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**ANALYSIS OF IKM PLUS IMPLEMENTATION IN MEASURING PUBLIC  
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**Abstract**

This study aims to analyze the implementation of the Community Satisfaction Index (CSI) Plus in measuring the level of public satisfaction with library services in Central Java. The background of the study is based on the important role of libraries as literacy centers in the digital era that is vulnerable to disinformation. The method used is a quantitative approach with data collection through questionnaires to library service users. The results show that the implementation of CSI Plus is able to provide a more comprehensive picture of service quality, including aspects of speed, comfort, accessibility, and staff competence. These findings indicate that improving the quality of library services contributes significantly to public satisfaction and encourages the improvement of literacy culture among the wider community in a sustainable manner.

**Keywords:** IKM Plus, Public Satisfaction, Confirmatory Factor Analysis (CFA), Service Quality



## INTRODUCTION

Libraries occupy a strategic position in the information landscape, serving as trusted institutions that bridge communities to knowledge, combat misinformation, and foster a culture of reading. Law No. 43 of 2007 mandates the development and utilization of libraries as sources of information in written, printed, and recorded forms to advance national literacy. As part of the regional government apparatus, regional libraries are therefore inseparable from the broader demands of public service accountability and quality improvement (Raudah & Amalia, 2025).

Central to this accountability is the measurement of public satisfaction. Satisfaction arises when perceived service performance meets or exceeds user expectations (Kotler & Keller, 2009; Aries et al., 2019). For libraries, measuring satisfaction is not merely evaluative; it reflects the extent to which services genuinely serve community needs and can guide continuous improvement in resources, processes, and management (Ngatini, 2018).

In Indonesia, the standard instrument for this purpose is the Community Satisfaction Index (Indeks Kepuasan Masyarakat, IKM), established under the Regulation of the Minister of Administrative and Bureaucratic Reform No. 14 of 2017. The IKM uses nine service quality elements as indicators and has been applied across a wide range of public service agencies. Studies consistently report favorable scores: a Community Health Center in Salatiga recorded an IKM of 88.07 (Paay, 2023); the Sawan District Office obtained 81.25 (Damayanti et al., 2019); and the Magelang City Police Station scored 90.27 in its vehicle license service unit (Orbawati et al., 2023). At the Magelang City Library and Archives Service, the IKM reached 88 with a "Good" rating for the January to October 2025 period.

However, high IKM scores do not always reflect the full picture of user experience. At the same Magelang City Library, users reported dissatisfaction with reading room conditions and raised concerns about staff professionalism, including a low proportion of certified librarians (Namira et al., 2024). Meanwhile, the Indonesian Ombudsman received 827 public complaints in 2025, with local governments, the tier responsible for regional libraries, accounting for 55.1% of reported cases. This divergence between formally measured satisfaction and lived experience points to inherent limitations in the conventional IKM model.

These limitations have been documented in the literature. Bakti and Sumaedi (2017) identify five key weaknesses: (1) the IKM measures service quality dimensions rather than satisfaction per se; (2) it does not capture overall



satisfaction; (3) improvement priorities are not derived from public expectations; (4) the weighting procedure for service elements is left unspecified; and (5) inter-agency comparisons are unreliable because agencies may add elements and assign different weights. In practice, some researchers have added tools such as Importance-Performance Analysis (IPA) to partially compensate for these shortcomings (Gozaly et al., 2023), but such additions are not codified in the regulatory framework.

To address these limitations, the IKM Plus model was developed as a more comprehensive approach to measuring community satisfaction (Bakti & Sumaedi, 2017). Drawing on internationally established frameworks, including the Swedish Customer Satisfaction Barometer (SCSB), the Norwegian Customer Satisfaction Barometer (NCSB), the European Customer Satisfaction Index (ECSI), and the American Customer Satisfaction Index (ACSI), IKM Plus integrates multiple satisfaction levers: service quality, perceived value, image, and user sacrifice. Initial applications have shown promise. Alfi Syahr (2019) applied IKM Plus to district courts in Central Java, East Java, and South Sulawesi, obtaining a score of 48.8 in the "fairly satisfied" category. Arba'in (2025) found the model to be a good fit at the Semarang Regency Human Resources Development and Personnel Agency (BKPSDM).

