
EVALUATION OF THE EFFECTIVENESS OF SELF-SERVICE-BASED CIRCULATION SERVICES AT THE UIN K.H. ABDURRAHMAN WAHID PEKALONGAN LIBRARY: A QUALITATIVE STUDY**Arditya Prayogi^{1*}, Riki Nasrullah², Khusnu Asirah³**^{1,3}UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia²Universitas Negeri Surabaya, IndonesiaE-mail: arditya.prayogi@uingusdur.ac.id*, rikinasrullah@unesa.ac.id², khusnu.asirah@uingusdur.ac.id³

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This study examines the effectiveness of self-service circulation services at the UIN K.H. Abdurrahman Wahid Pekalongan Library as a response to the demands of university library services that increasingly emphasize efficiency, responsiveness, and the use of technology. This study begins with the need to understand not only how self-service circulation services are implemented, but also how their effectiveness is interpreted by users and librarians, what factors support and hinder their performance, and strategic recommendations needed to strengthen services in the future. The study aims to evaluate the implementation and effectiveness of a self-service circulation system through a qualitative approach with a case study design. Data were collected through observation, interviews with librarians and users, and documentation of circulation service procedures. The results show that circulation services are implemented in the form of a hybrid service model that integrates the OPAC, self-lending kiosks, bookdrop facilities, and librarian support. Service effectiveness is shaped by three main determinants: clarity of service procedures, functional technology infrastructure, and readiness of service actors. These three factors can function as both supporters and obstacles. This study confirms that the effectiveness of self-circulation services needs to be understood as a result of the interaction between user convenience, operational regularity, and institutional control.

Keywords: Service effectiveness, College libraries, Self-service, Library circulation.**INTRODUCTION**

Beyond merely serving their traditional function as physical collection repositories, university libraries are now transforming into dynamic academic service units that are required to integrate effectiveness, responsiveness, and adaptability to technological acceleration. Within this ecosystem, circulation services occupy the most intensive point of contact between institutions and users, given that this is where fundamental activities such as borrowing, returning, and renewing collections are directly executed. Consequently, operational quality in the circulation department is no longer merely a routine technicality, but rather a primary determinant that shapes user perceptions and serves as a crucial parameter in measuring the library organization's performance holistically. In the context of information management, the significance of service quality is no longer sufficient if quantified solely through collection statistics or visitor traction, but must be dissected through how these services are internalized, operated, and validated by users in the reality of daily practice (Rahmat Alifin & Nurdiansyah, 2025).

The paradigm shift in library services in the last decade has consistently led to the implementation of self-service systems to accelerate workflow and expand user autonomy (Fernando et al., 2026). The UIN K.H. Abdurrahman Wahid Pekalongan Library has systematically integrated this pattern into its circulation service structure. Based on applicable operational protocols, users are directed to browse through the

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OPAC, independently retrieve collections from the shelves, and finalize transactions through the Self-Lending Kiosk. Meanwhile, for circulation preservation, users can utilize the bookdrop facility or Self-Return Kiosk. Although flexible, this system still provides the option of staff assistance when technical problems occur at the kiosks. This indicates that the UIN Pekalongan Library has adopted a hybrid service model, a configuration that synergizes technological sophistication, standard procedures, and human interaction in a proportional manner.

The evolution towards self-service circulation services has triggered the urgency of in-depth effectiveness evaluations, not just to verify infrastructure availability, but also to measure the system's functionality in mitigating user challenges. Self-service circulation services provide the perspective that the success of this mechanism is not solely determined by the sophistication of the hardware, but is also influenced by user motivation and the strategic role of librarians in bridging the adoption of the technology. Thus, the effectiveness of self-service cannot be assumed linearly based on the availability of the device alone, but must be explored through the dimensions of user experience, process simplification, smooth bureaucratic flow, and the solidity of the surrounding organizational support (A. Azizah & Wanastri, 2024). For higher education institutions, the main discourse has now shifted from the implementation aspect to the qualitative aspect, namely the extent to which these automated mechanisms and systems actually provide added value to service performance.

In line with this, user preferences and expectations are the absolute foundation in the quality adjudication process (Schrepp et al., 2023). The implementation of qualitative evaluation models such as LibQUAL+ provides a precedent that a comprehensive understanding of library quality must be rooted in user perceptions of accessibility, system reliability, and the interactive experience they experience. Referring to the service profile in higher education, discrepancies between users' ideal expectations and the empirical reality they receive are still frequently found, so that a periodic evaluative audit mechanism is needed for the sake of continuous improvement and precision in managerial decision-making (Neshat & Dehghani, 2013). In the context of self-service based circulation, an evaluative approach is needed that places the dialectic between the user's experience and the professional perspective of the staff so that the reality of the service can be described in its entirety.

For the UIN K.H. Abdurrahman Wahid Pekalongan Library, this review is even more crucial considering that the institution's circulation services have complex operational rules, including restrictions on loan quotas based on academic level, loan duration, and administrative sanctions for late payments. The integration of the OPAC, self-service kiosks, and bookdrop facilities is a manifestation of the institution's systematic efforts to increase efficiency and ease of access. However, the availability of sophisticated devices and written procedures does not guarantee that the service process has reached its optimal level of effectiveness, both in terms of librarian work efficiency and user satisfaction (Bessie et al., 2025). This is where the significance of this study lies, namely to go beyond the description of physical facilities and enter into an in-depth analysis of how these systems are operated, interpreted, and evaluated in the dynamics of real library service practices.

