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Turning Namugongo into a Smart Religious Tourist City: A Tool to Boost Uganda's Economic Opportunities from Religious Tourism

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ABSTRACT

Religious tourism is an important part of Uganda's cultural heritage, yet its economic potential remains untapped due to urban congestion and infrastructure challenges. This paper explores the transformation of the Uganda Martyrs Shrine in Namugongo into a smart city to enhance pilgrim experiences and increase economic opportunities. This paper integrates theories of religious tourism and smart cities to explore Namugongo's untapped potential as a smart city to contribute to the limited empirical literature on these theories in a developing country context. It assesses the challenges faced in the bid to achieve smartness and how they can be minimized. The paper used a qualitative methodology, including document review and case analysis of global smart cities such as Singapore and New York, as well as African counterparts such as Kigali and Cape Town. Findings indicate that Namugongo has potential for year-round recreational tourism, waste-to-energy initiatives, and entrepreneurial initiatives such as purified "Martyr's Lake" water. The successful implementation of these projects, however, faces challenges, including high infrastructural costs and stakeholder coordination. The paper argues that a phased integration of Information and Communication Technologies (ICT) solutions, such as smart mobility and

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ARTICLE INFO

Received: 12 September 2025 | Revised: 3 November 2025 | Accepted: 10 November 2025 | Published Online: 17 November 2025
DOI: <https://doi.org/10.63385/sriic.v1i3.101014>

CITATION

Nassuna, A.N., Ntamu, D.N., Ssemusu, L., 2025. Turning Namugongo into a Smart Religious Tourist City: A Tool to Boost Uganda's Economic Opportunities from Religious Tourism. *Standards-related Regional Innovation and International Cooperation*. 1(3): 1–13. DOI: <https://doi.org/10.63385/sriic.v1i3.101014>

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digital governance, would promote sustainability while preserving spiritual purity. The paper concludes that a collaborative, people-centered smart city framework is important for Namugongo to attract more tourists, as other global religious hubs, such as Mecca and Jerusalem, do.

Keywords: Religious Tourism; Namugongo; Smart City; Uganda Martyrs

1. Introduction

Namugongo town provides key economic opportunities for Uganda and the international community through religious tourism^[1,2]. Religious tourism enhances tourists' spiritual connections and personal growth through exploration of spiritual and cultural sites^[3,4]. Globally, religious tourism destinations have been used to boost economic and social support for various countries. It is one of the oldest forms of tourism promoted in other cities, including Mecca in Saudi Arabia, Jerusalem in Israel, Fatima in Portugal, and Rishikesh in India, among others, and has changed the economic status of their countries^[5]. The key pillars of religious tourism include belief authenticity, sacred places and spaces, religious rituals and practices, exploration of culture, events, or place history, and personal transformation and space^[6]. Namugongo is a key religious tourism destination in Africa and in Uganda because it hosts the Uganda Martyrs' religious sites for all major religions in Uganda, including Catholic, Protestant, and, recently, Muslim sites^[7]. Namugongo is also one of the most popular religious tourism destinations in Africa with a rich historical and cultural heritage^[8].

Despite Namugongo's religious and economic importance, its tourism potential has not been fully realized^[11]. Currently, tourists mainly visit once a year on 3rd June, when the country celebrates the Uganda Martyrs, which limits the steady flow of tourists and revenue from Namugongo.. In addition, although the number of tourists has been increasing over the years, the infrastructure has not been fully developed to accommodate the growing number and provide a more magnificent and organized experience. In addition, the increase in tourist numbers has resulted in challenges such as traffic jams, limited access to decent food, security threats, and poor or barely decent accommodation, among others. Such challenges need to be addressed if the economic value of Namugongo is to be tapped. The government of Uganda, working with religious communi-

ties, has tried to improve infrastructure and security around Namugongo to minimize the challenges, but they persist. Empirically, religious tourism has not received much attention in developing countries^[2]. This paper contributes to closing this gap by focusing on religious tourism in a developing country context.

This paper is primarily anchored in religious tourism theory. Whereas there is no single unified theory of religious tourism, combinations of theoretical strands have been used to explain it, mainly motivation and experience theories. It is argued that people's motivation to engage in religious tourism is driven by various factors, ranging from purely faith-based sacred reasons to secular ones^[5,9]. It is further explained that the experiences tourists have during religion-based travel may encourage them to return or refer other tourists for secular reasons. Therefore, places that give tourists transformational experiences attract many more tourists over time. Religious tourists travel for various reasons, including paying homage to the origins of their religions, seeking healing and spiritual enhancement, appreciating religious architecture, and enjoying unique cuisine in religious tourist areas^[4], recognizing that tourists to religious destinations visit with mixed motivations. In this regard, the theory of religious tourism clarifies that when planning religious tourist destinations, it is important to consider all the reasons/motivations people may travel to such places, including spiritual enhancement, learning about different cultures and historical perspectives, recreational reasons, and social interactions, among others. It has also been argued that religious tourism yields various benefits to the countries visited, including global visibility and recognition, job creation and increased income, infrastructure improvements, and overall economic growth^[5]. Nonetheless, religious tourism theories are limited in explaining how religious destinations transform the areas where they are located, how the economic growth therefrom may be further enhanced by factors such as technology, social media, and smart city development, and how these factors may influ-