Despite this evidence, previous studies have predominantly relied on conventional IKM or supplemented it with analytical tools such as IPA, while empirical testing of the structural validity of IKM Plus using Confirmatory Factor Analysis (CFA), particularly in the context of regional library services, remains limited. This study addresses that gap. The objective is to test the validity and feasibility of the IKM Plus model as an instrument for measuring public satisfaction with regional library services across Central Java, using CFA to assess how well the model's latent structure fits empirical data. The findings are expected to contribute to the development of a more representative and methodologically rigorous satisfaction measurement framework for public library services in Indonesia.

## **LITERATURE REVIEW**

### **1. Public Satisfaction in Public Services**

Public satisfaction is a crucial indicator in assessing the success of a public service. Conceptually, satisfaction is defined as the public's evaluation of the comparison between expectations and the service performance received (Aries et al., 2019). This aligns with Kotler and Keller's (2009) view that satisfaction arises



when service performance meets or even exceeds user expectations. In the context of public services, public satisfaction not only reflects subjective perceptions but also serves as a benchmark for the quality of government institutional performance. High levels of satisfaction indicate that services provided meet public needs, while low levels indicate a gap between expectations and the reality of service delivery (Hermawan et al., 2016). In the library sector, public satisfaction is closely linked to the quality of information services, facilities, and human resource competency. Libraries, as information providers, play a strategic role in improving public literacy and knowledge, making good service quality a key factor in creating user satisfaction (Raudah & Amalia, 2025).

## **2. Service Quality**

Service quality is a key determinant of public satisfaction, reflecting an organization's ability to consistently deliver services that meet user expectations (Ngatini, 2018). According to the SERVQUAL framework, service quality comprises five main dimensions: reliability (R), responsiveness (J), assurance (K), empathy (E), and tangibles (TF). These five dimensions are adopted in the IKM Plus model as first-order constructs nested under the broader service quality variable. Previous research has shown that service quality has a significant and positive impact on public satisfaction: the better the quality of service provided, the higher the level of satisfaction experienced by users (Husnawati et al., 2025). Conversely, poor service quality can lead to public complaints and dissatisfaction.

## **3. Community Satisfaction Index (IKM)**

The Community Satisfaction Index (Indeks Kepuasan Masyarakat, IKM) is an instrument used to measure public satisfaction with public services, developed based on the Regulation of the Minister of Administrative and Bureaucratic Reform No. 14 of 2017, which establishes nine service elements as assessment indicators. The IKM provides quantitative data on public perceptions of service quality delivered by government agencies (Saputra & Sutrisno, 2025). Its use has been widely implemented across public service sectors, including community health centers, sub-district offices, and police stations, with results generally ranging from good to excellent (Paay, 2023; Damayanti et al., 2019; Orbawati et al., 2023).

However, the IKM carries several limitations. Bakti and Sumaedi (2017) argue that its measurement focuses more on service quality dimensions than on overall community satisfaction, and that it does not adequately account for other determinants of satisfaction such as perceived value, organizational image, and



user sacrifice. These limitations justify the development of a more integrative model.

#### 4. IKM Plus Model

The IKM Plus model was developed as an extension of the conventional IKM to provide a more comprehensive measurement of community satisfaction (Bakti & Sumaedi, 2017). It draws on internationally established satisfaction measurement frameworks, including the Swedish Customer Satisfaction Barometer (SCSB), the Norwegian Customer Satisfaction Barometer (NCSB), the European Customer Satisfaction Index (ECSI), and the American Customer Satisfaction Index (ACSI). Unlike the conventional IKM, the IKM Plus model integrates multiple satisfaction levers: service quality, community value, price perception, organizational image, and user sacrifice.

To facilitate clarity in reporting and analysis, Table 1 presents the variable codes used in the IKM Plus model throughout this study.

**Table 1. Variable Codes in the IKM Plus Model**

Code	Variable	Description
KP	Service Quality ( <i>Kualitas Pelayanan</i> )	Overall perceived quality of library services
R	Reliability	Ability to deliver services accurately and consistently
J	Responsiveness	Willingness to help users and provide prompt service
K	Assurance	Knowledge, courtesy, and ability to inspire trust
E	Empathy	Individual attention and care given to users
TF	Tangibles	Physical facilities, equipment, and appearance of staff
NM	Community Value ( <i>Nilai Masyarakat</i> )	Perceived benefits relative to the costs incurred
PH	Price Perception ( <i>Persepsi Harga</i> )	User perception of fees or costs associated with the service
CM	Organizational Image ( <i>Citra/Image</i> )	Reputation and public trust in the service provider



