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Procurement planning reforms and road infrastructure service delivery in Kibaale District Local Government. A cross-sectional study.

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ABSTRACT

Background:

Procurement planning is an important component of public procurement because it enables local governments to identify procurement requirements. The study aims to examine the relationship between procurement planning reforms and road infrastructure service delivery in Kibaale District Local Government**.**

Methodology:

A cross-sectional study. The study population comprised district officials and councillors. This group comprised 180 people in Kibaale District Local Government, including key informants (the Chief Administrative Officer, Principal Procurement Officer, Chairperson LCV, District Engineer and their assistants), technical and administrative staff, procurement and finance staff, engineering and works staff, district councillors and committee members.

Results:

Procurement planning reforms had an overall moderate implementation level (M = 3.22, SD = 0.83), the highest among the three reforms. Preparation of technical specifications before procurement received the highest rating (M = 3.51), with 50.4% agreeing, while procurement plans prepared within required periods also received positive responses (M = 3.40; 50.4%). Weaknesses were reported in specifying procurement works (M = 3.00), determining cost estimates (M = 3.02), and assessing implementation risks (M = 3.04). Qualitative and documentary findings indicated that although planning involved relevant departments, changing funding allocations, incomplete technical surveys, inadequate risk documentation, and late procurement initiation affected planning consistency. Pearson correlation revealed a positive, statistically significant relationship between procurement planning reforms and road infrastructure service delivery ($r = 0.376$, $p < 0.001$, $n = 123$). Most respondents were aged 30–39 years (35.0%) and 40–49 years (35.0%), followed by 50 years and above (20.3%), while only 9.8% were below 30 years.

Conclusion:

Procurement planning contributes to improved road infrastructure service delivery when plans are technically accurate, adequately costed, risk-informed, and consistently implemented.

Recommendations:

The Procurement and Disposal Unit should use a standard planning checklist and monitor procurement lead times monthly, so that late requisitions are identified and corrected early.

Keywords: *Procurement planning reforms, Risk documentation, Road infrastructure service delivery, Kibaale District Local Government.*
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BACKGROUND

Procurement planning is an important component of public procurement because it enables local governments to identify procurement requirements, estimate costs, allocate resources, and schedule procurement activities in advance. Effective procurement planning reduces delays, improves resource utilisation and ensures that road projects are procured and implemented within approved budgets and timelines (OECD, 2023). In road infrastructure, proper planning also allows procuring entities to prepare appropriate specifications, designs and bills of quantities before the procurement process begins.

Effective planning and institutional coordination were important for improving procurement outcomes in Uganda, noting that weaknesses in procurement processes create information gaps and accountability challenges that affect project implementation (Nduhura et al., 2020). Although the study focused on procurement and public-private

partnerships, its findings were relevant to local-government road projects in which several actors are involved in planning, procurement, and implementation.

Weaknesses in procurement governance and planning affected the efficiency of road infrastructure procurement in Uganda, and emphasised the importance of proper preparation, transparency and coordination among procurement stakeholders (Ayebesa, 2023). However, the study did not examine how procurement planning reforms influenced measurable indicators of road infrastructure service delivery at district level. The World Bank (2023) report shows that weaknesses in contract management and procurement processes in Uganda contributed to delays and unsatisfactory procurement outcomes. Effective procurement planning reduces such challenges by ensuring that procurement activities, financing, technical requirements, and implementation schedules are aligned before contracts are awarded. At the international level, the OECD (2023) emphasised that early planning and risk identification are essential in infrastructure procurement, because poor planning contributes to delays, cost increases and performance problems. Proper planning enables public entities to anticipate risks, select appropriate procurement approaches and set realistic implementation schedules, which is particularly important for road projects whose implementation depends on technical designs, weather, financing and contractor capacity. The study aims to examine the relationship between procurement planning reforms and road infrastructure service delivery in Kibaale District Local Government.

METHODOLOGY

Research Design

The study adopted a correlational and cross-sectional research design with a mixed-methods approach. The correlational design was used to establish the relationship between public procurement reforms and road infrastructure service delivery, specifically the relationships between procurement planning reforms, e-procurement reforms, contract management reforms, and road infrastructure service delivery. The cross-sectional design enabled the study to collect data from respondents at a single point in time (Creswell & Creswell, 2018).

The mixed-methods approach combined quantitative and qualitative data. Quantitative data were collected from district officials and councillors using a structured questionnaire, while qualitative data were obtained through interviews with key informants and with road users, and through a review of district records. The interviews with road users captured the experience of the people who actually use the district roads, so that the assessment of road infrastructure service delivery did not rely only on the views of those who procure and supervise the works.

Study Population

The study population comprised two groups.

