment on brands [28]. These behaviors form the face of the digital customer service an organization offers. Digital customer service can help organizations improve customer satisfaction and reduce operational costs. Many organizations that have started to develop their products can only be accessed online, this is considered an added value for modern customers who are increasingly well-informed [28, 37]. Many organizations are starting to build digital customer service centers of excellence as a response and adaptation to the transformation of the digital society. This service center is managed professionally, and is evaluated regularly to ensure that digital customers receive services according to their expectations. The digital customer service center of excellence optimizes human resources and technology in the innovation process as shown below

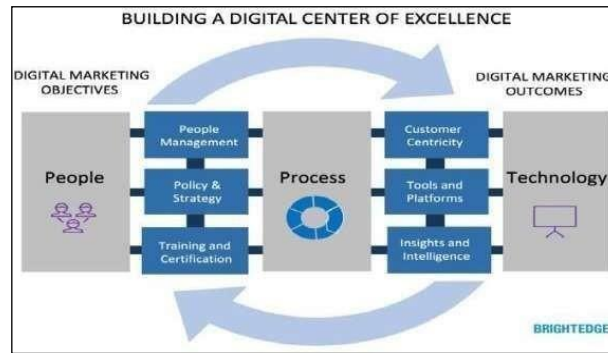


Figure 3. Building a Digital Service Center of Excellence [15]

Customer Satisfaction

Satisfaction is a feeling of happiness that is obtained when a person's needs and desires are met. Satisfaction refers to feelings of pleasure or disappointment resulting from comparing perceived performance in relation to expectations [32]. Satisfaction is the perception of pleasant fulfillment from a service. Satisfaction is the result of service quality [32, 35]. It was further explained that in the education sector, student satisfaction refers to students' subjective evaluation of various results and experiences related to education, where this is shaped continuously by repeated experiences in campus life. Various factors affect student satisfaction, and these factors are grouped into personal factors related to students (gender, temperament, preferred learning style, and average point value) and institutional factors related to educational experience [35, 37].

Student satisfaction is a complex concept consisting of several dimensions. Student satisfaction is a multidimensional process that is influenced by various factors. Student satisfaction can be defined as a relative function of the level of experience and performance perceived about educational services during the study period [19, 30]. Understanding the process of establishing student satisfaction, as well as valid and reliable ways to measure it, must be the task of educational institutions. A reliable measurement of student satisfaction will enable educational institutions to have a clear view of their existing situation and allow comparisons with other educational institutions [20,30].

Hoo, Lee & Fong [15] note that focusing on student satisfaction allows universities to re-engineer their organizations to adapt to students' needs and, at the same time, create systems that enable monitoring of the effectiveness of meeting or exceeding their needs. Furthermore [15] added that addressing the demands and needs of students is very important for the management of higher education to make universities competitive. Universities will benefit from developing relationships with students as this will provide a competitive advantage [15, 16]. It is further argued that issues such as student quality of life and other non-institutional factors need to be taken into account in offering a more comprehensive explanation of student satisfaction.

Service quality related to student satisfaction, [11] shows that the management of educational institutions should focus on the quality of services, information and facilities to increase student satisfaction and loyalty. It is further said that students' perceived quality correlates with factors such as academic staff, study content, readiness for the labor market and skills acquired which consequently have an influence on student loyalty to higher education institutions [6, 8, 11]. A study conducted [8] shows that student satisfaction reflects perceptions of differences in the quality of service shown by educational institutions.