PM	User ( <i>Pengorbanan Masyarakat</i> )	Sacrifice	Time, effort, and cost expended by users to obtain the service
KM	Community Satisfaction ( <i>Kepuasan Masyarakat</i> )		Overall satisfaction of users with library services

In the IKM Plus model, community satisfaction (KM) is positioned as the second-order construct, meaning it is not measured directly but is instead reflected through the five first-order constructs: service quality (KP), community value (NM), price perception (PH), organizational image (CM), and user sacrifice (PM). Service quality (KP) is itself a multidimensional first-order construct, operationalized through five sub-dimensions: reliability (R), responsiveness (J), assurance (K), empathy (E), and tangibles (TF).

**5. Synthesis: How IKM Plus Variables Shape Public Satisfaction**

The strength of the IKM Plus model lies in its recognition that public satisfaction is a multidimensional construct shaped by the interaction of several distinct yet interrelated variables. Service quality (KP) forms the foundational driver, as users evaluate their satisfaction based first and foremost on whether services are delivered reliably, responsively, and with appropriate assurance, empathy, and adequate facilities. However, service quality alone does not fully account for satisfaction. Community value (NM) captures the user's assessment of whether the benefits received are proportionate to the costs or efforts expended, linking satisfaction to a utilitarian calculus of worth. Price perception (PH) extends this by addressing users' specific assessments of fees or administrative costs, which in public services often shape whether the overall experience feels equitable. Organizational image (CM) contributes through a reputational and trust dimension: a library perceived as credible, accessible, and socially responsive will generate a baseline of positive expectation that amplifies satisfaction even when individual service encounters are imperfect. Finally, user sacrifice (PM) represents the non-monetary costs borne by users, including time spent traveling, waiting, and navigating procedures, which directly modulate the net value of the service experience.

**6. Confirmatory Factor Analysis (CFA)**

Confirmatory Factor Analysis (CFA) is a structural equation modeling technique used to test whether a theoretically specified measurement model is consistent with empirical data (Brown, 2015). Unlike exploratory factor analysis, CFA requires the researcher to specify in advance which indicators are hypothesized to load onto which latent constructs, then assesses whether that



hypothesized structure is supported by the observed data. In this study, CFA is employed to confirm whether the indicators of the IKM Plus model adequately represent their respective latent variables and whether the overall model structure fits the data collected from library users across Central Java.

The analysis proceeds in two stages. In the first-order CFA, each of the five first-order constructs, namely service quality (KP) with its five sub-dimensions (R, J, K, E, TF), community value (NM), price perception (PH), organizational image (CM), and user sacrifice (PM), is tested independently to confirm that their respective indicators load significantly and sufficiently onto the intended construct. In the second-order CFA, community satisfaction (KM) is treated as a higher-order latent variable whose structure is reflected through the five first-order constructs. This two-stage approach allows for both detailed examination of individual constructs and assessment of the overall integrated model.

## **RESEARCH METHOD**

### **Research Design**

This study employs a quantitative approach grounded in the positivist paradigm, using a survey design to systematically measure public perceptions of library services through structured questionnaires (Sugiyono, 2017; Creswell, 2014). The survey instrument was developed based on the IKM Plus model variables and administered to library service users across selected regional libraries in Central Java Province.

### **Sampling Procedure**

This study applied multistage sampling conducted through three sequential stages (Firmansyah & Dede, 2022).

In the first stage, Central Java Province was divided into five regional clusters based on geographical characteristics: west, north, south, east, and central.

In the second stage, one district or city library was selected from each cluster using purposive sampling based on the criteria presented in Table 2. The inclusion of A-accredited libraries specifically was considered because this designation reflects the highest institutional service standard, which is important for ensuring comparability and uniformity of service quality across study sites.

**Table 2. Purposive Sampling Criteria**

No	Criteria
1	Have an active regional library service
2	Have public library services



3	Community Satisfaction Index (IKM) data is available
4	Library accreditation A
5	Availability of respondents or service users

Source: Researcher Analysis

Based on these criteria, five libraries were selected, each representing one regional cluster as shown in Table 3.