(University) libraries need to be examined as complex organizational entities through the lens of process effectiveness, service quality, and operational optimization. This review is oriented toward evaluating organizational performance by exploring the internal mechanisms of the service system, identifying bottlenecks, and capturing the dialectic of the experiences of the actors involved (Wibowo, 2023). Within this framework, a qualitative orientation is adopted not merely as a technical choice, but as

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a paradigm for capturing the narrative depth of users and librarians that conventional statistical data cannot capture. This approach allows for the exploration of phenomenological dimensions within self-service, such as intuitiveness of use, discursive clarity of procedures, and the psychological responsiveness of staff in dealing with dynamics in the field.

Based on the background explanation, this study aims to evaluate the effectiveness of self-service based circulation services at the UIN K.H. Abdurrahman Wahid Pekalongan Library through a qualitative study that integrates user experience and librarians' functional perspectives. Specifically, this study is designed to answer the following research questions: (1) how the implementation mechanism of self-service based circulation services is applied in the field; (2) how the meaning of the effectiveness of these services is constructed according to the perceptions of users and librarians; (3) identification of determinant factors that support and hinder the effectiveness of the self-service circulation system; and (4) formulation of applicable strategic recommendations to strengthen the performance of library circulation services in the future.

LITERATURE REVIEW

Circulation services are at the core of library operations because they serve as the primary convergence point connecting service systems, staff, collections, and users. In the university library ecosystem, the circulation dimension extends beyond the mechanical transaction of borrowing and returning materials; it encompasses aspects of accessibility, procedural transparency, system reliability, and consistent service quality (S. E. N. Azizah, 2026). Therefore, evaluation of the circulation unit must be placed within the framework of an organizational system performance audit, not simply an administrative assessment of collection traffic. This perspective is crucial because service effectiveness is the (ultimate) result of the interaction between procedural design, technological acceleration, staff competence, and users' empirical experience in utilizing the facility. At the UIN K.H. Abdurrahman Wahid Pekalongan Library, this system characteristic is manifested in a hybrid flow that integrates the OPAC, self-service lending kiosks, self-service return facilities (bookdrops), and staff intervention as a safety valve when technical problems occur.

The construct of service effectiveness in this study is defined as the degree to which functional objectives are achieved in providing simplification, fluency, precision, and utility for users. In this understanding, effectiveness should not be reduced to the availability of physical infrastructure or the adoption of cutting-edge technology, but rather to the extent to which the system is able to eliminate user obstacles in meeting their information needs. This type of assessment is rooted in the service management paradigm, where system performance is measured by its ability to mitigate operational friction and produce a user experience that aligns with institutional quality standards. Consequently, in the context of self-service-based circulation, effectiveness must be dissected through qualitative indicators such as procedural intuitiveness, clarity of navigation flow, device reliability, and the equivalence between service promises and the reality of use. This approach ensures that the evaluation touches on the functional substance of the service, not merely the technical formalities of the hardware (Cook & Heath, 2001).

The adoption of self-service technology is primarily driven by the urgency of process efficiency, transaction acceleration, and expanding user autonomy. However, the integration of self-service technology does not automatically guarantee service success. The adoption of self-service checkout systems is heavily influenced by user motivation and the strategic role of librarians in facilitating the

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system's implementation. This indicates that self-service is not a standalone entity, but rather part of a service ecosystem that still requires organizational support, clear instructions, and user acceptability (Fachriz et al., 2022). Therefore, when the UIN Gus Dur Library operates an independent kiosk, the focus of the study is no longer on the existential aspect of the tool, but rather on how the dialectic of experience between users and officers shapes the meaning of effectiveness in everyday practice.

In the discourse of library evaluation, the user perspective occupies a central position because service quality ultimately boils down to subjective perceptions. The LibQUAL+ theoretical framework is based on the premise that library quality must be understood through the voice of the user, particularly at the intersection of expectations and actual performance. Before quality can be formally measured, institutions need to identify what users perceive as reliable and useful service. From this perspective, a qualitative approach is a highly relevant instrument for capturing nuances of experience that are often missed by quantitative mapping (Cook & Heath, 2001). For this research, the framework functions as an anchor to position the narrative of UIN Gus Dur librarians as a primary data source in constructing the effectiveness of independent circulation services.

Furthermore, the quality dimension of library services is closely related to the institution's ability to map discrepancies between the ideal service design and the reality of its implementation in the field. Various evaluations of academic libraries have shown that available facilities are often not fully aligned with the actual needs of users, making periodic assessments imperative to identify areas for strategic improvement (Gunarathna, 2024; Hahury, 2026; Yeni et al., 2024). To maintain the quality of university libraries, user-based evaluation is needed to assist managers in setting priorities and adapting service models to current academic dynamics. This emphasizes that the effectiveness of self-service circulation should not be assumed unilaterally by service providers; such effectiveness can only be considered solid if the system is proven to be intuitive, reliable, and significantly supports users' research and learning activities (Santoso & Hartono, 2022).

