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The Impact of Learning Innovation and Service Quality on Learner Satisfaction in Non-Formal Education Units in Ambon City

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Abstract

The level of student satisfaction during training is a crucial factor in non-formal education, particularly in Non-Formal Education Units in Ambon City. One of the main challenges in this context is the innovation in learning and service quality, which significantly affects student satisfaction. This study used a descriptive quantitative approach to examine the effect of learning innovation and service quality on student satisfaction in Non-Formal Education Units in Ambon City. Data were collected through questionnaires distributed to 45 students in Non-Formal Education Units in Ambon City. Hypothesis testing was conducted using a significance level of 5% or $\alpha = 0.05$. The results showed that: (1) there was a partial effect of learning innovation on student satisfaction in Non-Formal Education Units in Ambon City, with a t-count value > t-table (3.079 > 1.681071); (2) there was a partial effect of service quality on student satisfaction in Non-Formal Education Units in Ambon City, with a t-count value > t-table (5.295 > 1.681071). (3) There was a simultaneous effect of learning innovation and service quality on student satisfaction in Non-Formal Education Units in Ambon City, with a calculated F-value > F-table (75.465 > 3.22). These findings highlight the importance of implementing innovative learning models that prioritize collaboration, creativity, critical thinking, and problem-solving. Additionally, they emphasize the importance of quality service in the form of curriculum management, starting from planning, implementation, and evaluation, supported by adequate resources. Future interventions should prioritize learning innovations that synergize with quality services.

Keywords: Innovation; Service; Student Satisfaction; Non-Formal Education; Community Learning Center

1. Introduction

The Community Learning Center (PKBM) and Non-Formal Education Unit were established in Indonesia in 1998, amidst a national socio-economic crisis. As a result, there are still people who are illiterate. In fact, in 2019, illiteracy rates remained relatively high, at 1.78 percent or around 3,081,136 people. However, this number decreased in 2020 to 1.71 percent or around 2,961,060 people; this was stated by the Director General of Early Childhood Education, Basic Education, and Secondary Education (Dirjen PAUD Dikdasmen). Based on this data, the role of institutions like PKBM is crucial in addressing this issue. In general, PKBM is an institution that focuses on non-formal education development, aiming to be a center that accommodates community learning (Rapanta et al., 2020). The primary function of PKBM is to focus on two main aspects: community activity center and a place to find solutions to social problems in the community (Mutiara, 2020). In its implementation, PKBM functions as a social organization that attempts to reduce important problems such as community mindset backwardness and plays a significant role in other problems that require practical handling (Shyiramunda & Bersselaar, 2024). For example, PKBM in Sumedang Regency addresses poverty through non-formal education in the form of valuable and practical programs, while other activities in community development and empowerment are present but still not optimal (Chotim, 2021). Additionally, a study by

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Sahalessy et al. (2025) on the package C program in one of the PKBM in Ambon highlights the double importance of increasing tutor effectiveness and fostering student motivation to improve educational outcomes in non-formal environments. Tutor performance is shaped by internal factors such as professional competence and motivation, which in turn impact student academic success. Tutor performance and student learning motivation are key predictors of student achievement in Package C programs. Such innovative learning models typically encompass a range of practices, technologies, and pedagogies that prioritize collaboration, creativity, critical thinking, and problem-solving (Sander et al., 2024; Mariyono, 2025).

As stated by Tveitnes et al. (2025), innovative learning models can help bridge the gap between theory and practice. Zhang & Chen (2018) observe that innovative learning models "stand out as a means that can help advance education transformation and improve learning outcomes". Innovative learning models can "improve the quality and relevance of education by making teaching and learning more effective, accessible, and sustainable" (Çelik & Baturay, 2024). Innovative learning models contribute to education transformation by promoting more holistic and integrated teaching and learning approaches (Kirkwood & Price, 2013). The use of learning media in innovative learning will greatly help learners to be able to solve problems in the learning process (Kwangmuang et al., 2021), connect learning resources, and ultimately lead to better communication in learning and behavioral change because learning objectives can be achieved, increasing the effectiveness of learner outcomes (Serdyukov, 2025). The use of learning media is the most effective way to achieve all learning objectives (Abdulrahaman et al., 2020).

The head of a school that implements effective school management has the potential to produce high-achieving young generations because the school environment can optimize its function as an educational institution that carries out economic, humanitarian, social, political, cultural, and educational functions. One aspect that can support the implementation of effective school management is the leadership of the head of the school in decision-making, communication, direction, and staff development, problem-solving, and evaluation of school activities (Sunaengsih et al., 2019). The success of non-formal educational institutions such as PKBM is largely determined by the quality of services provided (Rahabav & Souisa, 2021). To support this, good quality management is needed, starting from careful planning, adequate facilities, and supporting human resources (Abednego et al., 2023). Human resource management is mediated by leaders in their leadership and educators in education, training, and learning. The quality of service from an educational leader is characterized by effective leadership (Sebastien, 2017), transformative leadership (Cranton, 2006), ethical leadership (Harris et al., 2017) instructional leadership that prioritizes teaching and learning and promotes scholarship (Harris et al., 2017), and leaders who maintain school culture and climate (Karatas et al., 2024). Additionally, educational leadership requires leaders who are skilled in managing the organization's vision and goals (Persson et al., 2025), monitoring student progress (Rice et al., 2020), communication skills (Oetjen et al., 2025), professionalism, and self-reflection (Taylor et al., 2018). School management is one of the determining factors of education quality (Lessa et al., 2018), as it indirectly determines the effectiveness of the curriculum, learning facilities, time, and process (Donkoh et al., 2023). From a management perspective, an effective school strives to utilize all school components optimally (Granger & Chow, 2025). As a formal educational institution, schools are expected to produce graduates with academic abilities, skills, attitudes, and mentalities, as well as competent personalities, so that students have competitiveness after graduating from an institution (Wanti et al., 2022). Schools with strong head leadership are predicted to be able to develop effective school management, supported by various aspects such as technology application, school culture, information systems, and developing organizations. However, in reality, not all headmasters are able to run schools based on strong leadership (Ikram & Kenayathulla, 2023) The leadership of the head of the school in implementing school management is considered important because it can facilitate the division of work activities. A well-organized school environment involves several elements, including the head of the school, teachers, employees, and students. Furthermore, a good organization creates an equal division of tasks and responsibilities to facilitate the work process in achieving common goals (Mincu, 2022).