**Table 3. Selected Libraries by Regional Cluster**

Regional Cluster	Selected District/City	Representative Library
West	Tegal City	Tegal City Regional Library
North	Kendal	Kendal Regional Library
South	Wonosobo	Wonosobo Regional Library
East	Surakarta City	Surakarta City Regional Library
Central	Magelang City	Magelang City Regional Library

Source: Researcher Analysis

In the third stage, respondents were selected from library service users at each location using simple random sampling, ensuring that every eligible user had an equal probability of inclusion.

**Sample Size**

The total sample size was determined using the Krejcie and Morgan (1970) table. Given that the combined population of library service users across the five selected libraries exceeds 1,000,000, the minimum required sample size is 384 respondents. These 384 respondents were distributed equally across the five libraries, with approximately 76 to 77 respondents allocated per library, ensuring proportional geographic representation across all regional clusters.

**Data Analysis**

The data were analyzed using Covariance-Based Structural Equation Modeling (CB-SEM) with AMOS software. This approach was selected because the study aims to confirm whether the theoretically specified IKM Plus measurement model is consistent with empirical data, a purpose for which CB-SEM is more appropriate than Partial Least Squares SEM (PLS-SEM) (Hair et al., 2022).

CFA testing was conducted in two stages: first-order CFA and second-order CFA (Brown, 2015). In the first-order CFA, each construct was tested independently. These first-order constructs include service quality (KP) and its five sub-dimensions, namely reliability (R), responsiveness (J), assurance (K), empathy (E), and tangibles (TF), as well as community value (NM), price perception (PH), organizational image (CM), and user sacrifice (PM). In the



second-order CFA, community satisfaction (KM) was modeled as a higher-order latent construct reflected through the five first-order constructs: KP, NM, PH, CM, and PM.

Validity and reliability were assessed through convergent validity, discriminant validity, and construct reliability. Convergent validity was evaluated by examining the loading factor of each indicator on its respective construct. Construct reliability was assessed using Composite Reliability (CR) and Average Variance Extracted (AVE), where AVE greater than 0.5 and CR greater than 0.5 indicate acceptable convergent validity. Reliability was confirmed when Cronbach's Alpha exceeded 0.6 and Composite Reliability exceeded 0.7 for each variable (Husnawati et al., 2025). Discriminant validity was assessed using two approaches. The Heterotrait-Monotrait ratio (HTMT) was applied, where values between 0.8 and 0.9 indicate acceptable discriminant validity. The Fornell-Larcker criterion was also used, comparing the square root of AVE for each construct against inter-construct correlations (Husnawati et al., 2025).

Following validity and reliability testing, the overall model fit was evaluated through goodness-of-fit testing covering both absolute fit and incremental fit indices. CB-SEM evaluates the degree to which the theoretical model reproduces the observed covariance structure in the data (Hair et al., 2022). The goodness-of-fit criteria applied in this study are presented in Table 4.

**Table 4. Goodness of Fit Testing Criteria**

<b>Goodness of Fit</b>	<b>Cut-Off Value</b>
Chi-Square	Expected to be small
P-Value	More than or equal to 0.05
Chi-Square/df	Less than or equal to 3.0
GFI	More than or equal to 0.90
RMSEA	Less than or equal to 0.08
SRMR	Less than or equal to 0.05
AGFI	More than or equal to 0.90
TLI	More than or equal to 0.90
CFI	More than or equal to 0.90

Source: Hair et al. (2022)



## RESULTS AND DISCUSSION

### Instrument Test

Validity testing was conducted to ensure that each questionnaire item accurately represents and measures the intended construct. Reliability testing assessed the instrument's internal consistency, examining the extent to which it produces stable and consistent results when used repeatedly. All statement items produced R-calculation values greater than the R-table, with factor loading values exceeding the minimum threshold of 0.5, confirming that each indicator adequately represents its intended construct. Reliability coefficients exceeded the threshold of 0.7 for all variables, indicating good internal consistency. Therefore, all indicators in this study are declared valid and reliable and are suitable for use in further analysis.

### First-Order Confirmatory Factor Analysis

CFA was conducted to confirm whether the indicators of each IKM Plus construct met validity and reliability criteria. The analysis proceeded in two stages: first-order CFA for each individual construct and second-order CFA for the overall integrated model. Table 5 presents the standardized outer loading values from the first-order CFA.