Service Quality

Đonlagić & Fazlić (2015) [9] defines service quality (SQ) as the difference between what customers expect to receive and their perception of actual delivery. The general expression of SQ is that the services provided must meet the needs, expectations, and satisfaction of customers. Parasuraman et al (1988) have developed a SERVQUAL model based on functional quality rather than technical quality to measure SQ. Among the most developed models, the SERVQUAL model has been identified as the basic approach in measuring SQ. Parasuraman et al [22] suggest that SQ measures through the 9 SERVQUAL dimensions, namely: Reality, reliability, responsiveness, assurance and empathy. Tangible refers to; extent of appearance of physical facilities, equipment, personnel and communications materials. Reliability refers to the degree to which employees perform the promised service reliably and accurately. Responsiveness refers to the willingness to help customers and provide prompt service. Assurance refers to the competence of employees who provide guarantees and a sense of security in providing services, while empathy is a friendly and courteous attitude in providing services [9, 22, 30]. The Servqual model is mostly used in measuring student satisfaction, which was adapted from the model of Parasuraman et al (1988), as follows:

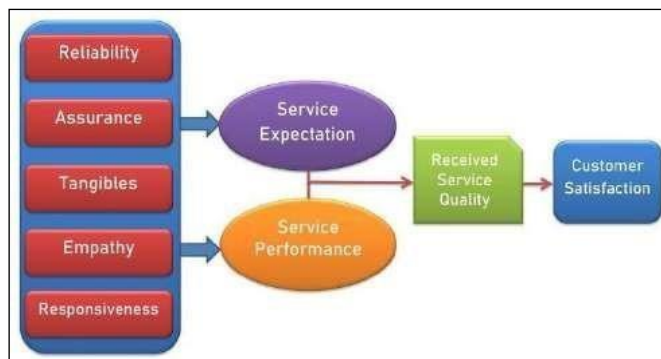


Figure 4. The Five Key Service Dimensions of The Servqual Model [22]

Digital Literacy

Today, technology is an important component that can be used in several sectors, including the education sector in learning process activities. Computers, LCDs, internet and power processing software and presentations are some of the applications of technology in the school environment. There are six basic literacy that can be applied in learning activities, including digital literacy, literacy, numeracy, science, finance, and culture and citizenship. Digital literacy can be interpreted as an interest in attitudes and individual abilities in utilizing digital technology and communication tools to access, manage, analyze and evaluate information, build new knowledge, and communicate with others. Abbasi & Stergioulas [1] state that digital literacy is defined as the ability to understand and use information in various forms from a very wide variety of sources which are accessed via computer devices. FernándezPrados, Lozano-Diaz & Ainz-Galende [12] offers a new understanding of digital literacy that is rooted in computer literacy and information literacy. Digital literacy is more associated with technical skills in accessing, assembling, understanding, and disseminating information. The concept of digital literacy overshadows and becomes an important basis for the ability to understand technology, information and communication devices.

Digital literacy refers to technical capabilities that enable the active involvement of community components in line with the development of digital-based culture and public services [1, 12]. Digital literacy is explained from two points of view. First, Technological Literacy (formerly known as computer literacy) refers to an understanding of digital technology including users and technical skills. Second, information literacy which focuses on one aspect of knowledge, such as the ability to map, identify, process, and use digital information optimally [1, 5]. Digital literacy is a skill (life skill) that does not only involve the ability to use technology, information and communication devices, but also social skills, learning abilities, and having attitudes, critical, creative and inspirational thinking as digital competencies [5, 13]. Digital literacy skills have an important role in supporting success in carrying out various activities. Good digital literacy skills will try to find and select important information and understand, communicate, and convey their ideas in the digital space (Fingal, 2021; Burns & Gottschalk, 2019). Digital literacy skills will open up opportunities to think, communicate, and create, which will ultimately lead to one's success.