ence travel decisions. In this regard, the theory is limited in explaining the economic transformation countries experience from religious transformation in terms of job creation, increased investment inflows, and local business growth, which are, in reality, prevalent in such places, including Namugongo, the case being studied in this paper.

Several challenges have been highlighted in the literature on religious tourism destinations, including overcrowding, congestion, vandalism, noise pollution, microclimatic changes, damage to fauna, air and water pollution, deforestation, and inadequate waste management^[10]. Nonetheless, the religious tourism theories are not cognizant of the issue of sustainability, to which most of these challenges pertain. All these factors, in one way or another, affect environmental sustainability, which, if not addressed, may lead to drastic climatic and environmental changes that may affect not only the religious destinations but also the people around them, the countries in which they are located, and the entire globe. Other challenges identified include damage to cultural heritage, increased disasters and accidents, safety pressures, insecurity, terrorism, and crime, among others^[11]. These challenges are similar to those being experienced at Namugongo. Such challenges affect the social sustainability of both visitors to religious destinations and residents near them. They may eventually reduce the number of pilgrimages to these destinations if they are not properly addressed. There is also the issue of funding for these destinations if the activities and the annual travels are to be sustainable. This, therefore, requires addressing the issue of economic sustainability as well if the benefits are to be enjoyed on a long-term basis.

It is argued that such challenges must be addressed to realize the benefits of religious tourism sustainably^[1]. This paper therefore extends the theory of religious tourism by integrating it with the theory of smart cities. This paper combines theoretical arguments from religious tourism and smart city theory to address the challenges of promoting and expanding religious destinations to make them more economically viable and sustainable. It is argued that turning Namugongo into a smart city would reduce the aforementioned challenges, improve pilgrims' well-being, and promote sustainable religious tourism in Uganda.

The Smart City Theory is a multidisciplinary theory that explains how cities use information and communication

technologies (ICT) to integrate digital technologies, data, and human capital into urban systems of transport, energy, housing, governance, and services to improve efficiency, sustainability, governance, as well as the quality of life of their inhabitants^[12–14]. Smart cities are an international development that applies digital solutions to address emerging urbanization challenges^[12,15]. Such challenges include traffic jams, water and energy consumption, and crime, among others^[15,16]. The theory argues that a smart city should not just focus on becoming digital but use technology, artificial intelligence and innovation to boost sustainable growth and development. Singapore, Barcelona, Oslo, and New York have been cited as the most developed smart cities in the world. In Africa, the most cited smart cities include Kigali, Rwanda; Cape Town and Johannesburg, South Africa; Konza and Nairobi, Kenya, and Cairo, Egypt^[17,18].

Smartness in smart cities has been examined in terms of smart mobility, smart governance, smart environment, smart people, and smart living^[12,13,18]. Firstly, smart mobility is the use of technology to plan and manage the movement of people and goods more safely, quickly, and cheaply. It involves automated public transportation systems, traffic management systems, and systems that promote safe walking and cycling within the city^[19]. Secondly, smart governance refers to the use of digital tools, data, and transparency by governments and administrative units to improve decision-making and service delivery in cities^[20]. Smart governance may include the use of e-government for public services, the creation of online platforms for citizen participation, and the offering of open-access data to citizens, all for efficient public administration^[21], as well as the creation of online platforms to promote collaborative citizen participation in political processes^[22]. Thirdly, a smart environment focuses on protecting natural resources, reducing pollution, ensuring proper waste management, and promoting efficient energy use through technology. It may involve the use of sensor-based waste management, environmental monitoring systems, smart energy sources, and building climate resilience. Fourthly, Smart people refer to a population that is digitally literate, skilled, and educated, and that engages in internet-based innovation and city life. Therefore, the pillar of smart people focuses on digital literacy, innovation and creativity, community participation, and lifelong learning. Lastly, smart living focuses on building quality of life

through health, safety, housing, culture, and social engagement. Thus, smart living involves establishing smart health care and public safety systems, affordable smart housing, and recreational and cultural services.