An educational leadership service initiative has been launched in Hong Kong to meet the growing demand for service leaders and improve student well-being by not only developing competencies but also good character and caring attitudes. A curriculum-based leadership course can be a promising way to improve the quality of service leadership and student well-being (Zhu & Shek, 2021). The quality of service from educators is characterized by their ability to manage the curriculum (Dematthews, 2014). Haque & David, (2022) state that curriculum management relates to the management of learning experiences that require specific strategies to produce learning productivity for students. These strategies start from planning, implementation, and evaluation, which need to be supported by adequate resources. Some previous research findings include: 1) innovative learning models are very effective in promoting student-centered learning, increasing student learning satisfaction (Sharma et al., 2023); 2) teaching innovation has a positive effect on student learning effectiveness and a significant positive effect on learning satisfaction (Lee, 2011); 3) the positive impact of innovative teaching approaches and the effectiveness of developing material delivery on student

satisfaction in online courses (Muthuswamy & Pavithra, 2024); 4) the influence of school services and the quality of the teaching and learning process on student satisfaction (Tupari et al., 2023).

2. Methods

The research approach used in this study is a quantitative research approach. The quantitative approach is a research method that focuses on numerical data and testing previously formulated hypotheses. This approach is based on the postpositivist paradigm, which emphasizes the importance of objectivity and measurement in understanding social phenomena. In this context, the researcher seeks to identify the causal relationship between the variables studied through statistically measurable data. Thus, this study aims to obtain results that can be generalized and have high validity based on quantitative data processing. This study will be conducted at the Non-Formal Education Unit (SPNF) in Sirimau District, Ambon City. The selection of this location is based on the consideration that SPNF is an educational institution that plays an important role in improving the skills and competencies of the community outside the formal education system. The study is planned to take place over six months, providing the researcher with sufficient time to collect data, process, and analyze the research results in-depth. The research process is carried out systematically, starting from the preparation stage, data collection, and analysis, and concluding with the drawing of conclusions.

The population in this study is all learners registered at SPNF Ambon City, totaling 80 people. From this population, the researcher uses the Slovin formula to determine the number of representative research samples. Based on the calculation results, a sample of 45 learners will be used as respondents. The sample selection is done randomly so that each member of the population has an equal opportunity to be selected, allowing the research results to reflect the overall population condition. By doing so, the researcher hopes to obtain valid and scientifically accountable data. The variables in this study consist of two independent variables and one dependent variable. The independent variables in this study are learning innovation (X1) and service quality (X2), while the dependent variable is the satisfaction level of learners (Y). To measure these three variables, the researcher uses instruments in the form of questionnaires and observations. Before use, these research instruments will be tested for validity and reliability to ensure that the measuring instruments used are truly capable of consistently and accurately measuring the intended variables.

The data analysis technique used in this study is multiple linear regression analysis. According to Khaing & Cho (2019), multiple linear regression analysis is used to determine the relationship between two or more independent variables and one dependent variable. This analysis helps the researcher understand the extent to which learning innovation and service quality affect the satisfaction level of learners. Before conducting regression analysis, the researcher will also perform descriptive analysis, classical assumption testing, and hypothesis testing with a significance level of 5% ($\alpha = 0.05$). The entire statistical analysis process is carried out with the help of SPSS 20 for Windows to ensure that the results obtained are more accurate and efficient.

3. Results

3.1. Descriptive Statistics

This section presents the data obtained from the research conducted in the field. The data to be described include innovation in learning, service quality, and learner satisfaction. The descriptive results of the research can be seen in Table 1.

Table 1 Descriptive Statistics of Research Data

Statistics	Innovation in Learning	Service Quality	Learner Satisfaction
Sample Size	45	45	45
Mean	27,53	27,27	28,00
Median	27,00	27,00	29,00
Std.deviation	5,181	4,868	4,782
Variance	26,845	23,700	22,864
Minimum	19	19	19
Maximum	40	39	38

From the data in Table 1, it can be seen that the minimum value of the innovation in learning variable (X1) is 19, the maximum value is 40, the variance is 26.845, the standard deviation is 5.181, the median is 27.00, and the mean is 27.53. For the service quality variable (X2), the minimum value is 19, the maximum value is 39, the variance is 23.700, the standard deviation is 4.868, the median is 27.00, and the mean is 27.27. Meanwhile, for the learner satisfaction variable (Y), the minimum value is 19, the maximum value is 38, the variance is 22.864, the standard deviation is 4.782, the median is 29.00, and the mean is 28.00.

3.2. Normality Test

The normality assumption test was conducted using the one-sample Kolmogorov-Smirnov test. The normality assumption is said to be normally distributed if the test yields a significance value greater than 0.05. Conversely, if the significance value is less than 0.05, the normality assumption is not normally distributed. The results of the normality test can be seen in Table 2, using SPSS 20 software.