**Table 5. Standardized Outer Loading (First-Order CFA)**

Construct	Indicator	Outer Loading
Organizational Image (CM)	CM1	0.894
	CM2	0.926
	CM3	0.916
Empathy (E)	E1	0.882
	E2	0.909
	E3	0.905
	E4	0.899
	E5	0.882
Responsiveness (J)	J1	0.888
	J2	0.931
	J3	0.889
	J4	0.900
Assurance (K)	K1	0.930
	K2	0.928
	K3	0.884
	K4	0.921
	K5	0.911



Construct	Indicator	Outer Loading
Community Satisfaction (KM)	KM1	0.925
	KM2	0.890
	KM3	0.900
Service Quality (KP)	KP1	0.890
	KP2	0.895
	KP3	0.936
	KP4	0.873
Community Value (NM)	NM1	0.910
	NM2	0.922
	NM3	0.922
Price Perception (PH)	PH1	0.884
	PH2	0.866
	PH3	0.873
	PH4	0.905
User Sacrifice (PM)	PM1	0.913
	PM2	0.929
	PM3	0.915
Reliability (R)	R1	0.887
	R2	0.894
	R3	0.933
	R4	0.870
Tangibles (TF)	TF1	0.881
	TF2	0.925
	TF3	0.873
	TF4	0.930

Source: AMOS data processing, 2026

Note: CM = Organizational Image; E = Empathy; J = Responsiveness; K = Assurance; KM = Community Satisfaction; KP = Service Quality; NM = Community Value; PH = Price Perception; PM = User Sacrifice; R = Reliability; TF = Tangibles.

All standardized outer loading values exceed 0.7, confirming that each indicator adequately represents its respective construct and fulfills the convergent validity requirement (Hair et al., 2022). The total number of valid indicators across all constructs is 42, distributed across 11 constructs comprising 5 first-order sub-dimensions of service quality (R, J, K, E, TF) and 6 primary constructs (KP, NM, PH, CM, PM, KM).



Table 6 presents the AVE, Composite Reliability, and Cronbach's Alpha values for each construct.

**Table 6. AVE, Composite Reliability, and Cronbach's Alpha Values (First-Order CFA)**

Construct	Cronbach's Alpha	Composite Reliability	AVE
Organizational Image (CM)	0.937	0.937	0.832
Empathy (E)	0.953	0.953	0.802
Assurance (K)	0.946	0.946	0.814
Reliability (R)	0.962	0.963	0.837
Community Satisfaction (KM)	0.931	0.931	0.819
Service Quality (KP)	0.944	0.944	0.808
Community Value (NM)	0.942	0.942	0.843
Price Perception (PH)	0.933	0.933	0.778
User Sacrifice (PM)	0.942	0.942	0.845
Responsiveness (J)	0.942	0.942	0.803
Tangibles (TF)	0.946	0.946	0.815

Source: AMOS data processing, 2026

All AVE values exceed 0.5, fulfilling the convergent validity requirement (Gozaly et al., 2023). All Cronbach's Alpha values exceed 0.6 and all Composite Reliability values exceed 0.7, confirming that all constructs meet the reliability criteria (Gozaly et al., 2023).

Discriminant validity was then assessed using the Fornell-Larcker criterion, which compares the square root of AVE for each construct against the correlations between constructs. Table 7 presents the results.

**Table 7. Fornell-Larcker Discriminant Validity Values**

Construct	CM	E	J	K	KM	KP	NM	PH	PM	R	TF
CM	0.912										
E		0.895									
J			0.902								
K				0.915							
KM					0.905						
KP						0.899					
NM							0.918				
PH								0.882			
PM									0.919		
R										0.896	
TF											0.903

Source: AMOS data processing, 2026



Note: Diagonal values (bold) represent the square root of AVE for each construct. CM = Organizational Image; E = Empathy; J = Responsiveness; K = Assurance; KM = Community Satisfaction; KP = Service Quality; NM = Community Value; PH = Price Perception; PM = User Sacrifice; R = Reliability; TF = Tangibles.

The square root of AVE for each construct is greater than its correlation with all other constructs, confirming that discriminant validity is fulfilled for all constructs in the model.

**Full Model IKM Plus**

Following the first-order CFA, the full model estimation was conducted by including all constructs and indicators simultaneously in the second-order CFA. Figure 1 presents the full structural model of IKM Plus. Table 8 presents the standardized outer loading ranges for each construct in the full model.