II. METODOLOGY

An explanation of the research approach used by researchers referring to research and development Gall, Gall & Borg [14] is as follows:

1. Research and Information Collecting (Preliminary Study), is an activity that has been carried out by researchers which includes the following activities: a) Needs analysis, b) Literature studies have been carried out by researchers to collect research findings and other information related to the development of the planned model in the framework of temporary introduction to the model to be developed, and c) Small-scale research that has been carried out by researchers to find out several things about the product to be developed.
2. Planning (research planning) or the pre-development stage, includes activities: a) Formulating research objectives, b) Estimating funds, manpower, and time, and c) Formulating researcher qualifications and forms of participation in research.
3. Developing Preliminary of Product (design development) includes activities: a) Determine the design model to be developed (hypothetical design), b) Determine the research facilities and infrastructure needed during the research and development process carried out, c) Determine the stages of carrying out design tests in the field, and d) Determine the task description of the parties involved in the research.
4. Preliminary Field Testing (initial product testing) which is carried out involving expert testers, includes the following activities: a) Conducting initial tests to experts on the design model, both the substance of the design and the parties involved, b) Preliminary tests are carried out (more than once) so that the design is obtained a feasible model, both in terms of substance and methodology.

Digital Customer Satisfaction Service Management Model Innovation Through Digital Literacy-Based Digital Service Excellence Education

5. Main Product Revision (Revision of initial test results) is a model improvement based on input obtained from expert tests. Completion of the model will be carried out after field trials are carried out.
6. Main Field Test (Product Testing to users) is a product test to users which includes activities: a) Testing the effectiveness of the model design, b) The results of the field tests carried out obtained an effective model design both in terms of substance and methodology.
7. Operational Product Revision (Revision of user test results) is the second improvement implementation after the initial test.
8. Operational Field Testing (product feasibility test with experts and users) is carried out by involving experts and users on a broader scale, which includes the following activities: a) Carrying out product design effectiveness and adaptability tests, b) Design effectiveness and adaptability testing involving potential users model, c) the results of the field test obtained a design model that is ready to be applied both in terms of substance and methodology.
9. Final Product Revision (Final revision of due diligence results), this ninth step is carried out in order to further refine the model being developed.
10. Dissemination and Implementation (Dissemination and implementation of the final model), in the form of reports on the results of research and development carried out through scientific forums or via mobile media.

The unit of analysis for this study is a public junior high school in DKI Jakarta. The primary data source for measuring service satisfaction with digital service excellence is state junior high school students in DKI Jakarta, obtained from 405 students using proportional random sampling. The data collection technique was carried out by distributing questionnaires based on the Servqual model [22] which the researchers had modified according to their needs. Data analysis technique using Warp PLS.

III. RESULT AND DISCUSSION

This research involved 413 respondents who were students currently studying at the Junior High School (SMP) level in Jakarta. This research has also been tested for validity and reliability, with the test results declared valid because it has a value of $R > R_{table}$. Then it is also reliable because it has a Cronbach Alpha (CA) value of $0.94 > 0.70$. The following research results have been summarized in the overall average satisfaction below

Table 1. Mean of service satisfaction

Criterion	Overall Satisfaction	
Total	4,13	
Gender	Boy	4,19
	Girl	4,10
School location	East jakarta	4,17
	West jakarta	4,15
	Central jakarta	4,10
	North jakarta	4,10
	South jakarta	4,16

Source: Data processed by researchers (2022)

Based on the results of the study, overall student satisfaction was obtained for digital service excellence for education staff. In total, a satisfaction score of 4.13 is obtained which can be said to be quite satisfied. Then based on gender, for boys and girls it was 4.19 and 4.10 where both were quite satisfied. According to the school area which is divided into five, namely east Jakarta at 4.17; west jakarta at 4.15; central jakarta at 4.10; north jakarta at 4.10; and south jakarta at 4.16. The five regions have a level of satisfaction that is quite satisfied. The following is a bar chart of the frequency distribution.



Figure 5. Bar Chart of Overall Satisfaction Frequency Distribution

Source: Data processed by researchers (2022)

Digital Customer Satisfaction Service Management Model Innovation Through Digital Literacy-Based Digital Service Excellence Education

As for the frequency distribution of satisfaction overall, 173 (42%) of respondents stated that they were very satisfied, 203 (49%) of respondents stated that they were satisfied, and the remaining 37 (9%) of respondents stated that they were quite satisfied. Frequency distribution of satisfaction overall based on gender, for boys as much as 81 (49%) of respondents said they were very satisfied, 70 (42%) respondents said they were satisfied, and the remaining 16 (10%) respondents said they were quite satisfied. For girls, 92 (37%) respondents said they were very satisfied, 133 (54%) respondents said they were satisfied, and the remaining 21 (9%) respondents said they were quite satisfied. The following is a bar chart of the frequency distribution.