Table 2 Results of Normality Test

One-Sample Kolmogorov-Smirnov Test				
		Innovation in Learning	**Service Quality**	**Learner Satisfaction**
N		45	45	45
Normal Parameters[a,b]	Mean	27.53	27.27	28.00
	Std. Deviation	5.181	4.868	4.782
Most Extreme Differences	Absolute	0.110	0.092	0.097
	Positive	0.110	0.092	0.097
	Negative	-0.061	-0.090	-0.094
Test Statistic		0.110	0.092	0.097
Asymp. Sig. (2-tailed)		0.200[c,d]	0.200[c,d]	0.200[c,d]
a. Test distribution is Normal.				
b. Calculated from data.				
c. Lilliefors Significance Correction.				
d. This is a lower bound of the true significance.				

From the output of the normality test using SPSS in Table 2, the significance values (Asymp. Sig. (2-tailed)) for the innovation in learning variable (X1), service quality variable (X2), and learner satisfaction variable (Y) are 0.200, 0.200, and 0.200, respectively. Based on the results of the processing, it can be concluded that the data is normally distributed because the significance values for each variable are greater than 0.05, meaning that the data for variables X1, X2, and Y are normally distributed.

3.3. Classical Assumption Test

3.3.1. Multicollinearity Test

The multicollinearity test is conducted to examine whether the regression model finds any correlation between independent variables. A regression model is considered free from multicollinearity if the Variance Inflation Factor (VIF) value is < 10 and the tolerance value is > 0.10. The results of the multicollinearity test can be seen in Table 3.

Table 3 Multicollinearity Test Results

Coefficients[a]								
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**	**Collinearity Statistics**	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.378	2.033		1.661	0.104		
	Innovation	0.318	0.103	0.345	3.079	0.004	0.414	2.416
	Service Quality	0.582	0.110	0.593	5.295	0.000	0.414	2.416
a. Dependent Variable: Satisfaction Level								

From Table 3, it can be seen that the tolerance value of the innovation variable is 0.414 > 0.1, and the service quality variable is 0.414 > 0.1. Therefore, it can be concluded that the tolerance values of both variables are greater than 0.1 (tolerance > 0.1), indicating that they are free from multicollinearity. Furthermore, based on the VIF value, the innovation variable is 2.416 < 10, and the service quality variable is 2.416 < 10, indicating that they are free from multicollinearity.

3.3.2. Heteroscedasticity Test

The heteroscedasticity test aims to examine whether the regression model occurs inequality of variance from residual one observation to another observation. If the variance from residual one observation to another observation is constant, it is called homoscedasticity, and if it is different, it is called heteroscedasticity. One way to detect the presence or absence of heteroscedasticity is to perform the Glejser test. The Glejser test proposes to regress the absolute residual value against the independent variables. The probability result is said to be significant if the significance value is above the 5% confidence level. The results of the heteroscedasticity test can be seen in Table 4.

Table 4 Heteroscedasticity Test Results

Coefficients[a]						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	3.824	1.288		2.970	0.005
	Innovation	0.019	0.065	0.066	0.287	0.776
	Service Quality	-0.098	0.070	-0.326	-1.413	0.165
a. Dependent Variable: Abs_RES						

From the results of the heteroscedasticity test in Table 4, it can be seen that the Sig. value of each variable is 0.776 for the innovation variable (X1) and 0.165 for the service quality variable. From these results, it can be concluded that the regression equation model does not experience heteroscedasticity. This is because the values of each variable are not significant, or the Sig. value is greater than 0.05.

3.3.3. Multiple Linear Regression Test

The multiple linear regression analysis is used to examine the simultaneous effect of several independent variables, namely innovation (X1) and service quality (X2), on one dependent variable, namely satisfaction level (Y). The aim is to determine the effect of independent and dependent variables. The results of the regression test are as follows:

Table 5 Multiple Linear Regression Test Results

Coefficients[a]						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	3.378	2.033		1.661	0.104
	Innovation	0.318	0.103	0.345	3.079	0.004
	Service Quality	0.582	0.110	0.593	5.295	0.000
a. Dependent Variable: Satisfaction Level						

Based on Table 5, the equation of the multiple linear regression analysis in this study is: KK = α + b1I + b2KP + e

KK = 3,378 + 0,318I + 0,582KP + 2,033

The regression equation can be explained as follows:

The constant value of 3.378 means that if the innovation (X1) and service quality (X2) variables are considered constant or 0, then the satisfaction level of learners (Y) is 3.378 units.

The regression coefficient value of the innovation variable (X1) is 0.318, meaning that if the innovation variable (X1) increases by 1 unit, then the satisfaction level of learners (Y) will increase by 0.318 units, assuming the other variables remain constant. The positive coefficient value indicates a positive relationship between innovation (X1) and satisfaction level (Y).

The regression coefficient value of the service quality variable (X2) is 0.582, meaning that if the service quality variable (X2) increases by 1 unit, then the satisfaction level of learners (Y) will increase by 0.582 units, assuming the other variables remain constant. The positive coefficient value indicates a positive relationship between service quality (X2) and satisfaction level (Y).

3.4. t-test

The partial test (t-test) is used to determine whether the regression model of innovation and service quality variables partially has a significant effect on the satisfaction level of learners. The results of the t-test can be seen in Table 6.