**Table 8. Standardized Outer Loading for the Full IKM Plus Model (Second-Order CFA)**

Construct	Outer Loading Range
Organizational Image (CM)	0.894 – 0.927
Empathy (E)	0.882 – 0.909
Assurance (K)	0.887 – 0.931
Reliability (R)	0.885 – 0.930
Community Satisfaction (KM)	0.890 – 0.924
Service Quality (KP)	0.869 – 0.934
Community Value (NM)	0.910 – 0.923
Price Perception (PH)	0.866 – 0.904
User Sacrifice (PM)	0.913 – 0.929
Responsiveness (J)	0.870 – 0.933
Tangibles (TF)	0.874 – 0.931

Source: AMOS data processing, 2026

All standardized outer loading values in the full model remain above 0.7, consistent with the first-order results and confirming that the indicators maintain their validity within the integrated model structure (Hair et al., 2022). Table 9 presents the AVE, Composite Reliability, and Cronbach's Alpha values for the full IKM Plus model.



**Table 9. AVE, Composite Reliability, and Cronbach's Alpha Values of the Full IKM Plus Model**

Construct	Cronbach's Alpha	Composite Reliability	AVE
Organizational Image (CM)	0.937	0.937	0.832
Empathy (E)	0.953	0.953	0.802
Assurance (K)	0.946	0.946	0.814
Reliability (R)	0.962	0.963	0.837
Service Quality (KP)	0.944	0.942	0.802
Community Satisfaction (KM)	0.931	0.931	0.819
Community Value (NM)	0.942	0.942	0.843
Price Perception (PH)	0.933	0.933	0.778
User Sacrifice (PM)	0.942	0.942	0.845
Responsiveness (J)	0.942	0.942	0.803
Tangibles (TF)	0.946	0.946	0.815

Source: AMOS data processing, 2026

All AVE values remain above 0.5 and all Cronbach's Alpha and Composite Reliability values meet the required thresholds, confirming that all constructs in the full IKM Plus model fulfill both convergent validity and reliability criteria (Gozaly et al., 2023).

Discriminant validity of the full model was further assessed using the Heterotrait-Monotrait Ratio (HTMT). According to Hair et al. (2022), HTMT values must be below 0.9 to confirm discriminant validity. Table 10 presents the HTMT values for the full IKM Plus model.

**Table 10. HTMT Discriminant Validity Values of the Full IKM Plus Model**

	CM	E	J	K	KP	KM	NM	PH	PM	R	TF
<b>CM</b>											
<b>E</b>	0.102										
<b>J</b>	0.169	0.252									
<b>K</b>	0.206	0.176	0.203								
<b>KP</b>	0.255	0.194	0.216	0.269							
<b>KM</b>	0.174	0.219	0.223	0.218	0.179						
<b>NM</b>	0.198	0.178	0.258	0.190	0.132	0.257					
<b>PH</b>	0.176	0.213	0.167	0.249	0.066	0.135	0.165				
<b>PM</b>	0.133	0.264	0.196	0.238	0.198	0.212	0.233	0.191			
<b>R</b>	0.245	0.268	0.299	0.198	0.172	0.154	0.231	0.206	0.235		
<b>TF</b>	0.065	0.180	0.143	0.230	0.175	0.146	0.104	0.072	0.166	0.229	

Source: AMOS data processing, 2026

Note: CM = Organizational Image; E = Empathy; J = Responsiveness; K = Assurance; KM = Community Satisfaction; KP = Service Quality; NM =



Community Value; PH = Price Perception; PM = User Sacrifice; R = Reliability; TF = Tangibles.

All HTMT values are well below the 0.9 threshold, confirming that the full IKM Plus model fulfills discriminant validity requirements. The consistently low HTMT values also indicate that each construct in the model is empirically distinct, with no problematic overlap between constructs.

**Goodness-of-Fit Evaluation**

Following validity and reliability testing, the overall model fit was assessed. Table 11 presents the goodness-of-fit results for the full IKM Plus model.