District officials and councillors: This group comprised 180 people in Kibaale District Local Government, including key informants (the Chief Administrative Officer, Principal Procurement Officer, Chairperson LCV, District Engineer and their assistants), technical and administrative staff, procurement and finance staff, engineering and works staff, district councillors and committee members, and planning staff directly involved in procurement and road infrastructure planning, implementation, supervision and maintenance.

Road users: These were the end users of the district roads, namely boda boda riders and commercial drivers (taxi, bus and truck drivers) who regularly use district roads in Kibaale District to transport passengers and goods. They were selected because they use the roads more often than other members of the public and directly observe the condition of road surfaces, drainage and culverts, accessibility in the rainy season, the speed of repairs and the durability of completed works. The total number of road users is large and is not recorded in any register, so road users were not included in the population used to compute the Krejcie and Morgan (1970) sample size; instead, a purposive sample was interviewed until saturation was reached.

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Table 1: Study Population, Sample Size and Sampling Techniques

Category of respondents	Population (N)	Sample size (n)	Sampling technique
A. District officials and councillors			
Key informants: CAO, Principal Procurement Officer, Chairperson LCV, District Engineer and their assistants	8	6	Purposive sampling
District technical and administrative staff	62	42	Simple random sampling
Procurement and finance staff	25	17	Simple random sampling
Engineering and works staff	35	24	Simple random sampling
District councillors/committee members	30	20	Simple random sampling
Planning staff	20	14	Simple random sampling
Sub-total A	**180**	**123**	
B. Road users (end users)			
Boda boda riders	Not known	10	Purposive sampling
Commercial drivers (taxi, bus and truck)	Not known	10	Purposive sampling
Sub-total B		**20**	
Grand total		**143**	

Source: Kibaale District Local Government records (2026); Krejcie and Morgan (1970); Guest et al. (2006).

Sample Size

For district officials and councillors, the sample size was determined using the Krejcie and Morgan (1970) table (Appendix VI), which gives a sample of 123 for a population of 180. The sample was allocated to each category in proportion to its share of the population using the formula $n_i = (N_i \div N) \times n$, where n_i and N_i are the sample and population of each category, N is the total population (180), and n is the total sample (123), as shown in Table 3.1.

For road users, the sample size was determined by data saturation, the point at which additional interviews no longer produce new information. Guest et al. (2006) found that most themes in interview studies emerge within the first twelve interviews. The study targeted 20 road users (10 boda boda riders and 10 commercial drivers) and stopped after 17 interviews (9 boda boda riders and 8 commercial drivers), when the last interviews were no longer producing new information. The achieved sample was therefore 140 respondents: 123 officials and councillors and 17 road users.

Sampling Techniques

The study employed proportionate, purposive and simple random sampling techniques.

Proportionate sampling was used to determine the number of respondents selected from each category of district officials and councillors according to its share of the population. Purposive sampling was used to select the six key informants, namely the Chief Administrative Officer, Principal Procurement Officer, Chairperson LCV, District Engineer, Assistant Procurement Officer and Assistant District Engineer, because of their specialised knowledge of procurement and road infrastructure service delivery.

Simple random sampling was used to select respondents from the technical and administrative, procurement and finance, engineering and works, council and planning categories. Staff and councillor lists were obtained from the district human resource office and the Clerk to Council; each name was given a number, and respondents were selected using a table of random numbers, which gave each eligible respondent an equal chance of selection.

Purposive sampling was also used to select road users. The study visited boda boda stages and taxi, bus, and truck parks and produce loading points in Kibaale Town Council and the sub-counties of Kasambya, Mugarama, Bwamiramira and Kyebando, so that users of different district roads were represented. With the help of stage and park chairpersons,

the study selected road users who were aged 18 years and above, had used district roads in Kibaale District regularly for at least one year so that they could compare road conditions over time, and were willing to participate and give informed consent. Road users were interviewed when they were not carrying passengers or goods, so that the interviews did not disrupt their work.

Data Sources

The study used primary and secondary data sources. Primary data were obtained directly from respondents through questionnaires administered to district officials and councillors and interviews with key informants and road users. Secondary data were obtained from district records and official documents, including annual procurement plans for 2020/2021 to 2022/2023, electronic procurement activity reports and user support logs, road works contract files and progress reports, site inspection and measurement records, payment certificates and contract closure records, road maintenance work plans, road condition assessments and community complaint records. Secondary data were used to supplement and validate the primary data.

Data Collection Methods and Instruments

The study used a structured questionnaire, two interview guides (one for key informants and one for road users) and a documentary review checklist.

Structured Questionnaire

The structured questionnaire was the main instrument for collecting quantitative data from the 123 sampled district officials and councillors, including the six key informants, who completed the questionnaire in addition to being interviewed. It contained closed-ended items on a five-point Likert scale, ranging from 1 = Strongly Disagree to 5 = Strongly Agree, covering procurement planning reforms (11 items), e-procurement reforms (11 items), contract management reforms (11 items), and road infrastructure service delivery (11 items), as well as respondents' background characteristics.