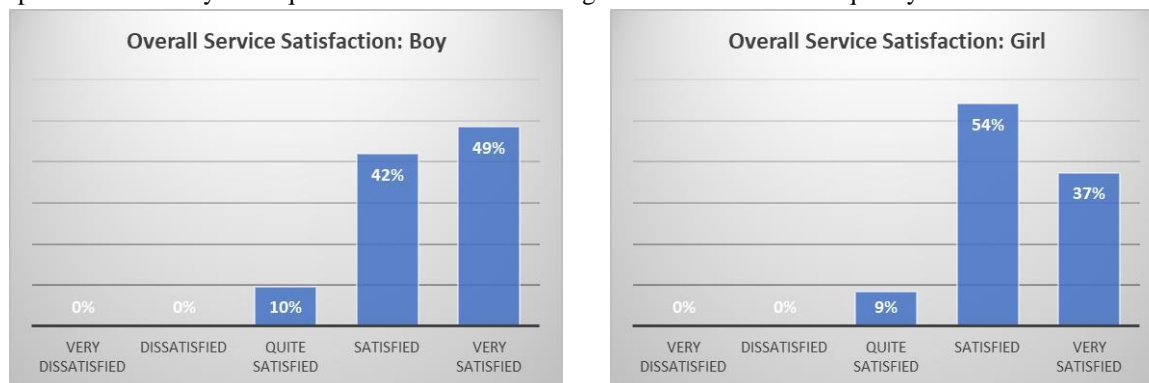


Figure 6. Bar Chart of Overall Satisfaction Frequency Distribution Based on Gender
Source: Data processed by researchers (2022)

Frequency distribution of satisfaction overall based on school location, for east Jakarta as many as 37 (46.8%) respondents said they were very satisfied, 36 (45.6%) respondents said they were satisfied, and the remaining 6 (7.6%) respondents said they were quite satisfied. For north Jakarta, 22 (34.9%) respondents said they were very satisfied, 39 (61.9%) respondents said they were satisfied, and the remaining 2 (3.2%) respondents said they were quite satisfied. For West Jakarta, 29 (42.0%) respondents said they were very satisfied, 35 (50.7%) respondents said they were satisfied, and the remaining 5 (7.2%) respondents said they were quite satisfied. For south Jakarta, 41 (43.6%) respondents said they were very satisfied, 45 (47.9%) respondents said they were satisfied, and the remaining 8 (8.5%) respondents said they were quite satisfied. For Central Jakarta, 44 (40.7%) respondents stated they were very satisfied, 48 (44.4%) respondents said they were satisfied, and the remaining 16 (14.8%) respondents said they were quite satisfied.

Table 2. Frequency Distribution of Overall Satisfaction Based on School Locations

Kriteria	East jakarta		North jakarta		West jakarta		South jakarta		Central jakarta	
	F	%	F	%	F	%	F	%	F	%
Very Dissatisfied	0	0,0%	0	0,0%	0	0,0%	0	0,0%	0	0,0%
Dissatisfied	0	0,0%	0	0,0%	0	0,0%	0	0,0%	0	0,0%
Quite Satisfied	6	7,6%	2	3,2%	5	7,2%	8	8,5%	16	14,8%
Satisfied	36	45,6%	39	61,9%	35	50,7%	45	47,9%	48	44,4%
Very Satisfied	37	46,8%	22	34,9%	29	42,0%	41	43,6%	44	40,7%

Source: Data processed by researchers (2022)