In the specific context of the UIN K.H. Abdurrahman Wahid Pekalongan Library, the urgency of this evaluation becomes even more acute given the complexity of the accompanying operational regulations, ranging from OPAC searches, independent circulation, to late-payment sanction mechanisms. This digitized service structure does indeed demonstrate a neat infrastructure, but from an organizational evaluation perspective, structural neatness does not always directly correlate with effective use (Nurmaya, 2025). It is possible that procedures that are considered clear by management are perceived as ambiguous by users, or that the available tools still leave a high level of dependence on manual assistance from staff.

Based on this framework, this study positions self-service circulation services as an organizational service system whose effectiveness is constructed by three main pillars: service process design, user experience, and strategic support from librarians. Therefore, the relevant literature in this study not only discusses service quality in general, but also specifically highlights the adoption of self-service technology in circulation and the use of quality evaluation as a basis for operational optimization. From this, the position of this study becomes clear, where it is not merely to test satisfaction in statistical figures, but also to understand in depth the functionality of circulation services at the UIN Gus Dur Library, identify the supporting and inhibiting determinants, and formulate strategic recommendations for improving service performance in the future.

METHOD

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This research uses a qualitative approach with a case study design, because the research is focused on one specific institutional context, namely the self-service-based circulation service at the UIN K.H. Abdurrahman Wahid Pekalongan Library. This design was chosen because it allows researchers to understand in depth how a service system is run in a real context, including the relationship between formal procedures, the use of technology, user experience, and the role of librarians in daily service practices (Syaifuddin et al., 2025). The focus of the research was not on statistically measuring relationships between variables, but rather on examining service effectiveness from the perspective of implementation, user experience, and the associated operational dynamics. This method is consistent with the evaluative nature of organizational service system research, as qualitative case studies provide a more comprehensive understanding of processes, barriers, and opportunities for improvement (Akmal et al., 2024).

The research location is the UIN K.H. Abdurrahman Wahid Pekalongan Library, with a focus on circulation services that have utilized the OPAC, Self-Lending Kiosk, and Self-Return Kiosk (bookdrop) as stated in the library's official service guide. Research data was obtained through three main techniques: observation, interviews, and documentation. Observations were conducted to observe the circulation service flow, user interaction patterns with self-service facilities, and staff involvement in supporting the service process. Interviews were conducted purposively with informants who were considered to have direct understanding of service practices, including librarians in the circulation service section and users who had used self-service services. Meanwhile, documentation was used to review the rules, procedures, and operational guidelines for services relevant to the research focus.

Data analysis was conducted in stages starting from the data collection process, following the flow of data reduction, data presentation, and conclusion drawing. During the reduction stage, data from interviews, observation notes, and service documents were selected and focused on themes related to service effectiveness, such as ease of use, procedural clarity, facility reliability, technical obstacles, and staff responsiveness. The organized data was then presented in thematic descriptions to more clearly understand the relationships between findings. From this process, researchers then drew interpretive conclusions to explain how self-service circulation services are implemented, how their effectiveness is perceived by stakeholders, and the factors influencing their implementation. This approach was chosen because it is suitable for generating a deep understanding of the service system being evaluated.

To maintain data validity, this study employed source and technical triangulation, comparing information from librarians, users, observations, and available service documents. Furthermore, the researcher checked the consistency of findings throughout the analysis process to ensure that the resulting interpretations remained grounded in field data. This effort is crucial in qualitative research because the quality of findings is determined not only by the quantity of data but also by the credibility of the interpretation process. Therefore, this method design is expected to yield a valid and contextual overview of the effectiveness of self-service circulation services at the UIN K.H. Abdurrahman Wahid Pekalongan Library, while also providing an empirical basis for recommendations for service improvements relevant to organizational needs.

RESULTS AND DISCUSSION

Application of Self-Service Circulation Service Implementation Mechanism at the UIN K.H. Abdurrahman Wahid Pekalongan Library

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The implementation of self-service circulation services at the UIN K.H. Abdurrahman Wahid Pekalongan Library is carried out through a service flow that combines collection browsing, self-transaction processing, and staff support at specific points. Based on official service guidelines, users first browse library materials through the Online Public Access Catalog (OPAC), then search for and retrieve collections directly from the shelves, and then process loans through the Self-Lending Kiosk. After the transaction is completed, users stamp the return date sheet as a sign of service administration. For the return process, the service still provides a staff role by showing an academic ID card, while returns outside of business hours and on holidays are facilitated through bookdrop. This structure demonstrates that self-service in the library does not exist as a fully automated system, but rather as a hybrid service model that combines standalone technology and human operational support in one complementary service flow (Ogbonna et al., 2014).

From an operational perspective, the implementation demonstrates that self-service is primarily placed at the core transaction stage of borrowing, while other functions are still managed semi-centrally. Collection browsing is conducted independently through the OPAC, meaning users are guided to first build information independence before entering the circulation process. Afterward, users are no longer entirely dependent on staff for checkout, as borrowing transactions are handled by self-service kiosks. However, at the return stage, a combination of staff-based services and self-service facilities through bookdrops is still evident. This pattern indicates that the implementation of self-service at the UIN Gus Dur Library is more accurately understood as partial self-service circulation, a system that shifts some processes to users to increase efficiency, while still maintaining the role of staff as a support system, particularly to maintain smoothness, accuracy, and continuity of operations. These findings suggest that the success of self-service circulation depends not only on the device but also on how the service is integrated with the librarian's role and user habits (S. E. N. Azizah, 2026; Sureshkumar et al., 2025).