Interview Guide for Key Informants

The study used an interview guide to collect qualitative information from the six key informants. It included ten open-ended questions on procurement planning; the use and challenges of e-procurement; contractor monitoring and quality assurance; the effects of the reforms on road delivery; and recommended measures.

Interview Guide for Road Users

A separate interview guide was used for road users, because their knowledge and experience differ from those of district officials. Road users are not involved in procurement, so the guide did not ask them about procurement planning, e-procurement, or contracts. Instead, it focused on what they experience on the roads, which reflects the dimensions of road infrastructure service delivery in the conceptual framework: road condition, durability, timeliness of works, drainage and culverts, accessibility in the rainy season, maintenance, safety, effects on their work, road coverage, and reporting of road problems. The interviews were conducted face-to-face at the stages and parks in Runyoro or English, depending on the respondent's preference, lasted about 30 minutes, and, with consent, were audio-recorded alongside the study's notes.

Documentary Review Checklist

A documentary review checklist guided the systematic review of the ten district records listed in Section 3.5 and was used to extract information on procurement practices and road project performance.

Validity and Reliability of Instruments

Validity

The questionnaire and both interview guides were reviewed by the research supervisor and experts in procurement and logistics management, who assessed the relevance, clarity, and adequacy of the items, and their recommendations were incorporated before the instruments were administered. The Content Validity Index (CVI=0.95) was computed for the questionnaire as the proportion of items rated relevant (Amin, 2005), with a minimum CVI of 0.70 considered acceptable.

Reliability

The questionnaire was pre-tested on respondents from a local government outside the study area with characteristics similar to the study population, and unclear items were revised. Reliability was then assessed using Cronbach's alpha coefficient on the responses of the 123 respondents, with a coefficient of 0.70 or above considered acceptable (Nunnally & Bernstein, 1994). The results are presented in Table 2.

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Table 2: Reliability of the Questionnaire (Cronbach's Alpha)

Section	No. of items	Cronbach's alpha	Remark
B: Procurement planning reforms	11	0.889	Reliable
C: E-procurement reforms	11	0.870	Reliable
D: Contract management reforms	11	0.856	Reliable
E: Road infrastructure service delivery	11	0.895	Reliable

Source: Primary data (2026); n = 123.

Table 2 shows that all four sections of the questionnaire had Cronbach's alpha values between 0.856 and 0.895, well above the threshold of 0.70, which indicated high internal consistency. The questionnaire was therefore reliable. The road users' interview guide was pre-tested with three road users outside the study area to check that the questions were clear in Runyoro, and the documentary review checklist was refined for consistency and clarity.

Trustworthiness of qualitative data: The credibility of the interview data was enhanced by comparing the views of road users with those of key informants, the questionnaire results, and district records. Dependability was ensured by audio-recording interviews with permission and keeping a clear record of coding decisions.

Data Collection Procedure

The study obtained an introductory letter from the School of Graduate Studies and Research and permission from the Chief Administrative Officer of Kibaale District Local Government.

The questionnaire and interview guides were pre-tested outside the study area and revised as necessary.

The selected district officials and councillors were identified from staff and council lists. Questionnaires were delivered to them at their offices and collected after an agreed period. Interviews were scheduled in advance with the six key informants and held at their offices.

With the help of stage and park chairpersons, road users were identified at boda boda stages, taxi, bus and truck parks and produce loading points, and interviewed until saturation was reached.

Relevant records were reviewed at the district procurement, engineering, planning and council offices using the documentary review checklist.

All data were checked for completeness and consistency before analysis.

Data Analysis

Quantitative data from the questionnaires were coded, entered, and analysed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics, including frequencies, percentages, means and standard deviations, were used to summarise respondents' characteristics and the study variables. Mean scores were interpreted using the scale in Table 3.

Table 3: Interpretation of Mean Scores

Mean range	Response mode	Interpretation
4.21 – 5.00	Strongly agree	Very high
3.41 – 4.20	Agree	High
2.61 – 3.40	Not sure	Moderate
1.81 – 2.60	Disagree	Low
1.00 – 1.80	Strongly disagree	Very low

Source: Adapted from the five-point Likert scale (class width = 4 ÷ 5 = 0.80).

Inferential statistics included Pearson's product-moment correlation, used to establish the relationships between procurement planning reforms, e-procurement reforms, contract management reforms, and road infrastructure service delivery, and multiple linear regression, used to determine the combined and unique contributions of the three reforms. Statistical significance was tested at the 5% level ($p \leq 0.05$).