Table 6 t-test Results

Coefficients[a]						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	3.378	2.033		1.661	0.104
	Innovation	0.318	0.103	0.345	3.079	0.004
	Service Quality	0.582	0.110	0.593	5.295	0.000
a. Dependent Variable: Satisfaction Level						

From the partial test results, it can be seen that the effect of each variable, where the table value obtained and the formula df = n-2, so 45-2 = 43, and the ttable value is 1.681071. Therefore, it can be concluded that:

$t_{count} > t_{table}$ (3.079 > 1.681071), then Ha is accepted, meaning that there is a partial effect of innovation on the satisfaction level of learners in non-formal education units in Ambon city.

$t_{count} > t_{table}$ (5.295 > 1.681071), then Ha is accepted, meaning that there is a partial effect of service quality on the satisfaction level of learners in non-formal education units in Ambon city.

3.4.1. F-test

The simultaneous test (F-test) is used to examine the effect of innovation and service quality variables simultaneously on the satisfaction level of learners. The results of the F-test are as follows:

Table 7 F Test

ANOVA[a]						
Model		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
1	Regression	786.998	2	393.499	75.465	0.000[b]
	Residual	219.002	42	5.214		
	Total	1006.000	44			
a. Dependent Variable: Satisfaction Level						
b. Predictors: (Constant), Service Quality, Innovation						

From the test results in Table 7, it can be seen that the F_{count} value is 75.465, while the F_{table} value is obtained from the formula df (N1) = k-1 or 3-1 = 2 and df (N2) = n-k = 45-3 = 42, which is 3.22. Since $F_{count} > F_{table}$ (75.465 > 3.22), it means that H0 is rejected, and Ha is accepted, indicating that there is a simultaneous effect of innovation and service quality on the satisfaction level of learners in non-formal education units in Ambon city.

3.4.2. R-Square Test (Coefficient of Determination) (R2)

The coefficient of determination serves to determine the percentage of the influence of the independent variable on the dependent variable, namely by squaring the coefficient found. In its usage, this coefficient of determination is expressed as a percentage. To find out the extent of the contribution or percentage of the influence of learning innovation and service quality on the level of learner satisfaction, it can be determined through a determination test.

Table 8 Results of the Determination Coefficient Test (R-Square)

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	0.884[a]	0.782	0.772	2.283
a. Predictors: (Constant), Service Quality, Innovation				

From the table above, the correlation coefficient (R) value is 0.884 or 88.4%. The R value essentially measures the strength of the relationship between innovation and service quality (independent variables), which has a very strong relationship level of

$D = R^2 \times 100\%$

D = 0,884 x 100%

D = 88,4%

The very strong relationship is concluded based on the guidelines for interpreting correlation coefficients, which can be seen in Table 9.

Table 9 Interpretation Guidelines for Correlation Coefficients

Interval Coefficient	Relationship Level
0.000 – 0.199	Very Low
0.200 – 0.339	Low
0.400 – 0.599	Moderate
0.600 – 0.799	Strong
0.800 – 0.1000	Very Strong

Source : Sugiyono (2008)

The R-squared (R^2) value, also known as the coefficient of determination, is 0.782. This value indicates that 78.2% of the variation in the dependent variable, namely the level of learner satisfaction, can be explained by the independent variables (innovation and service quality). Conversely, 21.8% of the variation in learner satisfaction is attributed to other factors not examined in this study.

4. Discussion

The study titled 'The Influence of Learning Innovation and Service Quality on the Satisfaction Level of Non-Formal Education Participants in Ambon City' with a total of 45 respondents showed that: There is a partial influence of learning innovation on the satisfaction level of non-formal education participants in Ambon City. This is evident from the test results using SPSS 24 program, which showed that t-count > t-table (3.079 > 1.681071). Consistent with this, Xavier et al. (2025) found that educational innovation has a positive and significant effect on student satisfaction. Innovation in learning is necessary as a form of teacher professionalism in creating engaging and varied learning. In the learning process, innovation is required, which must be done by teachers so that the delivery of material becomes easily understandable by students (Gemnafle et al., 2018). With continuous learning innovation, students will be interested in following the learning process, as there will be new things applied in learning, thus increasing student satisfaction. This innovation is important not only for effective learning transfer but also for promoting continuous professional development among faculty members, leading to updated knowledge in each academic discipline (Chapman et al., 2021). Consequently, innovation in the educational process is positioned as a strategic mechanism for institutional transformation, academic relevance, and sustainable student satisfaction in contemporary educational institutions. Brew & Saunders, (2020) emphasize that effective management of these processes depends on setting clear goals that drive systemic balance. This perspective requires all institutional areas to be fully engaged in designing, implementing, and evaluating organizational pedagogical strategies (Alenezi, 2023). At a deeper level, it can propose integrating variables related to ideology, values, attitudes, and motivation adopted by academic and administrative staff into institutional goals. Describing the changes that must be applied within an organization to implement the type of innovation that suits the problem, such as open innovation, which uses a holistic methodology, resulting in the institution strengthening internal actions as a starting point before implementing innovation with external characteristics (Ebabu & Abebe, 2023).