From a service design perspective, the implementation of self-service in this library emphasizes three main elements: access to collection information, transaction independence, and flexibility in returns. The first element is evident in the use of the OPAC as the initial gateway to browsing the collection. The second element is evident in the presence of the Self-Service Loan Kiosk, which positions the user as the primary actor in the loan transaction. The third element is evident in the presence of the bookdrop, which extends the reach of return services beyond business hours. These three elements demonstrate that self-service here functions not merely as a technological innovation, but as a reorganization of the service process to be more efficient and responsive to user needs. From the perspective of evaluating an organization's service system, such arrangements are important because they demonstrate an institutional effort to break up service queues, reduce reliance on full-time face-to-face service, and expand service access without always increasing the burden of direct interaction with staff (Alam, 2018).

However, the implementation of this service also demonstrates that self-service has not completely eliminated the administrative dimension and procedural controls within circulation services. The official guidelines issued by the library still emphasize the loan limit based on educational level, loan duration, renewal mechanism, and daily late penalties per book. This means that the digitization of circulation services at the UIN Gus Dur Library does not change the substance of service governance, but rather the way the service is implemented. In other words, self-service technology operates within a robust service regulatory framework. This is important because it demonstrates that implementation effectiveness is determined not only by the ease of use of the tool, but also by the system's ability to maintain procedural

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order, administrative certainty, and disciplined collection circulation. In the context of academic libraries, this combination of partial automation and administrative control can be understood as a form of organizational adaptation to maintain a balance between service efficiency and accountability in collection management (Fauzi, 2022).

Thus, the implementation of self-service circulation services at the UIN K.H. Abdurrahman Wahid Pekalongan Library can be understood as a hybrid service system that runs through a self-guided flow where users browse the collection independently through the OPAC, make loan transactions through self-service kiosks, and utilize flexible return options through staff or bookdrops. This pattern shows that the library has moved towards a more modern, efficient, and user-oriented service model, while still maintaining staff support and procedural controls as elements that guarantee the continuity of services. This implementation method is relevant to the orientation of the organization's service performance evaluation, because it shows how technology does not completely replace the service system (Irwansyah et al., 2023), rather, it is designed to strengthen the effectiveness of the circulation process in the context of the real needs of university libraries. This emphasis on user experience and system functionality is also in line with the library service quality approach, which places the actual process of service use as the primary basis for evaluation (Fatmawati, 2012).

Construction of the Meaning of the Effectiveness of the Service According to the Perceptions of Library Users and Librarians

The effectiveness of self-service based circulation services is not interpreted solely as the existence of devices or transaction speed, but rather as the success of the service in simplifying the borrowing and return process, reducing obstacles, and providing a sense of assistance to users (Mulyono et al., 2025). From a user perspective, effectiveness tends to be constructed through direct experience when dealing with the service flow, such as whether the collection is easy to navigate through the OPAC, whether the self-service lending kiosk is easy to use, whether the procedures are clear, and whether the service remains accessible when users need it. In other words, for users, a service is considered effective when the system does not complicate their academic needs, but instead speeds up access to the collection. This way of interpreting effectiveness is in line with the view that the quality of library services needs to be read from the voice of users, especially when the system is able to reduce barriers and increase ease of access (Fathmi, 2017).

On the other hand, librarians tend to interpret effectiveness in a more operational and organizational sense. Effectiveness is understood not only as the smooth use of self-service kiosks, but also as the regularity of service flow, the accuracy of transactions, the maintenance of borrowing discipline, and the system's ability to support the workload of circulation services. Within this framework, self-service devices are considered effective if they can expedite some transaction processes without eliminating the administrative controls required by the library (Mulyono et al., 2025). The UIN K.H. Abdurrahman Wahid Pekalongan Library service guide itself shows that although borrowing can be done through self-service kiosks, the library still provides a service channel through staff when devices are inaccessible, and returns also remain within the framework of rules regarding loan periods, extensions, and late penalties. This shows that, from a librarian's perspective, service effectiveness is not synonymous with full automation, but rather with creating a balance between ease of service and accountability in collection management.

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When these two perspectives are read together, it is clear that the construction of the meaning of effectiveness is shaped by the actors' positions within the service system. Users place effectiveness on aspects of ease, speed, clarity, and accessibility, while librarians place it on aspects of process smoothness, administrative order, system reliability, and service continuity. This difference in emphasis does not indicate a contradiction, but rather shows that the effectiveness of self-service circulation services is relational, where it is considered effective when user needs can be met without disrupting the service governance that librarians must maintain. This is important from the perspective of evaluating organizational service systems, because it shows that service success cannot be assessed from only one perspective. A new service can be called effective when the user experience and organizational needs meet in a process that is both considered to be running well (Monoarfa, 2012). This view also strengthens the view that the quality of library services needs to be understood from the dimensions that live in the user experience, not just from the formal design of the service (Mulyono et al., 2025; Rohman, 2020).