Qualitative data from key informant and road user interviews were transcribed, translated into English where necessary, and analysed thematically. Responses were coded and organised into themes corresponding to the study objectives and the dimensions of road infrastructure service delivery. The views of road users were presented separately from those of district officials and then compared with them, to show whether the end users' experience of the roads

agreed with the district's assessment of road works. Documentary findings were summarised and compared with the questionnaire and interview findings.

Ethical Considerations

The researcher obtained the necessary clearance and permission from Team University and Kibaale District Local Government before collecting data. Respondents were informed about the purpose of the study, and their participation was based on informed consent; road users who could not write gave consent by thumbprint in the presence of a witness. Participation was voluntary, and respondents had the right to withdraw at any time without penalty.

Confidentiality and anonymity were maintained by avoiding the collection of unnecessary personal identifiers and using codes in the report: questionnaire respondents were identified by numbers, key informants as KI01 to KI06, and road users as RU01 to RU17. Road users were not asked for their names or the registration numbers of their vehicles or motorcycles. Data were securely stored and used strictly for academic purposes; information from district documents was handled responsibly, and all sources were properly acknowledged.

RESULTS

Response Rate

The study targeted 123 district officials and councillors and 20 road users. The response rate is presented in Table 4.

Table 4: Response Rate

Category of respondents	Instrument	Targeted	Achieved	Response rate (%)
District officials and councillors (including key informants)	Questionnaire	123	123	100.0
Key informants	Interview guide	6	6	100.0
Boda boda riders	Interview guide	10	9	90.0
Commercial drivers (taxi, bus and truck)	Interview guide	10	8	80.0
Total respondents		**143**	**140**	**97.9**

Source: Primary data (2026). The six key informants completed the questionnaire and were also interviewed, so they are counted once in the total.

Table 4 shows that all 123 questionnaires distributed to district officials and councillors were completed and returned, a response rate of 100%, and that all six key informants were interviewed. Of the 20 road users targeted, 17 were interviewed (9 boda boda riders and 8 commercial drivers); interviewing stopped at this point because the last interviews were no longer producing new information, which indicated that saturation had been reached (Guest et al., 2006). Overall, 140 of the 143 targeted respondents took part, a response rate of 97.9%. According to Mugenda and Mugenda (2003), a response rate of 70% and above is very good for analysis and reporting. The response rate was therefore adequate for drawing conclusions, and the high return of questionnaires was attributed to the researcher's personal delivery and follow-up and to the support of the Chief Administrative Officer.

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Table 5: Background Characteristics of Questionnaire Respondents

Variable	Category	Frequency	Percentage (%)
Sex	Male	89	72.4
	Female	34	27.6
Age	Below 30 years	12	9.8
	30–39 years	43	35.0
	40–49 years	43	35.0
	50 years and above	25	20.3
Highest education	Diploma	23	18.7
	Bachelor's degree	60	48.8
	Postgraduate Diploma	18	14.6
	Master's degree	21	17.1
	Other	1	0.8
Position/category	Key informant	6	4.9
	Administrative/Technical staff	42	34.1
	Procurement/Finance staff	17	13.8
	Engineering/Works staff	24	19.5
	District Councillor/Committee member	20	16.3
	Planning staff	14	11.4
Length of service in LG	Less than 2 years	7	5.7
	2–5 years	33	26.8
	6–10 years	45	36.6
	More than 10 years	38	30.9
Experience in procurement/roads	Less than 2 years	17	13.8
	2–5 years	37	30.1
	6–10 years	45	36.6
	More than 10 years	24	19.5

Source: Primary data (2026); n = 123 for each variable.

Table 5 shows that 72.4% of the respondents were male and 27.6% were female, which reflects the male dominance of technical and engineering positions in local government. Most respondents were aged 30–39 years (35.0%) and 40–49 years (35.0%), followed by 50 years and above (20.3%), while only 9.8% were below 30 years. The respondents were therefore mature officers with considerable working experience.

On education, 48.8% held a bachelor's degree, 18.7% a diploma, 17.1% a master's degree and 14.6% a postgraduate diploma, which shows that the respondents were sufficiently educated to understand procurement and contract-management issues. The respondents were drawn from all the categories in the sampling frame: administrative and technical staff (34.1%), engineering and works staff (19.5%), councillors and committee members (16.3%), procurement and finance staff (13.8%), planning staff (11.4%) and key informants (4.9%). On length of service, 36.6% had served in local government for 6–10 years and 30.9% for more than 10 years, while 56.1% had 6 or more years of experience in procurement or road infrastructure activities. Most respondents had therefore served throughout the 2020–2025 period covered by the study and were well placed to assess the implementation of the procurement reforms and their effects on roads.

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Profile of Key Informants

Table 6: Profile of Key Informants

Code	Position	Main area of responsibility
KI01	Chief Administrative Officer	Overall management and accounting
KI02	Principal Procurement Officer	Procurement planning and process
KI03	Chairperson LCV	Political oversight and council
KI04	District Engineer	Road design, supervision and works
KI05	Assistant Procurement Officer	Procurement records and e-procurement
KI06	Assistant District Engineer	Site supervision and inspection

Source: Primary data (2026).