From the perspective of smart city theory, it can be appreciated that turning Namugongo into a smart religious city would lead to improved pilgrims' experiences, increased tourism flows, and, in turn, increased tourism revenue for the country and sustainable growth in religious tourism. It has been argued that to be effective, smart cities must be people-centric, sustainable, and optimized, and provide digital solutions to urbanization challenges^[15]. This paper extends the Smart City theory to faith-based cities in a developing country to boost religious tourism. The religious theory strand helps explain how to increase the number of religious tourists at their destinations. In contrast, the smart city theory helps explain how to support tourists and other key stakeholders, such as local communities, more efficiently and sustainably. The integration of the two theories, therefore, provides a deeper understanding of the role of religious tourist destinations in sustainably enhancing the economic growth of their mother countries. The theory of religious tourism helps us understand the potential of religious tourism destinations by articulating travelers' motivations. In contrast, the smart city theory helps us understand how such destinations can be better developed and nurtured to deliver better pilgrim experiences and the overall economic growth they can generate. In this regard, the central question of this paper is "How can turning Namugongo into a smart city boost Uganda's economic opportunity from religious tourism sustainably?" Therefore, this paper aims at the following objectives:

1. Explore the untapped potential of Namugongo as a religious tourist city.
2. Examine how Namugongo can be turned into a smart religious tourist destination as a tool to increase its economic potential sustainably.
3. Assess the challenges of turning Namugongo into a smart city and how they can be minimized.

The paper starts with a brief Section 1 on the introduction; Section 2 lays out the methodology; Sections 3–4 present results and a discussion, respectively; and Section 5 provides the conclusions.

2. Materials and Methods

A qualitative approach was used to gain deeper insight into how Namugongo's full potential as a religious destination can be realized through its transformation into a smart city. A case study design^[23] was employed to build cases for different cities through document review, from which lessons for improving Namugongo could be drawn. The main case in this paper is Namugongo, which helps clarify the economic potential of religious tourism. Selected smart cities cases, including Singapore City, New York City, Kigali City, and Cape Town City, supplement this case. Singapore was selected because it is considered one of the smartest cities and smart nations in Asia according to the Smart City Index^[24], while New York is one of the smartest cities in America^[25]. On the other hand, Kigali and Cape Town are considered some of the smartest cities in Africa^[26]. The purpose of these cases was to show how a city's smartness can be leveraged to increase the economic potential of a religious destination like Namugongo.

To build the cases, the authors conducted a document review. Document review involves examining written, visual, or physical materials on a given subject to interpret and derive meaning from them, and it has been advocated as a strong qualitative method^[27]. This method was selected because extensive data on the subject of study were available, whereas collecting the necessary primary data would be costly and time-consuming. Regarding the inclusion and exclusion criteria for the document review methods, all documents were collected via Google and Google Scholar. The selected documents were aligned with the paper's key themes: religious tourism, smart cities, Namugongo, and the selected smart cities. Mainly, documents/articles from 2019 to 2025 were selected to capture more recent information on the phenomenon under study. Nonetheless, a few key pivotal papers on the subjects from earlier years were included. The documents considered were those containing information reported in published articles; in cases of unavailability or scant articles, for example, on Namugongo, general reports were used. Due to the scarcity of academic journal articles on Namugongo and the selected smart cities, a total of 30 articles were reviewed: 11 focused on religious tourism, of which only 4 were specifically about Namugongo; 14 focused on smart cities; and 3 focused on methodology.

Using an integrated analytical framework from the two theories applied in this paper, the religious tourism theory was employed to examine the Namugongo case as a religious tourist destination, based on six key pillars identified in the literature^[5,6]. These pillars include the presence of a sacred site, pilgrim activity, historical and spiritual significance, religious festivals and events, global and cultural recognition, and key infrastructural development for pilgrims and festivals, such as accommodation, schools, travel, and road networks. These themes served as the analytical framework for evaluating Namugongo's untapped potential as a religious destination, the first objective of the paper.

To achieve objectives two and three, which focus on how Namugongo can be turned into a smart city to increase its economic potential while overcoming any challenges that may arise, the Smart City Theory was applied. In this regard, cases were built from documents on the selected smart cities to deepen understanding of the theory's constructs. The cases begin with a general background and the reasons for their transformation into smart cities and end with a brief overview of smartness indicators. A visual presentation of the cities was also added to enhance the interpretation of the data. Matrix analysis was applied to examine the data within and across cases. Matrix analysis involves organizing, summarizing, and synthesizing data in a table format to facilitate comparison of themes, identify key patterns, and interpret the data within and across cases. In this regard, a matrix was prepared based on the key pillars of a smart city, which acted as the major themes for analyzing the selected cases. The themes, therefore, included smart mobility, smart governance, smart environment, smart people, and smart living, as guided by key literature^[12–14].