The results of this study indicate that there is a significant influence between service quality and the level of satisfaction of learners partially in non-formal education units in Ambon City. Based on the results of data analysis using SPSS version 24, a t-count value of 5.295 was obtained, which is greater than the t-table value of 1.681071, indicating that the service quality variable has a real effect on the level of learner satisfaction. These findings support the view that the better the service quality provided by non-formal education institutions, the higher the level of satisfaction felt by learners.These results are also in line with research conducted by Dugenio-nadela et al., (2023), which concluded that optimal school service quality can foster a sense of satisfaction and comfort in learners. Similarly, good service aspects, such as speed, accuracy, friendliness, and attention to students' needs, are important factors in creating learning satisfaction (Limbu et al., 2023). Additionally, the results of other studies show a significant partial effect between service quality and student satisfaction (Hasan & Hosen, 2022). In other words, both in formal and non-formal education institutions, service quality is an important indicator that determines learner satisfaction. Learner satisfaction is a reflection of the success of educational institutions in providing services that meet their expectations and needs. If the services received by learners are adequate - for example, in terms of infrastructure, educator professionalism, responsiveness of educational staff, and clarity of information - learners will feel valued and comfortable in the learning process. Conversely, if the services provided are poor, such as delays in service, lack of attention to students, or inadequate facilities, it can lead to dissatisfaction and decreased motivation to learn. Thus, this study emphasizes that

improving service quality is an important strategy that must be implemented by non-formal education institutions in Ambon City to create a conducive learning atmosphere, increase learner loyalty, and strengthen the positive image of the institution in the eyes of the community.

This study indicates a significant influence between learning innovation and service quality on the satisfaction level of learners in non-formal education units in Ambon City. Based on the test results using SPSS version 24, an F-count of 75.465 was obtained, which is greater than the F-table of 3.22. This leads to the conclusion that simultaneously, both variables have an impact on learner satisfaction. These findings affirm that the higher the level of learning innovation and the better the service quality provided by educational institutions, the higher the learner satisfaction with the educational services they receive. These results align with Rahman (2019) findings, which state that service quality and innovation simultaneously influence customer satisfaction at PT PLN (Persero) Area Manado. Rahman's study reinforces the perspective that in both profit and non-profit organizations, innovation and quality service are crucial factors that can enhance customer satisfaction. This is also consistent with Parasuraman et al. (1988), who developed the SERVQUAL model, where the five dimensions of service quality—tangibles, reliability, responsiveness, assurance, and empathy—directly affect customer perception and satisfaction. In the context of education, similar findings were reported by Quiachon (2025), emphasizing that educational institutions can be regarded as service organizations that prioritize learner satisfaction as their primary customers. Therefore, innovation in learning processes, such as the implementation of digital learning methods, personalized learning, and project-based approaches, are essential to enhance learners' experiences. According to Fullan (2008), learning innovation is not solely related to technology use but also involves a paradigm shift in how educators interact with and guide learners to achieve optimal learning outcomes. This study also reveals a coefficient of determination (R^2) of 0.782, indicating that 78.2% of the variation in learner satisfaction can be explained by learning innovation and service quality, while the remaining 21.8% is influenced by other factors not examined, such as internal motivation, learning environment, or family support. These findings are consistent with those of Asfar & Suripto (2021) , which state that in the service sector, customer satisfaction is not solely dependent on one factor but is the result of interactions among various interrelated variables. Thus, it can be concluded that enhancing learning innovation and service quality is an effective strategy to increase learner satisfaction in non-formal education institutions in Ambon City. Educational institutions need to continuously promote innovation in learning methods, media, and approaches, as well as strengthen responsive, friendly, and learner-centered service systems, to create more meaningful and satisfying learning experiences.

5. Conclusion

Based on the findings, it can be concluded that learning innovation and service quality play a crucial role in enhancing learner satisfaction in non-formal education units in Ambon City. The learning innovations implemented by educators, such as the use of creative methods, technology integration, and collaborative and contextual approaches, create a more engaging and meaningful learning atmosphere. Learners feel more motivated and enthusiastic as the learning process not only focuses on delivering material but also actively involves them in learning activities that promote creativity and critical thinking skills. Meanwhile, good service quality from educational institutions, particularly in terms of educator professionalism, clear information, punctuality, friendliness, and adequate facilities, also increases learner satisfaction. Student-centered services create a sense of being valued and comfortable, fostering loyalty to the educational institution. The combination of innovative learning and quality services enables non-formal education institutions to compete and provide positive learning experiences for the community. As a recommendation, non-formal education institutions in Ambon City need to strengthen educators' capacity to implement innovative and adaptive learning models in response to technological advancements. Continuous training, inter-institutional collaboration, and support from local governments are essential to encourage relevant learning. Additionally, educational services must be managed professionally, paying attention to curriculum management, effective communication, and the availability of facilities that support learning comfort. Through synergy between learning innovation and service quality improvement, non-formal education institutions are expected to become inclusive, competitive, and learner-centered learning hubs that prioritize learner satisfaction and success. Here is a minor edit to make the text more polished: Based on the findings, it can be concluded that learning innovation and service quality are crucial in enhancing learner satisfaction in non-formal education units in Ambon City. Educators' implementation of learning innovations, such as creative methods, technology integration, and collaborative and contextual approaches, creates a more engaging and meaningful learning atmosphere. This approach not only delivers material but also actively involves learners in activities that promote creativity and critical thinking skills, resulting in increased motivation and enthusiasm. Furthermore, good service quality from educational institutions, particularly in terms of educator professionalism, clear information, punctuality, friendliness, and adequate facilities, also contributes to learner satisfaction. By providing student-centered services, learners feel valued and comfortable, fostering loyalty to the educational institution. The combination of innovative learning and quality services enables non-formal education institutions to compete and provide positive learning experiences for the community. To achieve this, non-formal education institutions in Ambon

City should strengthen educators' capacity to implement innovative and adaptive learning models in response to technological advancements. This can be achieved through continuous training, inter-institutional collaboration, and support from local governments, which are essential for encouraging relevant learning. Additionally, educational services must be managed professionally, with attention to curriculum management, effective communication, and the availability of facilities that support learning comfort. Ultimately, through synergy between learning innovation and service quality improvement, non-formal education institutions can become inclusive, competitive, and learner-centered learning hubs that prioritize learner satisfaction and success.