Key informants were the officers who lead procurement and road works in the district: the Chief Administrative Officer, the Chairperson LCV, the Principal Procurement Officer and the Assistant Procurement Officer, and the District Engineer and the Assistant District Engineer. They therefore provided management, political, procurement, and engineering perspectives on the reforms.

Table 7: Profile of Road Users Interviewed

Characteristic	Category	Number	Percentage (%)
Category	Boda boda rider	9	52.9
	Taxi driver	3	17.6
	Bus driver	2	11.8
	Truck driver	3	17.6
Sex	Male	14	82.4
	Female	3	17.6
Years using district roads	1–2 years	1	5.9
	3–5 years	7	41.2
	More than 5 years	9	52.9
Location	Kibaale Town Council	9	52.9
	Kasambya	2	11.8
	Mugarama	2	11.8
	Bwamiramira	2	11.8
	Kyebando	2	11.8

Source: Primary data (2026); n = 17 road users (RU01–RU17).

Table 7 shows that 52.9% of the road users interviewed were boda boda riders, while the rest were taxi drivers (17.6%), truck drivers (17.6%), and bus drivers (11.8%). Most were male (82.4%), which reflects the male dominance of the transport trade, although three female operators were included. More than half (52.9%) had used district roads for more than five years and 41.2% for three to five years, so almost all could compare road conditions over time. The road users were drawn from Kibaale Town Council (52.9%) and from Kasambya, Mugarama, Bwamiramira and Kyebando (11.8% each), and between them used town roads, feeder roads, production roads and district connecting routes.

Road Infrastructure Service Delivery in Kibaale District

Road infrastructure service delivery, the dependent variable, was assessed through the questionnaire, the road user interviews, and the documentary review.

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Officials' Assessment of Road Infrastructure Service Delivery

Table 8: Officials' Responses on Road Infrastructure Service Delivery

Code	Statement	SA f (%)	A f (%)	NS f (%)	D f (%)	SD f (%)	Mean	Std. Dev.	Interp.
E1	Road works are completed within agreed contractual timelines.	6 (4.9)	17 (13.8)	43 (35.0)	27 (22.0)	30 (24.4)	2.53	1.15	Low
E2	Constructed roads meet required technical standards.	8 (6.5)	24 (19.5)	39 (31.7)	33 (26.8)	19 (15.4)	2.75	1.14	Moderate
E3	Completed roads have smooth and stable surfaces.	6 (4.9)	24 (19.5)	31 (25.2)	27 (22.0)	35 (28.5)	2.50	1.23	Low
E4	Road projects provide adequate drainage systems.	7 (5.7)	10 (8.1)	24 (19.5)	29 (23.6)	53 (43.1)	2.10	1.21	Low
E5	Culverts installed on district roads function effectively.	9 (7.3)	23 (18.7)	27 (22.0)	34 (27.6)	30 (24.4)	2.57	1.25	Low
E6	Completed roads remain in good condition for a reasonable period.	14 (11.4)	20 (16.3)	29 (23.6)	29 (23.6)	31 (25.2)	2.65	1.32	Moderate
E7	District roads remain accessible for most of the year.	11 (8.9)	16 (13.0)	23 (18.7)	38 (30.9)	35 (28.5)	2.43	1.27	Low
E8	Road projects cover priority areas identified by the district.	2 (1.6)	10 (8.1)	38 (30.9)	32 (26.0)	41 (33.3)	2.19	1.04	Low
E9	Road coverage connects communities to major service centres.	11 (8.9)	12 (9.8)	24 (19.5)	35 (28.5)	41 (33.3)	2.33	1.28	Low
E10	Road maintenance is undertaken promptly when defects are identified.	8 (6.5)	25 (20.3)	30 (24.4)	32 (26.0)	28 (22.8)	2.62	1.22	Moderate
E11	Maintenance effectively restores damaged road sections.	12 (9.8)	15 (12.2)	35 (28.5)	26 (21.1)	35 (28.5)	2.54	1.29	Low
	Overall mean						**2.47**	**0.85**	**Low**

Source: Primary data (2026); n = 123. SA = strongly agree, A = agree, NS = not sure, D = disagree, SD = strongly disagree.