Within-case analysis enabled the understanding of each case and its uniqueness^[28]. On the other hand, an across-case analysis enabled the identification of commonalities and differences among the selected smart cities. Matrix analysis involves organizing, summarizing, and synthesizing data in a table format to enhance comparison of themes, identify key patterns, and interpret the data across different cases. This approach supported the within-case and across-case analyses. The resulting framework matrix is presented in the results section. The themes from the matrix helped to note key lessons from the selected cases that can be applied to Namugongo.

3. Results

Following the above methodology, the findings below were extracted in line with the paper's objectives from the documents reviewed, as presented in the sub-sections below.

3.1. The Tourist Potential of Namugongo

Below is a brief yet in-depth case description of the Namugongo Martyrs' Center as a religious tourism destination that helps clarify its tourist potential.

3.1.1. Namugongo as a Religious Tourism Destination

Namugongo is a town in Kyaliwajjala sub-county, Kira Town Council, Wakiso District, Uganda. Historically and spiritually, Namugongo is pivotal for the remembrance of the Uganda Martyrs. The Uganda Martyrs were a group of young Christians—22 Catholics and 23 Protestant converts—who were killed between 1885 and 1887 by Kabaka Mwanga of the historical Buganda Kingdom. Originally, the place was used to execute wrongdoers in the kingdom, and many were burnt alive there. The Uganda Martyrs, who were also considered rebels against the traditions of the kingdom, were also burnt alive at Namugongo. Spiritually, the Uganda Martyrs were seen as people who stood for their faith with resilience up to the point of death and are celebrated every 3rd of June. In the Catholic Church, the Uganda Martyrs were declared saints in 1964 by Pope Paul VI, granting them universal recognition.

Among spiritual sites, Namugongo is home to the Catholic Basilica of the Uganda Martyrs. Its architectural design evokes the traditional African hut, with 22 pillars corresponding to the number of Catholic martyrs. It is built at the exact spot where the martyrs were executed. Near the church is also a man-made lake in memory of the Uganda Martyrs. The place also hosts the Anglican Shrine, in remembrance of the Protestant Uganda Martyrs, located within walking distance of the Catholic Basilica. This shrine also has a Martyrs Museum, established to preserve the history of the Uganda Martyrs, which was opened in 2015 by Pope Francis. There is also a mosque, Masjid Noor Shahada, in remembrance of those who converted to Islam.

Celebrations are held every year at Namugongo, especially on June 3rd, in remembrance of these Martyrs and their

faith and resilience. These are organized by the key religious denominations in Uganda, including Catholics, Protestants, and, more recently, Muslims. It attracts both national and international pilgrims from within East Africa and beyond. In 2025, the pilgrims were over, according to the Monitor Newspaper. There are also other celebrations, including masses and prayers, before June 3rd, which is a recognized public holiday in Uganda. Schools and other diocesan parishes also organize some celebrations at Namugongo.

Regarding infrastructure development in and around Namugongo, the government of Uganda, working with various religious groups, has improved it. Over the years, the road network leading to both the Anglican and Catholic religious centers has been enhanced through widening the roads and installing pavements. Street lighting has also been improved, along with the drainage systems. Money has also been injected to improve the places of worship, enabling them to accommodate the growing number of pilgrims. During the celebrations, security is also tightened, and police posts have been set up in the area for the safety of the pilgrims and the town at large. There is also growth in hospitality services, including hotels and restaurants, in the area.

3.1.2. Analysis of the Namugongo Case as a Religious Destination with High Economic Potential

From the above case, it is noted that Namugongo provides several socio-economic opportunities for Uganda, East Africa, and the world at large, as summarized below:

Namugongo could offer tourists opportunities to visit Uganda year-round for religious and recreational purposes, in addition to the main celebrations held on 3rd June. This is in line with what happens in other key cities that offer religious tourism, like Jerusalem in Israel and Mecca in Saudi Arabia. In Jerusalem, people visit regularly because of its diverse attractions. This is also true for Mecca. Therefore, it is possible for Namugongo, especially the Martyrs' area, to have pilgrims throughout the year, both from within and outside the country. This could be changed, especially with the partnership between the church, the kingdom, and the government of Uganda. Other celebrations could include celebrating the trail of faith walked by the Martyrs before they were executed. The tourists and pilgrims could also follow this trail not only for their spiritual nourishment but also for their health benefits.

Another opportunity is the purification of the water drawn from the Martyrs' Lake, which many pilgrims yearn for. Purifying it would not only provide safe water but also a source of income for the entrepreneurs who would take on the project, creating economic value for them. The churches can also benefit by partnering with such entrepreneurs. Currently, people draw water directly from the lake, but it may not be safe. It needs to be purified and made more health-friendly. This presents a business opportunity to bottle this water and sell it as Namugongo water, not only on the day of celebrations but throughout the year, and not only in Uganda but around the world.