Thus, the construction of the meaning of the effectiveness of self-service-based circulation services at the UIN K.H. Abdurrahman Wahid Pekalongan Library can be understood as the result of the encounter between user orientation and service management orientation. For library users, effectiveness is present when the system feels easy, helpful, and does not hinder academic needs; for librarians, effectiveness is present when the service runs orderly, can be controlled, and still allows for the maintenance of service quality. In this context, self-service is not interpreted simply as a technological innovation, but as an instrument for restructuring the service process to be more efficient without losing institutional control. Evaluation of the effectiveness of circulation services must be emphasized by not simply stopping at the presence or absence of self-service facilities, but also needs to examine how the meaning of effectiveness is formed, negotiated, and experienced by the actors involved.

Determinant Factors Supporting and Inhibiting the Effectiveness of the Independent Circulation System

The first supporting factor lies in a clearly documented service structure. Library documentation shows that circulation services at UIN Gus Dur do not operate sporadically, but rather follow a defined process, including searching collections using the OPAC (Open Access), borrowing through self-service kiosks, returning through staff or bookdroppers, and managing loan periods, collection sizes, renewals, and late fees. The clarity of these procedures is crucial because the effectiveness of self-service relies heavily on users' ease of understanding what to do at each stage. Furthermore, a clear structure also helps librarians maintain service consistency. However, the more procedural points within a service, the greater the likelihood of obstacles for unfamiliar users, particularly when they must navigate from searching collections, picking up books, self-service transactions, to completing returns. Thus, while well-organized procedures are a supporting factor, they can also become a barrier if not accompanied by a highly legible flow for users (Rahmawati & Nazhifah Suryana, 2024).

The second supporting factor is the availability of self-service infrastructure that allows some circulation processes to be carried out without complete reliance on staff. The existence of OPACs, self-service loan kiosks, and bookdrops demonstrates that libraries have built a technological base that supports process efficiency, service flexibility, and expanded access to returns outside of business hours. From an organizational service perspective, this element is crucial because self-service technology is fundamentally designed to reduce queues, speed up transactions, and provide greater independence for users. However, it

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also demonstrates that successful implementation depends not solely on the device itself, but on the user's motivation to use it and on staff support in using the service. This means that technological infrastructure is a necessary prerequisite, but not the sole determinant of effectiveness. When a device is easy to use and aligned with user needs, it becomes a supporting factor; conversely, when users experience technical confusion, limited access, or dependence on staff assistance, the same device can become a source of obstacles (Sayekti & Mardianto, 2019).

The next determining factor relates to the user's adaptive capacity and the librarian's role as a service supporter. From the user's perspective, the effectiveness of self-service is typically determined by how easy the system is to understand, how quickly transactions can be completed, and how few obstacles they experience during the process. From the librarian's perspective, effectiveness is more related to whether the system helps maintain smooth service, reduces the burden of routine transactions, and maintains effective collection administration control. In this context, the user's ability to adapt to the self-service flow is a key supporting factor. However, if user literacy with the system is limited or service instructions are insufficient, the librarian will remain the primary support, and this can reduce the level of independence expected from self-service. In other words, the effectiveness of a self-service circulation system is largely determined by the intersection of user readiness and staff support (Engkus et al., 2019).

Thus, the factors supporting and inhibiting the effectiveness of the self-circulation system at the UIN Gus Dur Library can be grouped into three domains: service procedure design, technology availability and functionality, and service provider readiness. These three factors are not mutually exclusive, but rather mutually reinforcing. Clear procedures without easy-to-use technology will not result in effective service; technology available without librarian support and user readiness also does not automatically improve service performance. Within the framework of organizational evaluation, these findings suggest that self-service circulation effectiveness is more appropriately understood as the result of an integration between systems, people, and work rules (Erwin et al., 2025). Therefore, the main supporting factors are clarity of flow, availability of self-service facilities, and support from staff; while the main inhibiting factors are potential procedural complexity, potential obstacles in using devices, and unequal user adaptation to self-service. This reading is important because it emphasizes that increasing effectiveness is not simply achieved by adding facilities, but must be accompanied by streamlining the flow, strengthening user support, and adapting operations that are responsive to the user experience.

Strategic-Applicative Recommendations to Strengthen Library Circulation Service Performance

The first strategic recommendation is to simplify and strengthen the service flow design to make the self-circulation system easier for users to understand and operate. In the official documentation of the UIN Gus Dur Library, the circulation service already has a fairly clear flow, starting from browsing the collection through the OPAC, borrowing through the Self-Lending Kiosk, and returning through the staff or Self-Return Kiosk. However, long-term effectiveness will be stronger if this flow is translated into more concise, consistent, and easy-to-read visual instructions at each service point. Simplifying the flow is important because procedures that are too gradual have the potential to increase the cognitive burden of users, especially for new users. Therefore, applicable steps include placing step-by-step guides in the OPAC, borrowing kiosks, and bookdrops; aligning terminology on information boards with that in the official guide; and integrating information about loan periods, extensions, and sanctions into the service media closest to users. This strategy aligns with the principle that library service quality needs to be built

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from the user's perspective and from the system's ability to reduce practical barriers to service utilization (Rodin, 2015).