Table 3. Mean of Administrative Service Satisfaction

Criterion	Satisfaction Administrasi	
Total	4,16	
Gender	Boy	4,19
	Girl	4,10
School location	East jakarta	4,17
	West jakarta	4,19
	Central jakarta	4,14
	North jakarta	4,15
South jakarta	4,16	

Source: Data processed by researchers (2022)

on gender, boys and girls were 4.36 and 4.22, both of which were quite satisfied. According to school location it is divided into five, namely east jakarta at 4.27; west jakarta at 4.27; central jakarta at 4.28; north jakarta at 4.22; and south jakarta at 4.32. The five regions have a satisfaction level classified as Satisfied

Table 4. Mean of Librarian Service Satisfaction

	Criterion	Satisfaction Librarian
	Total	4,27
Gender	Boy	4,36
	Girl	4,22
	East jakarta	4,27
School location	West jakarta	4,27
	Central jakarta	4,28
	North jakarta	4,22
	South jakarta	4,32

Source: Data processed by researchers (2022)

Laboratorium Service Satisfaction

Based on the results of the research, student laboratory satisfaction was obtained for digital service excellence for education staff. According to Total, a satisfaction score of 4.02 is obtained which can be said to be quite satisfied. Then based on gender, boys and girls were 4.05 and 4.02, both of which were quite satisfied. According to school location it is divided into five, namely east jakarta at 4.17; west jakarta at 4.06; central jakarta at 3.91; north jakarta at 4.01; and south jakarta at 4.03. The five regions have a satisfaction level classified as Satisfied

Table 5. Mean of Laboratorium Service Satisfaction

	Criterion	Satisfaction Laboratorium
	Total	4,02
Gender	Boy	4,05
	Girl	4,02
	East jakarta	4,17
School area	West jakarta	4,06
	Central jakarta	3,91
	North jakarta	4,01
	South jakarta	4,03

Source: Data processed by researchers (2022)

Special Service Satisfaction

Based on the results of the study, satisfaction with special student services was obtained for digital service excellence for education staff. According to Total, a satisfaction score of 4.03 is obtained which can be said to be quite satisfied. Then based on gender, for boys and girls it was 4.11 and 4.00 where both were quite satisfied. According to school location it is divided into five, namely east jakarta at 3.97; west jakarta at 4.06; central jakarta at 4.05; north jakarta at 3.98; and south jakarta at 4.11. The five regions have a satisfaction level classified as Satisfied.

Table 6. Mean of Laboratorium Service Satisfaction

	Criterion	Satisfaction Special Service
	Total	4,03
Gender	Boy	4,11
	Girl	4,00
	East jakarta	3,97
School location	West jakarta Central	4,06
	jakarta North	4,05
	jakarta	3,98
	South jakarta	4,11

Source: Data processed by researchers (2022)

IV. CONCLUSION

The digital service excellence measurement instrument developed in this study is valid and reliable for use in measuring digital service excellence for teaching staff at public junior high schools in DKI Jakarta. The digital service excellence measurement instrument developed by researchers from Servqual model can provide digital service excellence for educational staff in an objective, detailed and comprehensive manner. Overall, student satisfaction with digital service excellence for educational staff is quite satisfied.