There is also a great opportunity for increased entrepreneurial activities following the large number of pilgrims flocking to Namugongo on the 3rd of June. Many people come from near and far to sell food, spiritual items, water, and related goods. This creates a need for modern restaurants, hotels, and hubs that sell healthy food. Thus, meeting the needs of both the pilgrims and the entrepreneurs creates a win-win situation.

Additionally, the Uganda Martyrs celebrations face challenges such as traffic jams and a lack of accommodation for people arriving some days before the celebrations. This creates various opportunities, for example, the development and construction of proper accommodation facilities; the provision of modern, smart transport systems from key areas where pilgrims/tourists come from, directly to Namugongo; and the creation of apps to update and notify pilgrims of the various programs and opportunities available.

The large number of people flocking to Namugongo brings another challenge: a huge amount of waste. Seen from another perspective, this presents a key opportunity for waste management initiatives that the municipality can pursue in partnership with private companies that can profit from them.

The need for proper food provides another opportunity for economic growth: Namugongo-smart restaurants and eateries could be provided, where bookings are made before the day. This could be branded as the Martyrs' food, which they ate themselves, lending it historical context and making it more adventurous. This would not only generate revenue but also provide food security to those attending the Martyrs' events from all over the world.

There is also complexity in Namugongo that needs to

be emphasized, such as the place's traditional role as a key site for the Buganda Kingdom to punish rebels, and the kingdom's role in the Martyrs' deaths. This would attract more tourists to the place. Additionally, more features could be added, such as a man-made forest and additional architectural work across all places of worship.

Figures 1 and 2 show the current status of Namugongo town and the Namugongo Martyrs' shrine.



Figure 1. Namugongo Town.



Figure 2. Namugongo Martyrs Shrine on June 3rd.

3.2. How Namugongo Can Be Turned into a Smart City

Having appreciated the various opportunities from Namugongo, the paper also examines how it can be turned into a smart city. A synthesis of the two global cities and two African cities was done to achieve this objective. Below are

summarized cases of these cities and lessons drawn from them in relation to the key tenets of smart cities.

3.2.1. Singapore

Singapore City has been reported as the smartest city in the world. This has been attributed to the use of technology to enhance governance, connectivity, sustainability, and the quality of life for its citizens, which are embedded in its strategic vision. It has a virtual platform that uses real-time data to drive its infrastructure, city planning, and traffic control, and it also uses simulations. Singapore's efforts to turn its city into a smart one began in early 2003, and a formal Smart Nation initiative was launched in 2014. By that time, it was facing several challenges, including limited space with high population density, traffic congestion, complex urban services, limited capacity, and inefficiency in the provision of public services, among others. Singapore, with the help of artificial intelligence, has been reported to have the most technology-controlled traffic, with reduced congestion, planned infrastructure, and reduced crime. It has implemented a smart transport system that not only improves mobility but also reduces vehicle emissions to keep the city green. Below is a caption of Singapore City (**Figure 3**).



Figure 3. Singapore City.

3.2.2. New York City

New York City is located in the northeastern part of the USA. Apart from being the largest city in the USA by population, it has also been reported as the smartest city in the USA.

New York City's efforts to become a smart city were gradual, implemented continuously over decades. Before becoming a smart city, New York faced several challenges, including heavy traffic, pollution, transport inefficiencies, complex service coordination, digital inequality among its residents, and environmental and sustainability pressures. New York's smartness has been attributed to its integration of technology and innovation across connectivity, governance, traffic management, infrastructure development, and economic power. New York offers open data access that enables start-ups and other businesses to operate more smoothly and adopt technology-based solutions at a lower cost to their customers. The city has sensor-enabled waste bins that report when they are full, enabling real-time waste management, reducing collection costs, and protecting the environment. Additionally, New York uses real-time data to manage traffic and optimize transit in and out of the city, making transportation within the city easier. Such approaches have encouraged innovation, improved efficiency in managing traffic and waste, and enhanced governance through greater transparency and the development of data-driven policies. Below is a caption of New York City (**Figure 4**).



Figure 4. New York City.

3.2.3. Kigali

Kigali is the capital of Rwanda in East Africa. It has been branded one of Africa's key smart cities for its smartness. Rwanda began developing smart cities in the mid-2010s. It intensified in 2017 when it officially launched the smart cities blueprint. The key cities targeted included Kigali. Before such efforts, Kigali faced several challenges, including infrastructure strain, rapid urbanization, population growth, waste management challenges, limited connectivity for its citizens and businesses, and service delivery inefficiencies. The key factors driving its smartness include smart waste management, digitized governance services, several innovations

that facilitate the use of technology by start-ups, universities, and innovation hubs, and the integration of technology into the transport system, energy, sanitation, and health care^[29]. Additionally, a Kigali smart city master plan 2040 has been developed to sustain its smart-city status and link it with other African smart cities^[30]. Below is a pictorial presentation of Kigali City (**Figure 5**).



