

**Transport Accessibility and Tourism Turnout in Rural Areas in Uganda: A Case Study of Mpigi District**

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**Abstract**

This study examined the relationship between transport accessibility and tourism turnout in rural areas in Uganda, using Mpigi District as a case study. Recognising that access is a fundamental precondition for tourism, the study investigated how road infrastructure, transport availability, transport cost, and travel time relate to tourist turnout at rural attractions. A cross-sectional survey design with a mixed-methods approach was adopted, and data were collected from 180 respondents comprising tourists, tourism operators, and local officials using questionnaires and interviews. Descriptive statistics, Pearson correlation, and multiple regression were used for analysis. The results revealed a strong positive and significant relationship between transport accessibility and tourism turnout ( $r = 0.67$ ,  $p < 0.01$ ), with transport dimensions jointly explaining 51.6% of the variance in tourism turnout ( $R^2 = 0.516$ ). Road infrastructure and transport availability were the strongest predictors. The study concludes that transport accessibility significantly influences tourism turnout in rural areas and recommends investment in rural road infrastructure, improved transport services, and reduced travel costs.

**Keywords: transport accessibility, tourism turnout, rural tourism, road infrastructure, Mpigi District, Uganda**

**1. Introduction**

Tourism is a significant driver of economic growth, employment, and foreign-exchange earnings in Uganda, and it holds particular promise for rural areas endowed with natural, cultural, and heritage attractions (Ministry of Tourism, Wildlife and Antiquities, 2023). Yet the realisation of this promise depends critically on the ability of tourists to reach these attractions, making transport accessibility a fundamental precondition for tourism development (Julius et al., 2024). Without adequate access, even the most compelling attractions remain underutilised, and the potential economic benefits of tourism to rural communities go unrealised (Prideaux, 2021). Understanding the relationship between transport accessibility and tourism turnout is therefore essential to the development of rural tourism (Christopher & Felex, 2022a).

Transport accessibility refers to the ease with which people can reach a destination, encompassing the quality of road infrastructure, the availability of transport services, the cost of travel, and the time required to reach the destination (Litman, 2022). In the tourism context, accessibility shapes not only whether tourists can reach an attraction but also whether they choose to, since difficult, costly, or time-consuming access deters visitation (Christopher & Felex, 2022b). The theoretical expectation is that better transport accessibility increases tourism turnout by reducing the

**Received: 14.07.2026**

**Accepted: 18.07.2026**

**Published on: 30.07.2026**

barriers and costs associated with travel, thereby making attractions more attractive to potential visitors (Prideaux, 2021).

Rural tourism in Uganda faces distinctive accessibility challenges. Many rural attractions are served by poor road infrastructure, characterised by unpaved, poorly maintained roads that become difficult or impassable in the rainy season; by limited and irregular public transport; by relatively high transport costs; and by long travel times from major population centres and tourist gateways (Ministry of Works and Transport, 2023). These conditions constrain tourist turnout and limit the economic benefits that tourism could bring to rural communities (Nyaupane & Timothy, 2021). Mpigi District, located in central Uganda not far from Kampala, possesses cultural and natural attractions yet exemplifies the accessibility challenges that shape rural tourism, providing an instructive setting for this study (Filstar, 2023).

The relationship between transport and tourism is well established in principle but varies in its specifics across contexts. Road infrastructure quality, the availability and reliability of transport, the affordability of travel, and travel time each influence tourists' decisions and experiences (Litman, 2022). In rural areas with limited alternatives, these factors can be decisive. Whether and to what extent transport accessibility drives tourism turnout in a specific rural district such as Mpigi is an empirical question with direct implications for tourism planning and infrastructure investment (Kayondo & Mugisha, 2023).

Although the importance of transport for tourism is widely acknowledged, empirical evidence quantifying the relationship between transport accessibility and tourism turnout in rural Ugandan settings remains limited, and few studies disaggregate the effects of specific accessibility dimensions (Kayondo & Mugisha, 2023). This study addresses that gap by examining, through correlation and regression analysis, how road infrastructure, transport availability, transport cost, and travel time relate to tourism turnout in Mpigi District (Deus, 2023). The findings are significant for tourism authorities, transport planners, local governments, and tourism operators seeking to develop rural tourism (Julius et al., 2024). The article continues with the problem statement, objectives, literature review, methodology, results and interpretation, and conclusions.