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Road Users' Experience of District Roads

Table 9: Road Users' Experience of District Roads

Aspect of service delivery	Main finding from road users' accounts	Road users (n = 17)
Durability	Recently worked or repaired sections deteriorated in less than a year (three months to one rainy season); only four users cited sections that lasted about a year or more	13
Timeliness	Works continued beyond the expected period without explanation	11
	Works stopped after initial grading or drainage excavation, leaving loose soil and open channels	6
Drainage and culverts	Side drains blocked by soil and vegetation; water crossing the road; culvert openings too small	9
	Drainage inconsistent; flooding and erosion where outlets blocked or culvert approaches weak	8
Accessibility	Main sections passable, but feeder-road lowlands difficult or impassable during heavy or prolonged rain	17
Maintenance	Small defects left for weeks or months before repair	13
	Faster response near town; residents fill holes themselves on remote roads	4
Safety	Potholes, dust, narrow sections, weak edges and limited signs create risks	17
Economic effects	Higher fuel use, tyre and suspension repairs, longer trips and higher fares	17
Road coverage	Main centres connected, but remote villages poorly linked to markets and services	17
Reporting and feedback	Complaints made informally through stage or local leaders; little feedback on repair dates	17

Source: Road user interviews (2026).

Table 9 shows that the road users' experience agreed closely with the officials' assessment. The most consistent concern was durability: 13 of the 17 road users described recently worked or repaired sections that deteriorated in less than a year. A boda boda rider in Kasambya explained:

"The gravel looked good initially but began washing away within one rainy season, especially on the slope." (RU04, Boda boda rider)

Another rider in Karuguuza attributed early failure to poor workmanship:

"Grading improved the road for roughly three months. Corrugations returned because the surface was not compacted sufficiently." (RU02, Boda boda rider)

Drainage was repeatedly identified as the cause of early failure. All 17 road users described blocked side drains, water crossing the road, or weak culvert approaches, and several noted that sections with working drains lasted longer. A taxi driver observed that one route "began failing within six months because water was not directed away" (RU10), while a truck driver reported that a farm road "failed first at drainage crossings" (RU14).

All 17 road users reported that feeder-road lowlands became difficult or impassable during heavy or prolonged rain, and 13 said that small defects were left for weeks or months before repair, by which time "potholes and drainage damage have grown". Eleven described works that continued beyond the expected period without explanation, and six had seen works stop after initial grading or drainage excavation, leaving loose soil and open channels. The road users also described the economic burden of poor roads. Boda boda riders reported that they replaced "tyres, shocks and chains more often", while commercial drivers explained that "delays reduce the number of trips, and operators may charge more on difficult routes." Finally, all 17 reported that complaints were made informally through stage leaders, councillors or local council leaders, and that "feedback about repair dates is limited."

Table 10: Documentary Findings on Road Infrastructure Service Delivery

Document reviewed	Period	Finding
District Road Maintenance Work Plans	2024/2025	Priority sections and routine maintenance activities were listed, but resource constraints affected timing and the frequency of intervention on remote feeder roads.
Road Condition Assessment and Community Complaint Records	2024/2025	The records highlighted recurring potholes, blocked drains, erosion around culverts, and complaints about deterioration after heavy rain.

Source: Documentary review of Kibaale District Local Government records (2026).

Table 10 shows that the district's own records confirmed the views of officials and road users. The 2024/2025 road maintenance work plans listed priority sections and routine maintenance activities, but resource constraints affected the timing and frequency of interventions on remote feeder roads. The road condition assessment and community complaint records highlighted recurring potholes, blocked drains, erosion around culverts, and complaints about deterioration after heavy rain. Taken together, the questionnaire, road user and documentary evidence show that road infrastructure service delivery in Kibaale District was poor, and that drainage failure, short road life, slow maintenance and limited coverage of remote areas were its main weaknesses.

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Questionnaire Findings on Procurement Planning Reforms

Table 11: Responses on Procurement Planning Reforms

Code	Statement	SA f (%)	A f (%)	NS f (%)	D f (%)	SD f (%)	Mean	Std. Dev.	Interp.
B1	The district prepares procurement plans.	20 (16.3)	27 (22.0)	37 (30.1)	27 (22.0)	12 (9.8)	3.13	1.21	Moderate
B2	Procurement activities are aligned with approved district work plans.	20 (16.3)	37 (30.1)	32 (26.0)	20 (16.3)	14 (11.4)	3.24	1.24	Moderate
B3	Procurement plans are prepared within required planning periods.	25 (20.3)	37 (30.1)	34 (27.6)	16 (13.0)	11 (8.9)	3.40	1.21	Moderate
B4	Adequate funds are identified before road procurement begins.	25 (20.3)	35 (28.5)	33 (26.8)	15 (12.2)	15 (12.2)	3.33	1.27	Moderate
B5	Procurement plans clearly specify the works to be procured.	15 (12.2)	28 (22.8)	36 (29.3)	30 (24.4)	14 (11.4)	3.00	1.19	Moderate
B6	Estimated costs are properly determined during procurement planning.	13 (10.6)	34 (27.6)	34 (27.6)	27 (22.0)	15 (12.2)	3.02	1.19	Moderate
B7	Procurement schedules allow sufficient time for procurement activities.	16 (13.0)	31 (25.2)	37 (30.1)	26 (21.1)	13 (10.6)	3.09	1.19	Moderate
B8	Technical specifications are prepared before procurement begins.	33 (26.8)	29 (23.6)	35 (28.5)	20 (16.3)	6 (4.9)	3.51	1.19	High
B9	Procurement plans are regularly reviewed.	21 (17.1)	36 (29.3)	34 (27.6)	22 (17.9)	10 (8.1)	3.29	1.19	Moderate
B10	Procurement planning involves relevant technical and administrative departments.	22 (17.9)	33 (26.8)	39 (31.7)	21 (17.1)	8 (6.5)	3.33	1.15	Moderate
B11	Procurement planning considers risks affecting project implementation.	19 (15.4)	26 (21.1)	34 (27.6)	29 (23.6)	15 (12.2)	3.04	1.25	Moderate
	Overall mean						**3.22**	**0.83**	**Moderate**