The second recommendation is to strengthen user support and operational assistance without eliminating the self-service orientation. System effectiveness is determined not only by the availability of devices, but also by the readiness of users to adapt and by the role of librarians as service buffers. Therefore, libraries can develop a lightweight but consistent rapid assistance scheme, such as assisting staff during peak hours, short video tutorials accessed via QR codes in service areas, and strengthening user education materials that specifically train users in using the OPAC, self-borrowing, and self-returning (Prayogi et al., 2024). This step is important because research on self-service circulation shows that the success of self-service is influenced by the reasons users choose the service and by the staff's contribution in supporting its implementation. In other words, the most realistic recommendation is not to replace staff, but rather to shift their role from implementing routine transactions to facilitating service literacy and resolving obstacles in the field.

The third recommendation is to establish a sustainable service evaluation mechanism based on user feedback. In the context of the UIN Gus Dur Library, strengthening circulation service performance going forward is not simply a matter of adding facilities; it also needs to be accompanied by a simple monitoring system for kiosk functionality, procedural understandability, the most frequently encountered bottlenecks, and user experiences after using the service. Practically, the library can set up a short feedback channel after transactions, summarize complaints or obstacles at the kiosk, and conduct periodic evaluations between service librarians and system administrators to assess whether the changes made truly improve the user experience and operational smoothness. This strategy is important because library service quality assessments that rely solely on formal design often fail to adequately capture the gap between the services provided and the services actually experienced, given that the library is an organizational service system whose performance must be strengthened through a continuous cycle of evaluation, learning, and process improvement.

CONCLUSION

This study shows that the self-service circulation service at the UIN K.H. Abdurrahman Wahid Pekalongan Library is implemented as a hybrid service system that combines independent technology with operational support from librarians. Service implementation takes place through a structured flow, starting from browsing the collection through the OPAC, borrowing through the Self-Lending Kiosk, to returning through the staff or bookdrop. In this context, service effectiveness is not interpreted solely as the presence of devices or transaction acceleration, but rather as the system's ability to provide ease of access, clarity of procedures, smooth processes, and maintain accountability in collection management. The research findings confirm that the effectiveness of the self-circulation system is shaped by three main determinants: the clarity of the service procedure design, the functionality of the technological infrastructure, and the readiness of service actors. These three are supporting factors when well integrated with each other, but can also be inhibiting factors when the procedures are too complex, the devices are not entirely easy to use, or the user's ability to adapt is still diverse. Thus, the main contribution of this research lies in the affirmation that the evaluation of self-service circulation services needs to be placed within the framework of the performance of the organization's service system, so that the focus of the assessment does not stop

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at the facilities, but includes the relationship between processes, technology, user experience, and the role of librarians in supporting the functioning of the service.

In addition, this study also provides practical contributions in the form of applicable strategic recommendations for strengthening circulation service performance, namely by simplifying service flows, strengthening user support, and establishing ongoing service evaluations based on feedback. However, this study has limitations because it was conducted at a single institution using a qualitative approach, so the findings are contextual and not intended for broad generalization. Furthermore, the effectiveness evaluation in this study relies more on the experiences of service actors and implementation dynamics, so it does not integrate quantitative measures such as transaction time, kiosk usage frequency, or self-service success rates statistically. Therefore, future research is recommended to develop a combined approach, expand the study location comparatively to other university libraries, and explore aspects of technology usability, user experience, and the influence of user education programs on the successful adoption of self-circulation services. With this direction, future research development will not only enrich academic understanding of library service effectiveness but also provide a stronger foundation for continuous service system improvement.

REFERENCES

- Akmal, F., Prayogi, A., & Sari, N. H. M. (2024). PENERAPAN PEMBELAJARAN BERBASIS METODE DISCOVERY LEARNING PADA MATA PELAJARAN SEJARAH KEBUDAYAAN ISLAM DI MTS NU TIRTO PEKALONGAN. *BANDA HISTORIA: Jurnal Pendidikan Sejarah Dan Studi Budaya*, 2(2), 1–16. <https://doi.org/https://doi.org/10.62176/bastoria.v2i2.451>
- Alam, N. (2018). Integration of Mobile Based Queuing Systems. *Journal of Information Technology and Its Utilization*, 1(2), 54–61. <https://doi.org/10.30818/jitu.1.2.1880>
- Azizah, A., & Wanastri, P. (2024). The Impact of Technology-Based Self-Service on User Satisfaction in Indonesia's National Library Self-Lending. *Librarianship in Muslim Societies*, 3(2), 140–157. <https://doi.org/10.15408/lims.v3i2.40985>
- Azizah, S. E. N. (2026). Pengaruh Layanan Sirkulasi Mandiri Terhadap Kemudahan Akses Perpustakaan Oleh Mahasiswa Ilmu Perpustakaan Dan Informasi Islam Universitas Islam Negeri Sayyid Ali Rahmatullah Tulungagung. *Jurnal Pengabdian Masyarakat Dan Riset Pendidikan*, 4(4), 21574–21592. <https://doi.org/https://doi.org/10.31004/jerkin.v4i4.5715>
- Bessie, Y. W., Toda, H., Seran, D. A. N., & Sayrani, L. P. (2025). Efektivitas Layanan Perpustakaan Keliling Di Dinas Kearsipan Dan Perpustakaan Kota Kupang. *Kybernology Jurnal Ilmu Pemerintahan Dan Administrasi Publik*, 3(1), 234–242. <https://doi.org/10.71128/kybernology.v3i1.289>
- Cook, C., & Heath, F. M. (2001). Users' perceptions of library service quality: A LibQUAL+ qualitative study. *Library Trends*, 49(4), 548–584.
- Engkus, Trisakti, F., Hidayat, A., Suparman, N., & Ludianingsih, U. (2019). KUALITAS PELAYANAN PERPUSTAKAAN BERBASIS RADIO FREQUENCY IDENTIFICATION (RFID). *Kebijakan: Jurnal Ilmu Administrasi*, 10(1), 29–49.
- Erwin, E., Riau, D. P., & Akadira, T. (2025). Efficiency in Human Resource Management through the Digital System “Satu Kemenkeu.” *Golden Ratio of Human Resource Management*, 5(2), 532–547. <https://doi.org/10.52970/grhrm.v5i2.1551>