This study has several limitations that need to be considered. First, the study was only conducted in one region, namely Non-Formal Education Units in Ambon City, so the results may not be generalizable to other regions with different social, cultural, and learner characteristics. Second, this study only used a quantitative approach with questionnaire instruments, so it was not able to deeply explore learners' perceptions, experiences, and motivations that can be revealed through a qualitative approach. Third, the study only focused on two independent variables, namely learning innovation and service quality, whereas learner satisfaction is also possibly influenced by other factors such as learning environment, learning motivation, family support, and leadership style of educational institution managers. Fourth, the relatively short research duration may limit the depth of observation of the dynamics of learning and services taking place in the field. Future research is expected to expand the scope of study by involving more non-formal education institutions in various regions, making the results more representative and comprehensive. Subsequent researchers are also suggested to use a mixed-methods approach, combining quantitative and qualitative methods, to obtain a more holistic picture of the factors influencing learner satisfaction. Additionally, other variables such as learning motivation, social environment, leadership role, and educational facility support should be included in the research model to enrich the analysis results. It is also recommended that future research conduct longitudinal observations to assess changes in learner satisfaction over time, along with the development of learning innovations and improvements in service quality. Thus, further research will be able to contribute more profoundly to efforts to improve the quality of non-formal education in Indonesia.

This study provides significant benefits in the development of theory and science, particularly in the fields of non-formal education, educational management, and learning innovation. Theoretically, this study strengthens and expands the investigation of the relationship between learning innovation and service quality on learner satisfaction. The research findings support previous theories that suggest learning satisfaction is not only influenced by the content and methods of learning but also by the quality of educational services provided by institutions. Thus, this study enriches the scientific literature on the concept of learner satisfaction in the context of non-formal education, which has received relatively less attention compared to formal education. In terms of scientific contribution, this study provides insights into the development of innovative learning models and strategies for improving service quality in non-formal educational institutions. The research results indicate that learning innovations oriented towards collaboration, creativity, and problem-solving, as well as quality services - in terms of management, facilities, and educator professionalism - are essential combinations for enhancing learner satisfaction. This study also provides a scientific basis for the development of service-based educational management theory and innovation, which is relevant for application in various community education contexts. Furthermore, the research findings can serve as an academic reference for researchers, lecturers, and students who wish to conduct further studies on the relationship between innovation, service quality, and learning satisfaction. Therefore, this study not only contributes to the practical realm of education but also strengthens the theoretical foundation in studies on improving the quality of non-formal education in Indonesia.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

References

[1] Abdulrahaman, M. D., Faruk, N., Oloyede, A. A., Surajudeen-bakinde, N. T., & Olawoyin, L. A. (2020). Heliyon Multimedia tools in the teaching and learning processes : A systematic review. *Heliyon*, *6*, 1–14. https://doi.org/10.1016/j.heliyon.2020.e05312

[2] Abednego, A., Rahabav, P., & Batlolona, J. R. (2023). Performance analysis towards excellent schools. *International Journal of Learning, Teaching and Educational Research*, *22*(7), 70–86. https://doi.org/10.26803/ijlter.22.7.4

[3] Alenezi, M. (2023). Digital Institution in Higher Education. *Education Sciences*, *13*, 1–18.

[4] Asfar, A. H., & Suripto, P. (2021). The effect of services and prices on customer satisfaction. *Bina Bangsa International Journal of Business and Management (BBIJBM)*, *1*(3), 202–211.

[5] Brew, A., & Saunders, C. (2020). Making sense of research-based learning in teacher education. *Teaching and Teacher Education*, *87*, 1–11. https://doi.org/10.1016/j.tate.2019.102935

[6] Çelik, F., & Baturay, M. H. (2024). Technology and innovation in shaping the future of education. *Smart Learning Environments*, *11*, 1–6. https://doi.org/10.1186/s40561-024-00339-0

[7] Chapman, E., Pantoja, T., Kuchenmüller, T., Sharma, T., & Terry, R. F. (2021). Assessing the impact of knowledge communication and dissemination strategies targeted at health policy - makers and managers : an overview of systematic reviews. *Health Research Policy and Systems*, *19*, 1–14. https://doi.org/10.1186/s12961-021-00780-4

[8] Chotim, E. R. (2021). The role of community learning activity centers in overcoming social problems. *AL-ISHLAH: Jurnal Pendidikan*, *13*(3), 2689–2698. https://doi.org/10.35445/alishlah.v13i3.1446

[9] Cranton, P. (2006). Fostering authentic relationships in the transformative classroom. In *New Directions for Adult and Continuing Education* (Issue 109). https://doi.org/10.1002/ace

[10] Dematthews, D. E. (2014). How to improve curriculum leadership: integrating leadership theory and management strategies. *The Clearing House*, *87*, 192–196. https://doi.org/10.1080/00098655.2014.911141

[11] Donkoh, R., On, W., Thomas, A., Donkor, J., Twerefoo, O., Kudwo, M., & Yeboah, S. (2023). Heliyon Effects of educational management on quality education in rural and urban primary schools in Ghana. *Heliyon*, *9*(11), 1–14. https://doi.org/10.1016/j.heliyon.2023.e21325

[12] Dugenio-nadela, C., Cañeda, D. M., Tirol, S. L., Samillano, J. H., Pantuan, D. J. M., Piañar, J. C., Tinapay, A. O., Casas, H. M. S., Cometa, R. A., Conson, S. O., Urot, M. V, Ancot, J. M., Nadela, R. L., Dugenio-terol, I., Baluyot, A. M., Pevida, K., Olivar, J. I., & Decena, E. (2023). Service quality and student ' s satisfaction in higher education institution. *Journal of Human Resource and Sustainability Studies*, *11*, 858–870. https://doi.org/10.4236/jhrss.2023.114049

[13] Ebabu, M., & Abebe, T. (2023). How does strategic planning in fl uence the performance of fi nancial institutions ? An empirical study of Ethiopia. *IIMB Management Review*, *35*(1), 26–39. https://doi.org/10.1016/j.iimb.2023.03.003

[14] Fullan, M. (2008). *Education for Continuous Improvement*. 1–2.