Source: Primary data (2026); n = 123. SA = strongly agree, A = agree, NS = not sure, D = disagree, SD = strongly disagree.

Table 11 shows that procurement planning reforms were moderately implemented, with an overall mean of 3.22 (SD = 0.83), the highest of the three reforms. The highest-rated item was the preparation of technical specifications before procurement (mean = 3.51; 50.4% agreeing), the only item rated highly. This was followed by the preparation of procurement plans within the required periods (mean = 3.40; 50.4% agreeing), the identification of adequate funds before road procurement began (mean = 3.33; 48.8%), and the

involvement of relevant technical and administrative departments (mean = 3.33; 44.7%).

However, the quality of the plans was poorer. Only 35.0% of the respondents agreed that procurement plans clearly specified the works to be procured (mean = 3.00), while 35.8% disagreed; only 38.2% agreed that estimated costs were properly determined (mean = 3.02); and only 36.6% agreed that procurement planning considered risks affecting implementation (mean = 3.04), while 35.8% disagreed. Only 38.2% agreed that procurement schedules allowed sufficient time for procurement activities (mean = 3.09). This implies that procurement plans were prepared and involved the relevant departments, but that the detail and accuracy of scopes, cost estimates, schedules, and risk assessment remained weak.

Key Informant Findings on Procurement Planning

The key informants confirmed that procurement planning followed a participatory process involving engineering, planning, finance and procurement, but that plans were unstable. The Chief Administrative Officer explained:

"Road projects begin with submissions from engineering and planning units, supported by road-condition assessments and priorities from lower local governments. Proposals are consolidated into the district work plan, budget and annual procurement plan. Planning remains iterative because indicative figures may change before final releases are known." (KI01, Chief Administrative Officer)

The key informants identified late confirmation of funds, changing priorities, emergency road failures, and incomplete technical information as the main planning challenges. The CAO noted that "some roads enter the work plan before quantities and drainage requirements are fully established, leading to revisions during implementation" (KI01), while the District Engineer explained:

"Funding ceilings may be known before detailed surveys are completed. Road conditions worsen between planning and implementation, and inadequate survey data can underestimate gravel, culvert or drainage quantities." (KI04, District Engineer)

The Principal Procurement Officer added that submissions were sometimes late and that "repeated amendments reduce the usefulness of the original schedule" (KI02), and the Assistant Procurement Officer observed that "a delay at one stage pushes evaluation, award and mobilisation later" (KI05). The Chairperson LCV pointed out that "needs exceed the available budget" and that political pressure arose when technically urgent roads differed from community preferences (KI03). These views explain the moderate ratings given to the accuracy of scopes, estimates and risk planning.

Documentary Findings on Procurement Planning

Table 12: Documentary Findings on Procurement Planning

Document reviewed	Period	Finding
District Procurement Plan 2020/2021	2020/2021	Road procurements were included in the annual plan, but several planned dates were revised after changes in funding and delayed technical submissions.
District Procurement Plan 2021/2022	2021/2022	Most road packages showed estimated values and procurement methods, but risk controls and detailed dependencies were not consistently recorded.
District Procurement Plan 2022/2023	2022/2023	Some road-work requisitions were initiated later than dates shown in the approved procurement plan.

Source: Documentary review of Kibaale District Local Government records (2026).

Table 12 shows that road procurements were included in the annual procurement plans for 2020/2021 to 2022/2023, but that several planned dates were revised after changes in funding and delayed technical submissions, that risk controls and dependencies were not consistently recorded, and that some road-work requisitions were initiated later than the dates in the approved plan. The records therefore confirm that procurement planning existed formally but was not consistently followed, and that late initiation compressed implementation periods and increased the risk of late completion.