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Prayogi et al.

- Fachriz, R. I., Nugroho, Y. E., & Cahyaningtyas, A. D. (2022). Layanan Peminjaman dan Pengembalian Otomatis Berbasis Self Service di UPT Perpustakaan Rumah Ilmu Universitas Negeri Semarang. *Jurnal Penelitian Pendidikan*, 39(2), 87–92. <https://doi.org/10.15294/jpp.v39i2.40300>
- Fathmi. (2017). Kualitas Layanan Perpustakaan dan Informasi Perpustakaan Nasional RI. *Visi Pustaka*, 19(2), 139–152.
- Fatmawati, E. (2012). Evaluasi Kualitas Layanan Perpustakaan FEB Undip Berdasarkan Harapan dan Persepsi Pemustaka dengan Metode LibQUAL. *Berkala Ilmu Perpustakaan Dan Informasi*, VIII(1), 1–18. <https://doi.org/10.22146/bip.7725>
- Fauzi, H. (2022). Pengelolaan Perpustakaan Sebagai Pusat Sumber Belajar. *At –Ta’lim Jurnal Kajian Pendidikan Agama Islam*, 4(2), 52–65. <https://ejournal.anadwah.ac.id/index.php/Attalim/article/view/428%0Ahttps://jurnalmahasiswa.unesa.ac.id/index.php/jmtp/article/view/2490>
- Fernando, A., Sibero, K., Horat, I., Manurung, G., Apner, M., Sains, F., Sari, U., & Indonesia, M. (2026). IMPLEMENTASI SISTEM PERPUSTAKAAN MANDIRI DIGITAL DENGAN TEKNOLOGI BARCODE DAN FINGERPRINT DALAM UPAYA MENINGKATKAN EFISIENSI LAYANAN. *Jurnal Software Engineering and Information System (SEIS)*, 6(1), 24–30. <https://doi.org/https://doi.org/10.37859/seis.v6i1.9767>
- Gunarathna, M. (2024). Student Satisfaction with Physical and Digital Library Facilities in Higher Education Institutes. *Annals of Library and Information Studies*, 71(2), 190–199. <https://doi.org/10.56042/ALIS.V71I2.7349>
- Hahury, J. J. (2026). PENGARUH FASILITAS PERPUSTAKAAN TERHADAP MINAT KUNJUNGAN PEMUSTAKA DI DINAS PERPUSTAKAAN DAN KEARSIPAN KOTA AMBON. *Jurnal Administrasi Terapan*, 5(1), 21–29.
- Irwansyah, Y., Surya, A., Imelda, S., Lahya, N. H., & Azara, F. (2023). Transformation of Performance Evaluation Process in the Digital Era: A Qualitative Study on the Use of Technology as a Performance Assessment in Improving Team Work Results. *International Conference on Health Science, Green Economics, Educational Review and Technology 2023*, 680–687.
- Monoarfa, H. (2012). Efektivitas dan Efisiensi Penyelenggaraan Pelayanan Publik: Suatu Tinjauan Kinerja Lembaga Pemerintahan. *Jurnal Pelangi Ilmu*, 5(1), 1–9.
- Mulyono, S. E., Zulfikasari, S., & Hakim, A. A. (2025). RFID-Based Library Service Automation as Online and Self-Service Support. *International Journal of Multicultural and Multireligious Understanding*, 12(8), 120–127. <https://doi.org/http://dx.doi.org/10.18415/ijmmu.v12i8.6890>
- Neshat, N., & Dehghani, M. (2013). Review of the current gap between clients’ expectations and perceptions of received service in national library by using gap analysis model. *Performance Measurement and Metrics*, 14(1), 45–60. <https://doi.org/https://doi.org/10.1108/14678041311316130>
- Nurmaya, R. (2025). Peran Struktur Organisasi Dalam Efektivitas Koordinasi Dan Pengambilan Keputusan Di Perusahaan Manufaktur. *Journal of Business Economics and Management*, 1(4), 1063–1069.
- Ogbonna, A. U., Igewsi, U., & Enweani, U. V. (2014). Management of Hybrid Libraries for Effective Library Services in Nigeria: New Trends in Accessing Information. *Global Journal of Academic Librarianship*, 1(1), 1–7. <http://www.ripublication.com>

EVALUATION OF THE EFFECTIVENESS OF SELF-SERVICE-BASED CIRCULATION SERVICES AT THE UIN K.H. ABDURRAHMAN WAHID PEKALONGAN LIBRARY: A QUALITATIVE STUDY

Prayogi et al.