## **2. Statement of the Problem**

Rural areas in Uganda, including Mpigi District, possess natural, cultural, and heritage attractions with significant tourism potential (Ministry of Tourism, Wildlife and Antiquities, 2023). Ideally, this potential should translate into robust tourist turnout that generates income and employment for rural communities. In practice, however, tourist turnout at many rural attractions remains low, and the extent to which transport accessibility accounts for this shortfall has not been clearly established through rigorous empirical research (Kayondo & Mugisha, 2023).

Rural tourism in the district is constrained by poor road infrastructure, limited and irregular transport services, relatively high transport costs, and long travel times, all of which may deter potential visitors (Ministry of Works and Transport, 2023). These accessibility challenges may cause attractions to be underutilised despite their appeal, but the precise contribution of each dimension of transport accessibility to tourism turnout remains unclear (Litman, 2022). Without clear evidence on which accessibility factors most strongly influence turnout, investments in infrastructure and transport services risk being poorly targeted, and the economic potential of rural tourism may continue to go unrealized (Bayes, 2012).

If the relationship between transport accessibility and tourism turnout is not clearly established and addressed, rural attractions in the district may continue to attract few visitors, denying rural communities the economic benefits of tourism (Christopher & Felex, 2022b). This study therefore sought to examine the relationship between transport accessibility and tourism turnout in Mpigi District and to identify which accessibility dimensions most strongly influence turnout.

### **3. Main Objective**

The main objective of the study was to examine the relationship between transport accessibility and tourism turnout in rural areas in Uganda, with specific reference to Mpigi District.

#### **3.1 Specific Objectives**

- i. To assess the level of transport accessibility to tourism attractions in Mpigi District.
- ii. To establish the relationship between transport accessibility dimensions (road infrastructure, transport availability, transport cost, and travel time) and tourism turnout.
- iii. To determine the relative contribution of each accessibility dimension to tourism turnout.

### **4.0 Literature Review**

Research on transport and tourism draws on several theoretical perspectives, including the theory of tourism destination accessibility, the distance-decay model, and location theory. The concept of destination accessibility holds that the ease of reaching a destination is a core component of its attractiveness and a determinant of visitation (Prideaux, 2021). The distance-decay model posits that visitation to a destination declines as the distance, cost, and effort required to reach it increase, implying that accessibility factors directly shape turnout (Nyaupane & Timothy, 2021). Location theory similarly emphasises the role of transport costs and accessibility in shaping the spatial distribution of economic activity, including tourism (Litman, 2022). Together, these perspectives frame transport accessibility as a fundamental driver of tourism turnout (Ivan & Kazaara, 2023).

Empirical studies broadly confirm a strong relationship between transport accessibility and tourism. Prideaux (2021) demonstrates that transport is a critical enabler of tourism and that improvements in transport infrastructure and services are associated with increased visitation. Studies across developing regions find that poor road infrastructure and limited transport services constrain tourism development, particularly in rural areas (Nyaupane & Timothy, 2021). Research in East Africa reports that accessibility challenges limit the turnout at rural and off-the-beaten-path attractions, and that infrastructure investments can unlock tourism potential (Kayondo & Mugisha, 2023; Ministry of Tourism, Wildlife and Antiquities, 2023).

Road infrastructure features prominently as a determinant of tourism turnout. The quality of roads—whether paved, well-maintained, and passable in all seasons—strongly influences the ease and comfort of reaching attractions (Ministry of Works and Transport, 2023). Studies show that poor road conditions deter visitation, increase travel time and cost, and diminish the tourist experience, whereas improved roads enhance turnout (Litman, 2022). In rural areas, road quality is often the binding constraint on accessibility. Transport availability constitutes a second major theme. The availability and reliability of transport services—public transport, tour operators, and other options—determine whether tourists, especially those without private vehicles, can reach attractions (Prideaux, 2021). Studies find that limited or irregular transport services constrain turnout, particularly in rural areas where such services are sparse (Nyaupane & Timothy, 2021).

Transport cost and travel time form further themes (Deus, 2023). The cost of travel affects tourists' decisions, with higher costs deterring visitation, consistent with the distance-decay model (Nyaupane & Timothy, 2021). Travel time similarly influences turnout, as long journeys deter visitors and reduce the appeal of destinations, especially for day trips (Litman, 2022). The literature emphasises that these dimensions interact—poor roads increase both cost and time—and that comprehensive accessibility requires addressing all of them. Despite this body of work, few Ugandan studies quantify and compare the effects of specific accessibility dimensions on tourism turnout in a rural district, a gap this study addresses (Christopher & Micheal, 2022).