**Table 11. Goodness-of-Fit Test Results of the Full IKM Plus Model**

Goodness-of-Fit Index	Cut-Off Value	Estimated Value	Conclusion
Chi-Square	Expected small	938.962	Not ideal
P-Value	More than or equal to 0.05	0.000	Not fit
Chi-Square/df	Less than or equal to 3.00	1.190	Fit
RMSEA	Less than or equal to 0.08	0.022	Fit
GFI	More than or equal to 0.90	0.900	Fit
AGFI	More than or equal to 0.90	0.885	Marginal fit
SRMR	Less than or equal to 0.08	0.106	Not fit
TLI	More than or equal to 0.90	0.990	Fit
CFI	More than or equal to 0.90	0.990	Fit

Source: AMOS data processing, 2026

The goodness-of-fit evaluation indicates that the IKM Plus model shows an acceptable but not fully ideal fit. Several indices meet the recommended criteria, including Chi-Square/df (1.190), RMSEA (0.022), GFI (0.900), TLI (0.990), and CFI (0.990), which collectively demonstrate that the model structure is well supported by the empirical data. However, the Chi-Square value (938.962) and p-value (0.000) do not meet the ideal criteria. This is a commonly expected outcome in large samples, as Chi-Square is sensitive to sample size and tends to reject models even when the structural misfit is negligible (Hair et al., 2022). The SRMR value of 0.106 also exceeds the recommended threshold of 0.08, and AGFI at 0.885 falls slightly below the 0.90 criterion, indicating marginal fit. Therefore, the model can be considered acceptable with caution, and future studies should explore further model refinement to improve overall fit, particularly in addressing the SRMR and AGFI values.

**Discussion**

The results of the first-order and second-order CFA confirm that the IKM Plus model demonstrates sound structural validity as a measurement instrument for public satisfaction with regional library services in Central Java. All 42



indicators across 11 constructs produced outer loading values above 0.7, AVE values above 0.5, and Composite Reliability and Cronbach's Alpha values above the required thresholds, collectively confirming that the model is both valid and reliable.

Among the constructs, reliability (R) and user sacrifice (PM) emerge as the two most influential factors in shaping community satisfaction. Reliability produced the highest AVE value (0.837) with outer loading values ranging from 0.885 to 0.930, indicating that users place considerable weight on the library's ability to deliver services consistently, accurately, and in accordance with what was promised. This finding suggests that libraries seeking to improve public satisfaction should prioritize service consistency, staff accuracy in handling user requests, and the fulfillment of service commitments. User sacrifice produced the highest AVE value overall (0.845) with outer loading values reaching 0.929, reflecting that the time, effort, and costs users expend in accessing library services are major determinants of their satisfaction. Libraries should therefore focus on reducing barriers to access, including minimizing waiting times, simplifying administrative procedures, improving physical accessibility, and where possible reducing any associated costs for users.

These findings carry direct implications for library management. The conventional IKM model, as noted by Bakti and Sumaedi (2017), addresses only the service quality dimension and does not account for factors such as user sacrifice, perceived value, price perception, or organizational image. The results of this study demonstrate that these additional dimensions are not only measurable but are empirically strong constructs that contribute meaningfully to the overall satisfaction model. Libraries that limit their evaluation to conventional IKM indicators risk overlooking critical dimensions of the user experience, particularly those related to the effort and cost users bear in accessing services.

The goodness-of-fit results support the overall feasibility of the IKM Plus model, with five of nine fit indices meeting or exceeding recommended thresholds. Nevertheless, the non-ideal SRMR and AGFI values suggest that the model structure may benefit from further refinement in future research, such as the addition or revision of indicators for constructs with relatively lower fit contributions.

## CONCLUSION

This study tested the validity and feasibility of the IKM Plus model as a measurement instrument for public satisfaction with regional library services across Central Java using Confirmatory Factor Analysis. The results confirm that



all 42 indicators across 11 constructs are valid and reliable, and that the IKM Plus model demonstrates acceptable structural fit for measuring community satisfaction in this context. The model provides a more comprehensive assessment of public satisfaction than the conventional IKM by incorporating service quality, community value, price perception, organizational image, and user sacrifice as distinct and empirically supported constructs.

The findings suggest that library management should prioritize service reliability and the reduction of user sacrifice as the most influential levers of public satisfaction. Policy efforts aimed at improving library services should extend beyond conventional service quality indicators to address the full range of factors that shape user experience.

This study has several limitations that should be acknowledged. First, the sample was restricted to libraries holding A accreditation, which represents the highest institutional standard. The findings may therefore not generalize to libraries with lower accreditation levels or weaker service infrastructure. Second, the study was conducted exclusively in Central Java Province, limiting geographic transferability. Third, the cross-sectional survey design captures user perceptions at a single point in time and cannot account for changes in satisfaction over time. Future research should extend the application of IKM Plus to libraries with varying accreditation levels, across multiple provinces, and using longitudinal designs to strengthen the generalizability and robustness of the findings.

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