- Prayogi, A., Asirah, K., Thohirin, T., & Septiani, N. (2024). Sosialisasi Peran Literasi Perpustakaan dalam Bentuk Library Tour bagi Siswa Sekolah Menengah Atas di Pekalongan. *Kifah: Jurnal Pengabdian Masyarakat*, 3(1), 21-28.
- Prayogi, A., & Jawani, R. (2024). User education perpustakaan: Upaya pembekalan literasi dasar perpustakaan bagi mahasiswa UIN Gusdur Pekalongan. *Jurnal Pengabdian Masyarakat Larisma*, 1(1), 15-19.
- Prayogi, A., & Nasrullah, R. (2026). Maritime Networks and the Indonesian Revolution: Ports, Blockade Evasion, and the Making of an Archipelagic State. *Jurnal Ilmu Sosial dan Humaniora (JISORA)*, 1(01), 16-25.
- Prayogi, A., Nasrullah, R., Asirah, K., Anggana, R. A., & Diniyanto, A. (2026). Harmonisasi Pengaturan Penyelenggaraan Perpustakaan: Telaah Normatif UU No. 43 Tahun 2007 dan PP No. 24 Tahun 2014. *Jurnal Ilmu Hukum*, 2(1), 33-40.
- Prayogi, A., Nasrullah, R., Wahyudi, N. A., & Rosidin, L. (2026). Political Science as a Social Science of Power, Authority, and Legitimacy. *Journal Of Political and Development Issue*, 2(2), 11-24.
- Rahmat Alifin, V., & Nurdiansyah, A. (2025). Measuring user satisfaction: A service quality analysis of the Bengkulu Province library and archives. *Informatio: Journal of Library and Information Science*, 5(3), 280–298. <https://doi.org/https://doi.org/10.24198/inf.v5i3.64291>
- Rahmawati, F., & Nazhifah Suryana, N. (2024). Pentingnya Standar Operasional Prosedur (SOP) Dalam Meningkatkan Efisiensi Dan Konsistensi Operasional Pada Perusahaan Manufaktur. *Jurnal Manajemen Bisnis Digital Terkini (JUMBIDTER)*, 1(3), 1–15. <https://doi.org/10.61132/jumbidter.v1i2.112>
- Rodin, R. (2015). Urgensi Kualitas Pelayanan Perpustakaan Perguruan Tinggi. *Jurnal Kajian Informasi Dan Perpustakaan*, 3(1), 101–110. <https://doi.org/10.24198/jkip.v3i1.10274>
- Rohman, A. S. (2020). Pengukuran Kualitas Layanan Perpustakaan: Studi Pada Perpustakaan STIE Ekuitas Bandung. *Nusantara - Journal of Information and Library Studies*, 3(1), 17–36. <https://doi.org/10.30999/n-jils.v3i1.800>
- Santoso, J. T., & Hartono, B. (2022). *DSS (Decision Support Systems) Sistem Pendukung Keputusan*. Yayasan Prima Agus Teknik & Universitas Sains & Teknologi Komputer.
- Sayekti, R., & Mardianto. (2019). *PERPUSTAKAAN DIGITAL: Mengukur Penerimaan Inovasi Teknologi*. Perdana Publishing.
- Schrepp, M., Kollmorgen, J., Meiners, A. L., Hinderks, A., Winter, D., Santoso, H. B., & Thomaschewski, J. (2023). On the Importance of UX Quality Aspects for Different Product Categories. *International Journal of Interactive Multimedia and Artificial Intelligence*, 8(2), 232–246. <https://doi.org/10.9781/ijimai.2023.03.001>
- Sureshkumar, T., Hussain, A. A., & Jeyalakshmi, A. R. (2025). Enhancing Library Efficiency and user Experience through RFID and Kiosk Integration. *International Journal of Research in Engineering and Innovation*, 14(11), 1–6. <https://doi.org/10.17577/IJERTV14IS110303>
- Syaifuddin, M., Sopiah, Annur, A. F., Prayogi, A., & Alias, N. (2025). Improving Academic Culture Through MBKM-Based Curriculum Construction at Islamic Higher Education Institution. *Edukasia: Jurnal Penelitian Pendidikan Islam*, 20(1), 49–70. <https://doi.org/http://dx.doi.org/10.21043/edukasia.v20i1.31427>
- Wibowo, I. (2023). OPTIMIZING SERVICE EFFICIENCY AND QUALITY THROUGH PRACTICAL

**EVALUATION OF THE EFFECTIVENESS OF SELF-SERVICE-BASED CIRCULATION SERVICES AT THE UIN K.H. ABDURRAHMAN WAHID PEKALONGAN LIBRARY:
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SERVICE OPERATIONAL MANAGEMENT. *Jurnal Ekonomi*, 12(04), 2597–2602.

Yeni, A., Nurhayati, & Oktavia, D. (2024). Evaluation of The Quality of Library Services and Facilities on The Level of Student Satisfaction at Mahaputra Muhammad Yamin University. *ECo-Buss*, 7(2), 1065–1076. <https://doi.org/10.32877/eb.v7i2.1703>