REFERENCES

- 1) Abbasi, M. and Stergioulas, L. K. 2011 Hybrid Wireless Networks for E-Learning and Digital Literacy: Testing and Evaluation. *International Journal of Digital Literacy and Digital Competence*, 2(2). Retrieved from <https://link.gale.com/apps/doc/A429336290/AONE?u=anon~5603be0&sid=googleScholar&xid=32c6932a>
- 2) Appuhamilage, K. S. and Torii, H. 2019. The Impact of Loyalty on the Student Satisfaction in Higher Education. *Higher Education Evaluation and Development*, 13(2), 82-96. Retrieved from <https://www.emerald.com/insight/content/doi/10.1108/HEED-01-2019-0003/full/pdf>
- 3) Ayuningtyas, A. and Ashari, A. 2016. Pemanfaatan Teknologi Web Service untuk Integrasi Sistem Layanan Materi Pelajaran Terdistribudi. *ANGKASA: Jurnal Ilmiah Bidang Teknologi*, 8(1), 33-46. Retrieved from <https://ejournals.itda.ac.id/index.php/angkasa/article/view/130/128>
- 4) Ayuningtyas, A. and Indrianingsih, Y. 2018. Web Service untuk Integrasi Data Materi Pelajaran Sekolah Menengah Pertama (SMP) secara Terdistribusi. *Jurnal Informatika Sunan Kalijaga*, 3(2), 126-131. doi: <https://doi.org/10.14421/jjska.2018.32-07>
- 5) Burns, T. and Gottschalk, F. 2019. *Educating 21st Century Children: Emotional Well-being in the Digital Age*. Paris: ORCK Publishing. doi: <https://doi.org/10.1787/b7f33425-en>
- 6) Chandra, T., Ng, M., Chandra, S., and Priyono. 2018. The Effect of Service Quality on Student Satisfaction and Student Loyalty: An Empirical Study. *JSSER: Journal of Social Studies Research*, 9(3), 109-131. Retrieved from <https://jsser.org/index.php/jsser/article/view/282>
- 7) Choi, M. 2015. Development of a Scale to Measure Digital Citizenship among Young Adults for Democratic Citizenship Education.
- 8) Daniel, D., Liben, G., and Adugna, A. 2017. Assessment of Students' Satisfaction: A Case Study of Dire Dawa University, Ethiopia. *Journal of Education and Practice*, 8(4), 111-120. Retrieved from <https://files.eric.ed.gov/fulltext/EJ1133033.pdf>
- 9) Đonlagić, S. and Fazlić, S. 2015. Quality Assessment in Higher Education Using the SERVQUAL Model. *Management: Journal of Contemporary Management*, 20(1), 39-57. Retrieved from https://www.researchgate.net/publication/282693142_Quality_assessment_in_higher_education_using_the_SERVQUAL_Q_model
- 10) Dorta-Guerra, R., Marrero, I., Abdul-Jalbar, B., Trujillo-González, R., and Torres, N. V. 2019. A New Academic Performance Indicator for the First Term of First-year Science Degrees Students at La Laguna University: A Predictive Model. *FEBS Open Bio*, 9(9), 1493-1502. doi: <https://doi.org/10.1002/2211-5463.12707>
- 11) Farahmandian, S., Minavand, H., and Afshardost, M. 2013. Perceived Service Quality and Student Satisfaction in Higher Education. *IOSR Journal of Business and Management (IOSR-JBM)*, 12(4), 65-74. Retrieved from <https://iosrjournals.org/iosr-jbm/papers/Vol12- issue4/L01246574.pdf>
- 12) Fernández-Prados, J. S., Lozano-Diaz, A., and AinzGalende, A. 2021. Measuring Digital Citizenship: A Comparative Analysis. *Informatics*, 8(1), 18. doi: <https://doi.org/10.3390/informatics8010018>
- 13) Fingal, J. (2021). The 5 Competencies of Digital Citizenship. Retrieved from ISTE: <https://www.iste.org/explore/5-competencies-digitalcitizenship>
- 14) Gall M. D., Gall J. P & Borg W. R. 2007. *Educational Research: An Introduction*, 8th Edition, USA: Pearson
- 15) Hoo, W. C., Lee, A., and Fong, W. Y. 2021. Predicting Factors towards Students Satisfaction among Private Universities in Selangor, Malaysia. *International Journal of Academic Research in Business & Social Sciences*, 11(8), 1890-1900. Retrieved from https://hrmars.com/papers_submitted/10676/predicting-factors-towards-students-satisfaction-among-private-universities-in-selangor-malaysia.pdf
- 16) Kajenthiran, K. and Karunanithy, M. 2015. Service Quality and Student Satisfaction: A Case Study of Private External Higher Education Institutions in Jaffna, Sri Lanka. *Journal of Business Studies*, 1(2), 46-64. Retrieved from https://www.researchgate.net/publication/319112052_Service_Quality_and_Student_Satisfaction_A_Case_Study_of_Private_External_Higher_Education_Institutions_in_Jaffna_Sri_Lanka