Figure 5. Kigali City.

3.2.4. Cape Town

Cape Town is another emerging smart city found in South Africa along the Atlantic Ocean. It is an important coastal city and a major tourism center for the country. Cape Town's efforts to create a smart city evolved in response to emerging challenges. Such challenges included limited infrastructure, unequal access to basic services, a digital divide among its citizens, water scarcity pressures, and traffic jams, creating a need for planned public transportation, among others. It has been branded as smart due to the urbanization of its infrastructure, including smart traffic monitoring and public internet access; it also relies on smart energy and digital water systems. It has also adopted sensor networks to monitor traffic and environmental conditions. This has led to more efficient public services, improved security, and better traffic management. Below is a caption of Cape Town (**Figure 6**).



Figure 6. Cape Town City.

3.3. Lessons for Namugongo

From **Table 1**, it can be noted that Namugongo is more comparable to Kigali and Cape Town because both are in Africa. Thus, short-term and mid-term lessons can be learned from them. There is also a lot to learn from Singapore and New York as Uganda continues to grow. Therefore, efforts to improve Namugongo can be pursued through the five pillars of smart cities, including, but not limited to, smart mobility and access, smart governance and strategy, smart environment and integration, and smart living and well-being.

Namugongo's smartness should be leveraged to promote it as an international religious tourism center. The first step would be to introduce smart mobility to Namugongo. This can be done by improving the transport system to reduce traffic congestion and by providing automated traffic alerts. Therefore, direct transport routes should be built from Entebbe to Namugongo (for the international pilgrims) and also from the far ends of the country, from all directions, northern Uganda, western Uganda, and eastern Uganda, directly reaching Namugongo.

Table 1. A summary of key features of each city and the lessons for Namugongo.

Smart City Pillars	Singapore	New York	Cape Town	Kigali
Smart mobility	It has real-time traffic management and an integrated public transportation system, with traffic lights that adjust according to traffic congestion.	Uses real-time transit data, for example, the use of Next Bus data feeds	Has smart traffic monitoring. The infrastructure for mobility is interconnected to handle heavy traffic	Has installed smart traffic lights at major junctions across the city, introduced digital transport permits, and implemented GPS and mobile apps for taxi and bus services.
Smart governance	Offers digital national identity cards and digitalized services for taxes, health, and housing	NY has open data portals for public access and online city services. It has installed systems that report faults as they occur. It also has participatory digital platforms to engage its citizens.	It has e-billing and online service requests for citizens. It has data initiatives that facilitate innovation. Some apps allow citizens to report faults and submit quick service requests.	Digitalized services related to tax payment, licensing, and car permits. It also has digital citizen feedback systems. There is strong coordination between national and city government systems.
Smart environment	Uses smart water management and recycling. There are green buildings and energy-efficient infrastructure. It also has sensors that monitor air and water quality.	Installed sensor-enabled waste bins that give signals before they are full. Smart energy grids are also in place and have adopted climate adaptation technologies.	Smart water meters are especially useful after droughts. It also has systems that monitor energy. They also collect environmental data for planning purposes.	Installed sensor-enabled solar bins that enabled optimized waste collection using digital information. There is environmental monitoring and enforcement of smart land-use planning.
Smart people	Provides continuous education and digital skills training to its citizens. They also have government-supported innovation programs with open internet access. The majority of its citizens are thus knowledgeable and can participate in digital services.	Several universities are digitally empowered with innovation hubs. There is deliberate support for startups and creative industries right from the home level, connected by digital tools. There are also technology programs for special communities.	Introduced university-city innovation partnerships. There is also an emphasis on ICT skilling combined with entrepreneurship. There are also community engagement initiatives on the available smart services.	Provides national digital literacy programs for its citizens. It also has youth innovation hubs across the city. Training is also provided to its citizens on using digital government services.
Smart living	There is smart public housing, digital healthcare records, and extensive public safety systems.	Offers smart healthcare services that are easily accessible. It also has emergency response technologies plus digital access to social services.	Offers smart policing and emergency services, digital health initiatives, and technology-supported social services.	There are smart mobile healthcare delivery systems. It also offers improved urban safety and online access to public services.

3.4. Challenges and Solutions to Turning Namugongo into a Smart City

The review of various documents and articles revealed several challenges, notably the high cost of infrastructure setup, the need for coordination among key stakeholders,

and the need to achieve congruence of goals among them. The key stakeholders include religious institutions, municipal governance and management, the central government, pilgrims, both local and international, and the residents of the area. All these have different objectives that need to

be reconciled and considered when turning the town into a smart city.