[15] Gemnafle, M., Waimuri, S. P., & Batlolona, J. R. (2018). Organizational climate of the school and teacher performance improvement in the 21 st Century. *International Journal of Science and Research (IJSR)*, *7*(2), 119-126. https://doi.org/10.21275/ART20179865

[16] Granger, K. L., & Chow, J. C. (2025). Classroom carrying capacity : a resource and limiting factors framework. *Educational Psychology Review*, *37*(1), 1–29. https://doi.org/10.1007/s10648-025-09999-x

[17] Haque, A., & David, S. A. (2022). Effective curriculum implementation for optimal teaching and learning experience: a study from a private school in Dubai. *International Journal of Curriculum and Instruction*, *15*(1), 1–20.

[18] Harris, A., Jones, M., Cheah, K. S. L., Devadason, E., & Adams, D. (2017). Exploring principals' instructional leadership practices in Malaysia: insights and implications. *Journal of Educational Administration*, *55*(2), 207–221.

[19] Hasan, M., & Hosen, Z. (2022). Influence of university service quality on student satisfaction and loyalty in bangladesh : with the mediating role of university reputation and external prestige 2. literature review and hypotheses development. *The Journal of Quality in Education*, *12*(19), 169–181.

[20] Ikram, M., & Kenayathulla, H. B. (2023). Education quality and student satisfaction nexus using instructional material , support , classroom facilities , equipment and growth : Higher education perspective of Pakistan. *Frontiers in Education*, *8*, 1–15. https://doi.org/10.3389/feduc.2023.1140971

[21] Karatas, S., Donmez, S. A., Yoruk, T., Ozdemir, S. N. Y., Gok, R., & Dogan, A. (2024). Teachers' perceptions regarding effective school features and effective leadership qualifications of school principals in Turkey. *SAGE Open*, 1–12. https://doi.org/10.1177/21582440241233978

[22] Khaing, Y. M., & Cho, A. (2019). Forecasting academic performance using multiple linear regression. *International Journal of Trend in Scientific Research and Development*, *3*(5), 1187–1189.

[23] Kirkwood, A., & Price, L. (2013). Technology-enhanced learning and teaching in higher education : what is ' enhanced ' and how do we know ? A critical literature review. *Learning, Media and Technology*, *39*(1), 37–41. https://doi.org/10.1080/17439884.2013.770404

[24] Kwangmuang, P., Jarutkamolpong, S., Sangboonraung, W., & Daungtod, S. (2021). Heliyon The development of learning innovation to enhance higher order thinking skills for students in Thailand junior high schools. *Heliyon*, *7*(6), 1–13. https://doi.org/10.1016/j.heliyon.2021.e07309

[25] Lee, Y. (2011). A study on the effect of teaching innovation on learning effectiveness with learning satisfaction as a mediator. *World Transactions on Engineering and Technology Education*, *9*(2), 92–101.

[26] Limbu, Y. B., Texas, A., Christi, C., & Impact, L. (2023). Impact of e-learning service quality on student satisfaction during the Covid-19 pandemic : A systematic review Recommended citation : Impact of e-learning service quality on student satisfaction during the Covid-19 pandemic : A systematic review Yam B . . *Knowledge Management & E-Learning*, *15*(4), 523–538.

[27] Mariyono, D. (2025). AI ' s role in transforming learning environments : a review of collaborative approaches and innovations. *Quality Education for All*, *2*(1), 265–288. https://doi.org/10.1108/QEA-08-2024-0071

[28] Mincu, M. (2022). Why is school leadership key to transforming education ? Structural and cultural assumptions for quality education in diverse contexts. *PROSPECTS*, *52*(3), 231–242. https://doi.org/10.1007/s11125-022-09625-6

[29] Muthuswamy, V., & Pavithra, J. (2024). Interactive Teaching Materials' Impact on Students' Perception of Teaching Quality: Mediated by Engagement. *Foro de Educación*, *22*(2), 44–65.

[30] Mutiara, D. (2020). Strategic management in achieving service standards at the center for community learning activities (PKBM) Keyword s. *Asian Journal of Contemporary Education*, *4*(1), 57–68. https://doi.org/10.18488/journal.137.2020.41.57.68

[31] Oetjen, L. A., Connor, C., Werneburg, B., Stevens, S., Kane, S., Elias, R., Ann, L., Connor, C., Werneburg, B., Stevens, S., & Elias, R. (2025). Evaluating Leadership Training for Managers in Healthcare: Focusing on Effective Communication. *Journal of Healthcare Leadership*, *17*, 649–664. https://doi.org/10.2147/JHL.S528912

[32] Persson, R., Demir, E. K., & Wennberg, K. (2025). Principal instructional leadership and teacher collaboration : A longitudinal study of the in fluence on pupil achievement. *Educational Management Administration and Leadership*, 1–21. https://doi.org/10.1177/17411432251350793

[33] Quiachon, L. Y. (2025). The role of e-service quality in shaping students ' satisfaction in the pandemic context. *Review of Integrative Business and Economics Research*, *14*(3), 548–561.