- 17) Leustig, T. 2020. What is Digital Citizenship. Retrieved from <https://www.dyknow.com/blog/whatis-digital-citizenship/amp/>
- 18) Likhachev, S., Likhacheva, T., Silchenkova, L., Krivorotova, E., and Plesnik, L. 2020. Controlling Research Activity of Students berdasarkan Digital Tools. International Scientific and Practical Conference "Theory and Practice of Project Management in Education: Horizons and Risks", 79, 1-5. doi:<https://doi.org/10.1051/shsconf/20207901010>
- 19) Meštrović, D. 2017. Service Quality, Students' Satisfaction, and Behavioural Intentions in STEM and IC Higher Education Institutions. *Interdisciplinary Description of Complex Systems: INDECS*, 15(1), 66-77. doi: <https://doi.org/10.7906/indecs.15.1.5>
- 20) Mukhtar, U., Anwar, S., Ahmed, U., and Baloch, M. A. 2015. Factors Effecting the Service Quality of Public and Private Sector Universities Comparatively: An Empirical Investigation. *International Refereed Research Journal*, 6(3), 132-142. Retrieved from https://www.researchgate.net/publication/317328880_Factors_Effecting_The_Service_Quality_Of_Public_And_Private_Sector_Universities_Co_mparatively_An_Empirical_Investigation
- 21) Onditi, E. O. and Wechuli, T. W. 2017. Service Quality and Student Satisfaction in Higher Education Institutions: A Review of Literature. *International Journal of Scientific and Research Publications*, 7(7), 328-335. Retrieved from <http://www.ijrsp.org/research-paper-0717.php?rp=P676590>
- 22) Parasuraman, A. P., Zeithaml, V. A., and Berry, L. L. 2002. SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality. *Retailing: Critical Concepts*, 64(1), 12-40. Retrieved from https://www.researchgate.net/publication/225083802_SERVQUAL_A_multiple_Item_Scale_for_measuring_consumer_perceptions_of_service_quality
- 23) Pathmini, M., Wijewardhena, W., Gamage, C., and Gamini, L. 2014. Impact of Service Quality on Students' Satisfaction in Newly Established Public Sector Universities in Sri Lanka: Study Based on the Faculty of Management Studies. *Journal of Management Matters*, 1(1), 51-64. Retrieved from https://www.researchgate.net/publication/295257431_Impact_of_Service_Quality_on_Students%27_Satisfaction_in_Newly_Established_Public_Sector_Universities_in_Sri_Lanka_Study_Based_on_The_Faculty_of_Management_Studies
- 24) Prakash, A. V. and Muhammed, F. S. 2016. Service Quality in Higher Education: An Antecedent to Satisfaction and Behavioral Intentions. *International Journal of Management and Applied Science*, 2(5), 273-79. Retrieved From <http://iraj.doionline.org/dx/IJMAS-IRAJDOIONLINE-4561>
- 25) PUSDATIKOMDIK – Dinas Pendidikan Provinsi DKI Jakarta. 2022. Dinas Pendidikan Provinsi DKI Jakarta Saat Ini Menjalankan Program Sekolah Kolaborasi Antara Negeri dan Swasta Jenjang SMP, SMP, dan SMK. Jakarta: Dinas Pendidikan Provinsi DKI Jakarta. Retrieved from <https://disdik.jakarta.go.id/article/2026-dinaspendidikan-provinsi-dki-jakarta-saat-ini-menjalankan-program-sekolah-kolaborasi-antaranegeri-dan-swasta-jenjang-smp-SMP-dan-smk>
- 26) Rodriguez-Abitia, G. and Bribiesca-Correa, G. 2021. Assessing Digital Transformation in Universities. *Future Internet*, 13(2), 52. doi: <https://doi.org/10.3390/fi13020052>
- 27) Saleem, S., Moosa, K., Imam, A., and Khan, R. A. 2017. Service Quality and Student Satisfaction: The Moderating Role of University Culture, Reputation and Price in Education Sector of Pakistan. *Iranian Journal of Management Studies*, 10(1), 237-258. doi: <https://dx.doi.org/10.22059/ijms.2017.217335.672304>
- 28) Serdyukov, P. 2017. Innovation in Education: What Works, What Doesn't, and What To Do About It? *Journal of Research in Innovative Teaching & Learning*, 10(1), 4-33. Retrieved from <https://www.emerald.com/insight/content/doi/10.1108/JRIT-10-2016-0007/full/pdf?title=innovation-in-education-what-works-what-doesnt-and-what-to-do-about-it>
- 29) Shuxin, G., Fei, T., Jiannan, G., and Yang, S. 2014. The construction of college student's satisfaction model based on. *Journal of Chemical and Pharmaceutical Research*, 6(6), 164-169. Retrieved from <https://www.jocpr.com/articles/theconstruction-of-college-students-satisfaction-modelbased-on-structural-equation-model.pdf>
- 30) Sibai, M. T., Jr., B. B. and Rosa, R. d. 2021. Service Quality and Student Satisfaction Using Servqual Model: A Study of a Private Medical College in Saudi Arabia. *International Education Studies*, 14(6), 51-58. Retrieved from <https://files.eric.ed.gov/fulltext/EJ1296955.pdf>
- 31) Sojkin, B., Bartkowiak, P., and Skuza, A. 2012. Determinants of Higher Education Choices and Student Satisfaction: The Case of Poland. *Higher Education*, 63, 565-581. Retrieved from <https://link.springer.com/content/pdf/10.1007/s10734-011-9459-2.pdf>