Additionally, other challenges were identified, such as the threat of turning a holy place into a secular commercial centre by commercializing the events of the Martyrs, the resistance of some stakeholders who may fear change, the issue of land ownership, with some private owners who need to be paid or partnered with, and the current poor infrastructure, including unstable internet, unstable electricity, narrow road networks and handling the peak flow of high numbers of pilgrims on special days like the third of June, when the Martyrs' day is celebrated. It is critical to consider all these challenges when pursuing the goal of making Namugongo a smart city.

Some of the suggested key solutions include bringing all stakeholders together to work together, partnering with financial institutions to grow the area and install the necessary technology while closely working with the central government, introducing several celebration days to decongest the third of June, which could be celebrated by both local and international pilgrims, putting up a Namugongo city authority to address the above challenges, among others.

4. Discussion

The first objective explored the untapped potential of Namugongo as a religious tourism destination. This was evaluated along the pillars of religious tourism, namely: presence of a sacred site, pilgrim activity, historical and spiritual significance, religious festivals and events, global and cultural recognition, and key infrastructural development for pilgrims and festivals, such as accommodation, schools, in-travels, and road networks^[5,6]. In this regard, the results revealed that Namugongo is a center of sacred sites for the three major religions in Uganda, namely Catholics, Protestants, and Muslims. It should be noted that, for a long time, only Catholics celebrated the Day of the Martyrs. Eventually, the Protestants also started picking up, and now there are over 10,000 who visit the Protestant shrine, and the Muslims are also renovating and reconstructing their mosque.

In essence, we note the increasing number of religious tourists in the area, which has high potential to generate economic opportunities, including job creation, business start-ups and growth, infrastructure improvements, and more.

Therefore, religious tourism increases economic activities. In practice, it has been observed that as tourist numbers increase on Martyrs' Day, opportunities for entrepreneurial growth in accommodation, food hubs, and entertainment also increase. Therefore, if pilgrimage activities are expanded beyond the Martyrs' Day celebrations to include other year-round celebrations, such as retreats, conventions and conferences, religious camps, and festivals, economic opportunities would increase further. Empirically, the results support the arguments in the literature^[4] that religious tourism boosts a country's economic development. This is further supported by the literature^[5], which describes numerous forms of religious tourism beyond pilgrimage. The results also support the religious tourism theory by highlighting how religious tourism increases the number of tourists in the area who come not only for religious or spiritual reasons but also for secular ones.

In line with the second objective, which examined how Namugongo can be turned into a smart city, it is argued that turning religious destinations into smart cities would increase their relevance and importance. It was suggested that this can be done by using technology to improve the quality of the pilgrim experience, traffic management, accommodation facilities, and information flow. Therefore, this work argues that combining religious tourism with the pillars of smart city theory leads to greater economic development by increasing economic activity and sustainability by enhancing the pillars of the smart city theoretical anchor, which targets the environment, the people and the economic aspects. It was established that it does not need to be highly complex technology initially. Technology adoption can be done progressively, as explained by various scholars^[3,4]. Therefore, in the case of Namugongo, it could begin with offering free internet access in the area to improve communication and provide real-time information on tourist sites and traffic management. This could be done through collaboration with telecom companies such as MTN Uganda and Airtel, which currently operate in the country, as well as religious leaders and government authorities. As scholars have urged^[4], collaboration is critical for developing human-centric smart cities. It is further explained that smart cities enable smart mobility, in which technology is used to monitor and control traffic by providing real-time information on alternative routes. All these transform society and improve the quality

of life.

Smart cities theory contends that digital solutions can reduce traffic jams in major cities, a problem that also worsens in places where religious tourism is boosted. Therefore, it can be argued that smart cities help address the challenges of religious tourism. This supports findings from the existing literature, which posit smart cities as a tool for traffic management^[1,2]. Practically, this paper suggests that smart roads connecting rural areas to the airport could be implemented, and pilgrim paths demarcated. This would reduce the time to reach Namugongo and the number of accidents along the way, especially for those who walk long distances. Therefore, collaboration should also be strengthened with other countries from which pilgrims originate, such as Kenya, Tanzania, the Republic of Congo, and Rwanda, to improve transport systems, communication channels, and accommodation, among others. Turning Namugongo into a smart city would thus yield additional advantages beyond traffic management, as observed in the literature^[2]. These would include improved quality of life, business activity, job creation, public safety, innovation, efficiency, and sustainability. Tapping into these advantages would enhance the pilgrim experience at Namugongo and boost economic activity in the area.