[34] Rahabav, P., & Souisa, T. R. (2021). Evaluation of non-formal education management in Maluku Province, Indonesia. *International Journal of Evaluation and Research in Education*, *10*(4), 1395–1408. https://doi.org/10.11591/IJERE.V10I4.21116

[35] Rahman, S. (2019). THE EFFECT OF QUALITY SERVICE AND INNOVATION TOWARD CUSTOMER SATISFACTION ON PLN (PERSERO) AREA MANADO. *Jurnal EMBA : Jurnal Riset Ekonomi, Manajemen, Bisnis Dan Akuntansi*, *7*(1), 301–311.

[36] Rapanta, C., Botturi, L., Goodyear, P., Guàrdia, L., & Koole, M. (2020). Online university teaching during and after the covid-19 crisis: refocusing teacher presence and learning activity. *Postdigital Science and Education*, *2*(3), 923–945. https://doi.org/10.1007/s42438-020-00155-y

[37] Rice, D. B., Taylor, R., Forrester, J. K., Rice, D. B., Taylor, R., Forrester, J. K., & Rice, D. B. (2020). The unwelcoming experience of abusive supervision and the impact of leader characteristics : turning employees into poor organizational citizens and future quitters quitters. *European Journal of Work and Organizational Psychology*, *00*(00), 1–18. https://doi.org/10.1080/1359432X.2020.1737521

[38] Sahalessy, A., Batlolona, J. R., Lokollo, L. J., & Abednego, A. (2025). Examining the impact of tutor effectiveness and student motivation on academic achievement in package c programs : an analysis of community learning

centers in Ambon City. *Al-Ishlah: Jurnal Pendidikan*, *17*(2), 1879–1891. https://doi.org/10.35445/alishlah.v17i2.5652

[39] Sander, A., Souza, C. De, & Debs, L. (2024). Social Sciences & Humanities Open Concepts , innovative technologies , learning approaches and trend topics in education 4 . 0 : A scoping literature review. *Social Sciences & Humanities Open*, *9*, 1–16. https://doi.org/10.1016/j.ssaho.2024.100902

[40] Sebastien, N. (2017). Effective Educational Leadership Training for Transformative Leadership. *Journal of Interdisciplinary Teacher Leadership*, *2*(2), 27–31.

[41] Serdyukov, P. (2025). 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. https://doi.org/10.1108/JRIT-10-2016-0007

[42] Sharma, A. R., Mandot, P. M., & Singh, J. (2023). Innovative Learning Models and Their Impacts on the Transformation in Education. *International Journal for Research in Applied Science & Engineering Technology*, *11*(10), 1793–1798.

[43] Shyiramunda, T., & Bersselaar, D. Van Den. (2024). Local community development and higher education institutions : Moving from the triple helix to the quadruple helix model. In *International Review of Education* (Vol. 70, Issue 1). Springer Netherlands. https://doi.org/10.1007/s11159-023-10037-7

[44] Sunaengsih, C., Anggarani, M., Amalia, M., Nurfatmala, S., & Naelin, S. D. (2019). Principal Leadership in the Implementation of Effective School Management. *Mimbar Sekolah Dasar*, *6*(1), 79–91. https://doi.org/10.17509/mimbar-sd.v6i1.15200

[45] Sugiyono. (2008). *Metode Penelitian Kuantitatif/Kualitatif dan R&D*. Bandung: Alfabeta.

[46] Taylor, M., Klein, E. J., Munakata, M., Trabona, K., Mcmanus, J., Taylor, M., Klein, E. J., Munakata, M., & Trabona, K. (2018). Professional development for teacher leaders : using activity theory to understand the complexities of sustainable change. *International Journal of Leadership in Education*, *00*(00), 1–21. https://doi.org/10.1080/13603124.2018.1492023

[47] Tupari, Burmansah, Pramno, E., & Ardianto, H. (2023). Student satisfaction : School services and learning-teaching quality as influencing factors. *Lighthouse International Conference Proceeding*, *1*, 210–218.

[48] Tveitnes, M. S., Helgevold, N., & Moen, V. (2025). Bridging the gap between theory and practice ? Working with digital problem-based cases to strengthen student teachers as research- literate. *Discover Education*, *4*, 1–15.

[49] Wanti, M., Wesselink, R., Biemans, H., & Brok, P. Den. (2022). Determining factors of access and equity in higher education : A systematic review. *Equity in Education & Society*, *1*(March), 279–296. https://doi.org/10.1177/27526461221092429

[50] Xavier, D., Avecillas, A., Anibal, R., Alipio, L., Esteban, M., Avecillas, A., Xavier, D., Avecillas, A., Anibal, R., Alipio, L., Paola, C., Lozano, P., Esteban, M., Avecillas, A., & García, H. D. (2025). students in Ecuador " Impact of educational process innovation on the satisfaction of higher education students in Ecuador. *Business Perspectives*, *9*(2), 64–78. https://doi.org/10.21511/kpm.09(2).2025.06

[51] Zhang, Z., & Chen, W. (2018). A Systematic Review of the Relationship Between Physical Activity and Happiness. *Journal of Happiness Studies*, *20*, 1–15. https://doi.org/10.1007/s10902-018-9976-0

[52] Zhu, X., & Shek, D. T. L. (2021). *Promoting Service Leadership Qualities and Well-Being among University Students : Evaluation Findings in Hong Kong*. 2475–2495.