## **5.0 Methodology**

### **5.1 Research Design**

The study adopted a cross-sectional survey design employing a mixed-methods approach (Creswell & Creswell, 2021). The quantitative component enabled measurement and testing of relationships, while the qualitative component provided contextual depth on accessibility and tourism dynamics. The design suited the examination of the relationship using data collected at a single point in time.

### **5.2 Study Population and Area**

**Received: 14.07.2026**

**Accepted: 18.07.2026**

**Published on: 30.07.2026**

The study was conducted in Mpigi District, central Uganda. The target population comprised tourists visiting attractions in the district, tourism operators (including tour guides, hospitality providers, and attraction managers), and local officials responsible for tourism and infrastructure. Tourists provided perspectives on accessibility and visitation decisions, while operators and officials provided operational and planning perspectives.

### **5.3 Sample Size and Sampling Techniques**

A sample of 180 respondents was drawn, comprising 120 tourists, 40 tourism operators, and 20 local officials. The sample size was determined with reference to the Krejcie and Morgan (1970) guidelines. Tourists were selected using convenience and systematic sampling at attractions, while operators and officials were selected purposively as key informants.

### **5.4 Data Collection Instruments**

A structured questionnaire measured the transport accessibility dimensions—road infrastructure, transport availability, transport cost, and travel time—and tourism turnout on a five-point Likert scale, with turnout corroborated using operators' visitation records where available. Interview guides were used with operators and officials to obtain qualitative insights into accessibility and turnout.

### **5.5 Validity and Reliability**

Content validity was established through expert review by tourism and transport specialists, yielding a content validity index above 0.70 (Amin, 2005). Reliability was confirmed through a pilot study, and the Cronbach's alpha for the accessibility scale was 0.87, indicating high internal consistency.

### **5.6 Data Analysis**

Quantitative data were analysed using SPSS (Nelson et al., 2022). Descriptive statistics summarised accessibility and turnout. Pearson correlation established the strength and direction of relationships, and multiple regression assessed the combined and relative effects of the accessibility dimensions on tourism turnout. Qualitative data were analysed thematically.

### **5.7 Ethical Considerations**

Permissions were obtained from the relevant authorities, informed consent was secured from respondents, participation was voluntary, and confidentiality and anonymity were maintained throughout the study (Creswell & Creswell, 2021).

## **6.0 Results and Interpretation**

6.1 Descriptive Statistics

Table 1 presents the descriptive statistics for the transport accessibility dimensions and tourism turnout based on responses from the 180 participants.

| Variable                        | Mean | Std. Dev. | Interpretation |
|---------------------------------|------|-----------|----------------|
| Road infrastructure             | 2.71 | 0.92      | Low            |
| Transport availability          | 2.88 | 0.87      | Moderate       |
| Transport cost (affordability)  | 2.79 | 0.90      | Low            |
| Travel time (convenience)       | 2.95 | 0.85      | Moderate       |
| Overall transport accessibility | 2.83 | 0.78      | Moderate       |
| Tourism turnout                 | 2.92 | 0.75      | Moderate       |

Source: Primary Data, 2025

The descriptive results in Table 1 indicate that transport accessibility to tourism attractions in Mpigi District was, on the whole, moderate to low, reflected in an overall mean of 2.83 and a standard deviation of 0.78. Travel time (convenience) recorded the highest mean (2.95), owing partly to the district's proximity to Kampala, followed by transport availability (2.88). Road infrastructure recorded the lowest mean (2.71), and transport cost affordability was also rated low (2.79), pointing to poor road conditions and relatively high travel costs as the principal accessibility constraints—consistent with the infrastructure deficits documented for rural Uganda (Ministry of Works and Transport, 2023). Tourism turnout was rated moderate (2.92), reflecting the underutilisation of attractions. The sizeable standard deviations reveal meaningful variation across attractions and respondents.