In line with the third objective, which assessed the challenges of turning Namugongo into a smart city, it can be contended that smart city growth faces various hurdles that must be overcome to realize its benefits. Existing literature^[1] indicates that smart city challenges include increased costs, threats to privacy and data security, rapidly changing technology, and interoperability difficulties. In the case of religious cities like Namugongo, such challenges need to be anticipated, analyzed, and managed effectively if the growing economic potential is to be tapped. Therefore, the solutions pursued need to emphasize collaboration, stakeholder engagement, proper planning, and the step-by-step implementation of a smart city. There is also a need to maintain its spirituality and faith-based nature. This would be to guard against the threat of commercialization cited in the literature^[1]. This could be done by maintaining Namugongo's religious aspect as the main attraction for tourists. This could be done through intentional advertising of Namugongo, using technology to inform pilgrims about the place's cultural richness and history, its unique food, the Martyrs Museum, etc.

5. Conclusions

This study draws various conclusions from its findings. On the theoretical front, it has been observed that arguments in religious theory can be made more applicable and relevant by combining them with the pillars of smart city theory, which are key for developing economies. Such a combined theoretical anchor would enable the transformation of religious destinations into sources of economic growth and development. It can therefore be concluded that religious sites in developing economies have the potential to transform communities economically and socially by adopting the pillars of smart cities. In the case of Namugongo, adopting smart city strategies will help shift it from a seasonal to a permanent social and economic engine in Uganda.

Empirically, this paper contributes to the existing literature by combining religious tourism arguments with smart city theory. There are few papers on this topic, as most authors have studied the two theories and concepts separately. Therefore, combining them increases the value of religious destinations like Namugongo. At the managerial and policy levels, it is concluded that smart-city pillars such as smart mobility and digital governance are essential infrastructure requirements for modernizing religious cities, as evidenced by successful models in Kigali and Singapore. In the context of Namugongo, smart mobility is a decisive factor in improving the pilgrims' experience. This can be done by using technology to manage traffic flow and share real-time travel alerts. This can help to eliminate physical friction and logistical stress that typically characterize mass pilgrimages.

Finally, the success of a smart religious city depends on a collaborative governance model that balances modern technology with spiritual tradition. To manage high costs and diverse stakeholder interests, a unified plan involving religious leaders, the government, and private investors is needed. To prevent the site from feeling too commercialized, technology could remain invisible, working behind the scenes to improve safety, cleanliness, and efficiency. This approach will leverage digital tools to protect the site's heritage and create a space where modern urban systems and religious faith coexist harmoniously. The Ministry of Tourism, Wildlife, and Antiquities of Uganda should formally integrate Namugongo into the National Tourism Policy 2025 as a specialized smart heritage space. This policy shift necessitates that the country transition from viewing the site as a seasonal

event space to a permanent, year-round economic hub. There is a need for a regulatory framework that incentivizes private investment in ICT within religious hubs. Government can also facilitate the deployment of public Wi-Fi, digital traffic management, and sensor-based sanitation systems that align with the Greater Kampala Metropolitan Area Development Strategy.

In conclusion, to address the challenges that emerge with using city tools, such as the high costs of smart infrastructure, authorities should move beyond traditional financing and adopt a public-private partnership model as part of the policy framework. This approach will help ensure that residents and small businesses are co-owners of social innovations such as smart water purification plants. Once the community is involved, the benefits of modernization will be inclusive and sustainable, thus reducing friction among stakeholders. Site managers who are religious administrators should prioritize implementing technological solutions that enhance urban efficiency without compromising spiritual purity. This could include automated logistical systems, such as crowd-monitoring sensors, and digital health-tracking tools that operate behind the scenes to promote pilgrim safety, as well as environmental health measures.

While the paper contributes theoretically, empirically, and practically to smart religious tourism using Namugongo as a case, it has some limitations that necessitate further research in the area. It is based on secondary data. There is therefore a need to survey Namugongo to ascertain the benefits and carry out further statistical analysis applying both quantitative and qualitative research approaches.

Author Contributions

Conceptualization, A.N.N., D.N.N. and L.S.; methodology, A.N.N., D.N.N. and L.S.; validation, A.N.N., D.N.N. and L.S.; formal analysis, A.N.N., D.N.N. and L.S.; writing—original draft preparation, A.N.N., D.N.N. and L.S.; writing—review and editing, A.N.N., D.N.N. and L.S.; project administration, A.N.N.; All authors have read and agreed to the published version of the manuscript.

Funding

This work has no external funding.

Institutional Review Board Statement

Not applicable.

Informed Consent Statement

Not applicable.

Data Availability Statement

Data can be accessed via Google Scholar and the general Google websites.

Conflicts of Interest

The authors declare no conflict of interest

AI Use Statement

Artificial intelligence (AI) was only used to improve language and grammar with the assistance of Grammarly. The authors subsequently reviewed and edited the content as necessary and take full responsibility for the final content of the published article.

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