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Relationship between Procurement Planning Reforms and Road Infrastructure Service Delivery

Table 13: Correlation between Procurement Planning Reforms and Road Infrastructure Service Delivery

Variable	Statistic	Road infrastructure service delivery
Procurement planning reforms	Pearson correlation (r)	0.376**
	Sig. (2-tailed)	0.000
	N	123

*Source: Primary data (2026). ** Significant at the 0.01 level; * significant at the 0.05 level (2-tailed).*

Table 4.10 shows a positive and statistically significant relationship between procurement planning reforms and road infrastructure service delivery ($r = 0.376$, $p < 0.001$, $n = 123$). The relationship was weak to moderate in strength. This means that respondents who reported better procurement planning also reported better road service delivery, while weaker planning was associated with poorer road outcomes. The coefficient of determination ($r^2 = 0.141$) indicates that procurement planning reforms alone accounted for about 14.1% of the variation in road infrastructure service delivery. The qualitative evidence explains this relationship: incomplete surveys, underestimated drainage and culvert quantities, and late initiation of procurement led to variations, delays, and drainage defects, which in turn shortened the life of the roads.

Discussion

Procurement Planning Reforms and Road Infrastructure Service Delivery

The study established a positive and significant relationship between procurement planning reforms and road infrastructure service delivery ($r = 0.376$, $p < 0.001$), and procurement planning remained a significant unique predictor when the other reforms were controlled ($\beta = 0.285$, $p = 0.001$). This finding agrees with the OECD (2023), which emphasised that early planning and risk identification are essential in infrastructure procurement because poor planning contributes to delays, cost increases, and performance problems. It also supports Nduhura et al. (2020), who found that effective planning and institutional coordination improved procurement outcomes in Uganda, and Ayebesa (2023), who found that weaknesses in procurement governance and planning affected the efficiency of road procurement.

The study further showed that the weakness was not the absence of planning but its quality. Procurement plans were prepared and involved the relevant departments, but scopes, cost estimates, schedules, and risk assessments were weak. Key informants explained that roads entered the work plan before quantities and drainage requirements were fully established, that funding ceilings were known before detailed surveys were done, and that late requisitions delayed award and mobilisation, while the procurement plans showed revised dates, incomplete risk documentation and late initiation. This chain from incomplete preparation to underestimated drainage quantities, variations, and delays explains why planning was related to road outcomes, and it is consistent with the World Bank's (2023) observation that misalignment between procurement activities, financing, and technical requirements contributes to unsatisfactory procurement outcomes. In terms of the Principal-Agent Theory, incomplete specifications and estimates increase information asymmetry between the district and its contractors, because the district cannot hold contractors to standards that were never fully defined.

Conclusion

Effective procurement planning is essential for translating public resources into improved road infrastructure services, and its contribution depends on the accuracy, preparedness, and reliability of planning processes, as weaknesses in these areas undermine implementation efficiency and the achievement of intended infrastructure outcomes.

Limitations

The study faced some limitations. First, some respondents were initially reluctant to give information on procurement practices and contract performance because of the sensitivity of the subject; this was reduced by assuring them of confidentiality and by triangulating their responses with records and road users' views.

Second, some respondents may have given socially desirable responses on procurement compliance; the fact that respondents rated road service delivery low suggests that this bias was limited.

Third, respondents had limited time because of their official duties, and road users were reluctant to stop working, so road user interviews were held during quiet periods at the stages and parks.

Fourth, some procurement and contract records were incomplete or not equally detailed for all projects, which limited the use of quantitative secondary data; the documentary review therefore focused on the content and completeness of records.

Finally, road service delivery is also affected by factors outside procurement, such as funding levels and heavy rainfall, which the study did not measure directly; these were considered when interpreting the findings.

Recommendations

The District Engineer's office should complete detailed road surveys, designs, bills of quantities, and drainage assessments before road packages are included in the procurement plan, and the district should allocate funds for this purpose.

The Procurement and Disposal Unit should use a standard planning checklist and monitor procurement lead times monthly, so that late requisitions are identified and corrected early.

Procurement plans should include a risk register for each road package, covering funding delays, rainfall, scope changes and contractor capacity, with planned responses.

The district should align the procurement calendar with the expected timing of fund releases and schedule earthworks and drainage for the dry seasons where possible.

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List of abbreviations

CAO; Chief Administrative Officer
CVI; Content Validity Index
KI; Key Informant
LCV; Local Council Five
LG; Local Government
OECD; Organisation for Economic Co-operation and Development
SPSS Statistical Package for the Social Sciences

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The author did not declare any conflict of interest.

Data availability

Data are available upon request.

Author contribution

Tibasiima Annette; Conceptualisation, Funding acquisition, Methodology, Formal analysis, Investigation, Writing – original draft, Resources

Dr Muhammad Sendagi; Supervision, Validation, Visualisation, Data curation, Project administration, Supervision, Writing – review & editing

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