6.2 Correlation Analysis

Pearson correlation was used to establish the relationships between the transport accessibility dimensions and tourism turnout, as shown in Table 2.

| Variable                        | Tourism Turnout (r) | Sig. (p) |
|---------------------------------|---------------------|----------|
| Road infrastructure             | 0.62                | 0.000    |
| Transport availability          | 0.59                | 0.000    |
| Travel time (convenience)       | 0.52                | 0.000    |
| Transport cost (affordability)  | 0.50                | 0.000    |
| Overall transport accessibility | 0.67                | 0.000    |

Source: Primary Data, 2025

The correlation results in Table 2 demonstrate that all transport accessibility dimensions were positively and significantly related to tourism turnout at the 0.01 level. Overall transport accessibility showed a strong positive correlation with turnout ( $r = 0.67$ ,  $p < 0.01$ ), confirming that better accessibility is accompanied by higher tourist turnout, consistent with the distance-decay model and the theory of destination accessibility (Nyaupane & Timothy, 2021; Prideaux, 2021). Road infrastructure recorded the strongest individual association ( $r = 0.62$ ), underscoring that road quality is the pivotal accessibility factor in rural tourism (Litman, 2022). Transport availability followed ( $r = 0.59$ ), reflecting the importance of reliable transport services. Travel time ( $r = 0.52$ ) and transport cost ( $r = 0.50$ ) were also significantly correlated, though more moderately (Nelson et al., 2023). The consistently positive pattern strongly supports the study's central proposition.

### 6.3 Regression Analysis

Multiple linear regression assessed the combined and relative effects of the transport accessibility dimensions on tourism turnout. Tables 3 and 4 present the results.

| Model Summary                  |                  | Value                 |          |
|--------------------------------|------------------|-----------------------|----------|
| R                              |                  | 0.718                 |          |
| R Square                       |                  | 0.516                 |          |
| Adjusted R Square              |                  | 0.505                 |          |
| Std. Error of Estimate         |                  | 0.478                 |          |
| F (4, 175)                     |                  | 46.62 ( $p = 0.000$ ) |          |
| Predictor                      | Beta ( $\beta$ ) | t                     | Sig. (p) |
| Road infrastructure            | 0.33             | 4.79                  | 0.000    |
| Transport availability         | 0.28             | 4.05                  | 0.000    |
| Travel time (convenience)      | 0.16             | 2.55                  | 0.012    |
| Transport cost (affordability) | 0.14             | 2.18                  | 0.031    |

The regression model summary in Table 3 indicates that the four accessibility dimensions jointly explained 51.6% of the variance in tourism turnout ( $R^2 = 0.516$ ), a substantial proportion establishing transport accessibility as a major determinant of turnout. The model was highly significant ( $F(4, 175) = 46.62$ ,  $p < 0.01$ ), confirming its predictive validity. The remaining 48.4% of variance is attributable to other factors such as the appeal and marketing of attractions, security, seasonality, and tourists' incomes that lie outside the model (Prideaux, 2021).

The standardised coefficients in Table 4 clarify the relative importance of each dimension. Road infrastructure emerged as the strongest predictor ( $\beta = 0.33$ ,  $p < 0.01$ ), confirming that the quality of roads is the most influential accessibility factor for tourism turnout in rural areas, consistent with the observation that road quality often constitutes

the binding constraint on rural accessibility (Litman, 2022; Ministry of Works and Transport, 2023). Transport availability followed ( $\beta = 0.28$ ,  $p < 0.01$ ), demonstrating that reliable transport services materially enhance turnout, particularly for visitors without private vehicles. Travel time ( $\beta = 0.16$ ,  $p < 0.05$ ) and transport cost ( $\beta = 0.14$ ,  $p < 0.05$ ) contributed positively but more modestly, in part because they are themselves shaped by road quality and service availability. Overall, the results suggest that investment in rural road infrastructure and improved transport services offers the greatest leverage for increasing tourism turnout in the district (Kayondo & Mugisha, 2023; Prideaux, 2021).

### **7.0 Conclusion and Recommendations**

The study concludes that transport accessibility has a strong, positive, and significant relationship with tourism turnout in rural areas of Mpigi District, with road infrastructure and transport availability being the most influential dimensions. It is recommended that the government and local authorities invest in the improvement and maintenance of rural road infrastructure serving tourism attractions, support the development of reliable and affordable transport services, and integrate transport planning with tourism development (Ministry of Tourism, Wildlife and Antiquities, 2023; Ministry of Works and Transport, 2023). Tourism operators should facilitate transport arrangements for visitors. Future research could employ objective visitation data and longitudinal designs to further establish causality and examine accessibility across multiple rural districts.

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