Digital Customer Satisfaction Service Management Model Innovation Through Digital Literacy-Based Digital Service Excellence Education

- 32) Son, H. T., Ha, N. T., and Khuyen, P. T. 2018. Measuring Students' Satisfaction with Higher Education Service - An Experimental Study at Thainguyen University. *International Journal of Business Marketing and Management (IJBMM)*, 3(4),21-34. Retrieved from http://www.ijbmm.com/paper/April2018/214369386_9.pdf
- 33) Universitas Negeri Jakarta, 2020. Rencana Pengembangan Jangka Panjang (RPJP) Universitas Negeri Jakarta 2020-2045
- 34) Vivakaran, M. V., and Neelamalar, M. 2018. Utilization of Social Media Platforms for Educational Purposes among the Faculty of Higher Education with Special Reference to Tamil Nadu. *Higher Education for The Future*, 5(1), 4-19. doi: <https://doi.org/10.1177/2347631117738638>
- 35) Weerasinghe, I. S., Lalitha, R., and Fernando, S. 2017. Students' Satisfaction in Higher Education Literature Review. *American Journal of Educational Research*, 5(5), 533-539. doi:DOI: 10.12691/education-5-5-9
- 36) Wilkins, S. and Balakrishnan, M. 2013. Assessing Student Satisfaction in Transnational Higher Education. *International Journal of Educational Management*, 27(2), 143-156. doi: <https://doi.org/10.1108/09513541311297568>
- 37) Yusoff, M., McLeay, F., and Woodruffe-Burton, H. 2015. Dimensions Driving Business Student Satisfaction in Higher Education. *Quality Assurance in Education*, 23(1), 86-104. Retrieved from <https://www.emerald.com/insight/content/doi/10.1108/QAE-08-2013-0035/full/html>



There is an Open Access article, distributed under the term of the Creative Commons Attribution–Non Commercial 4.0 International (CC BY-NC 4.0) (<https://creativecommons.org/licenses/by-nc/4.0/>), which permits remixing, adapting and building upon the work for non-commercial use, provided the original work is properly cited.