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Interconnections of Vulnerability, Everyday Hazards, and Sustainable Urban Development: A Case Study of Ilorin, Nigeria

Oladotun E. Morakinyo[1*], Khadijat Abdulquadri[2], Adewale A. Ajibade[3], Richard O. Taiwo[1], Samuel A. Oyeniyi[1], Demilade O. Oyeniran [1]

[1] Department of Urban and Regional Planning, Federal Polytechnic, 210271 Ayede, Nigeria
[2] Department of Urban and Regional Planning, Aliko Dangote University of Science and Technology, 713101 Wudil, Nigeria
[3] Department of Urban and Regional Planning, PAN African College of Education, 250101 Offa, Nigeria

[*] Correspondence: Oladotun Morakinyo (morakinyooe@federalpolyayede.edu.ng)

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Abstract: Ilorin, a rapidly urbanising city in Nigeria, faces multifaceted socio-economic and environmental challenges that exacerbate residents' vulnerability to both natural and anthropogenic hazards. These hazards, including heatwaves, droughts, flooding, poverty, and housing insecurity, significantly impact the city's sustainable development trajectory. This study examines the intricate interplay between vulnerability and everyday hazards, as well as the underlying socio-economic factors that exacerbate these challenges. A deductive research approach was adopted to assess the prevalence and drivers of vulnerability in Ilorin. Data were collected through a structured questionnaire administered to a random sample of 273 residents across 20 wards. Findings reveal that economic vulnerability is particularly pronounced, with lack of access to stable income exhibiting the highest mean index (4.42), while inadequate access to safe, convenient, and affordable transportation represents the lowest vulnerability index (3.93). Social and environmental vulnerabilities were also prevalent, with mean values of 4.23 and 4.16, respectively. Among everyday hazards, food insecurity, hunger, and malnutrition were identified as the most critical issues (mean value: 4.32), followed by income and financial disparities (4.25) and crime and violence (4.18). Housing-related hazards were found to be comparatively less significant. The primary drivers of these hazards include poverty (4.40), unemployment and underemployment (4.30), income inequality (4.21), lack of awareness (4.17), and weak institutional governance (4.16). The study underscores the interdependence between vulnerability, everyday hazards, and sustainable urban development in Ilorin. Addressing these challenges requires the institutionalisation of comprehensive sustainable development policies at the state level. The establishment of an Ilorin Sustainable Development Strategy (ISDS) is recommended to mitigate urban disparities and enhance resilience.

Keywords: Everyday hazards; Risks; Sustainable development; Urbanisation; Vulnerability; Governance; Resilience

1 Introduction

Numerous African cities are rapidly urbanising and experiencing major changes [1]. Particularly, Sub-Saharan Africa is among the world's leading urbanising regions. Between 2015 and 2050, the population residing in urban areas of Sub-Saharan Africa is predicted to multiply three times [2]. This rapid population increase and current urbanisation processes are making urban residents in Sub-Sahara Africa more vulnerable to everyday hazards and catastrophe threats due to the fact that African cities are typically unprepared to handle such rapid population growth [2]. Also, a significant portion of the urban population dwells in informal communities, which are frequently exposed to both natural and anthropogenic hazards. Simultaneously, both the severity and frequency of natural disasters have grown due to climate change, resulting in new vulnerabilities and urban risks that impact millions of people who live in cities [2, 3]. Owing to these, the pressing issues of poverty, marginalisation, insecurity, and deterioration of the environment are seen in cities of developing nations [4]; hence, the need for coordinated global actions through sustainable development goals (SDGs) to correct these anomalies.

In the literature, sustainable development is defined in a variety of ways. However, the Brundtland Commission Report is the one that is most frequently referenced. According to the Report, sustainable development is development that satisfies present demands without jeopardising the capacity of subsequent generations to satisfy theirs [5]. The SDGs were set up by the UN in 2015 to encourage concentrated efforts on sustainable development in all areas of the global development agenda [6]. Generally, the 2030 Agenda (SDGs), which has 17 goals and 169 targets, is an appeal to action to safeguard human welfare, reduce poverty, and save the environment [7]. With the aim of achieving inclusive, safe, resilient, and sustainable societies, there is a specific Goal 11- Sustainable Cities and Communities. It should be noted that there is a fundamental interdependence and interconnection of the SDGs' development objectives and targets [8]. This implies that the SDGs are not mutually exclusive goals, rather, they are intricately connected to one another.

Galderisi [9] observed that complex occurrences are replacing isolated phenomena caused by a single risk impacting a specific region in urban disasters. The majority of the disasters that have struck in recent years have had significant economic effects, although the number of casualties is declining as a result of several nations' increased ability to lower risk-related mortality [10]. In Ilorin, Adebimpe [11] claimed that many natural disasters, including storms, floods, droughts, desertification, and diseases, are all part of the overall threat faced by the city. Similarly, Bako et al. [12] discovered that in the Ilorin central area, heat waves and flooding are the most common sources of hazards. Annually, flooding issues have continued in the city during the rainy season, when heightened rainfall causes overflow from the Asa River and its tributaries [13–15]. For instance, on September 30, 2022, in Irepodun Community, Idi Igba Were Area of Ilorin, goods and properties worth millions of naira were allegedly swept away by flood as a result of a heavy downpour experienced [16]. These studies focused mostly on nature-induced hazards in Ilorin, neglecting the social- and economic-induced hazards and vulnerabilities as well as factors contributing to their everyday occurrence in the study area.

UN-Habitat [2] asserted that disasters, whether caused by humans or nature, can have far-reaching effects on a variety of domains, including infrastructure, society, the economy, health, and the environment. Therefore, in many extremely vulnerable urban environments, people's ongoing daily functioning as members of their homes, communities, and neighbourhoods demonstrates and highlights the simultaneous and interwoven nature of both vulnerability and resilience in cities [17]. Specifically, the city of Ilorin is known for its constantly growing population, the majority of which are underprivileged, and are constantly vulnerable to natural disasters such as heat waves, droughts, flooding, and desertification [11, 12, 18]. Friend et al. [19] also linked urbanisation to poverty, vulnerability, and climate change.

The need for this study is borne out of the understanding that multiple risks might arise from an interplay of vulnerability and everyday hazards. Therefore, it is crucial to describe the extent to which the urban system creates risky situations as well as how hazards affect the particular urban setting [20]. According to the World Cities Report [21], most people living in developing nations are already caught in a never-ending cycle of poverty. This means that reaching the SDG targets will prove highly challenging, if not impracticable, given the widespread material deprivation, fragile urban economies, high rates of youth unemployment, widening digital divide, increased susceptibility to public health emergencies, ongoing armed conflicts, and any other shocks or stresses experienced.

While many cities worldwide can successfully carry out their basic duties on a daily basis, most cities of developing countries have substantial challenges in doing so [22]. Therefore, as we approach the 2030 deadline for achieving the SDGs, the vulnerability and susceptibility of urban economies to unforeseen shocks and emergencies, which have the potential to undo development gains made over time, cannot be ignored by policymakers at any level [21]. Since the inability of planning to overcome modernist ideals and deal with informality and poverty is partially to blame for cities' inability to function as hubs of economic expansion and destinations for excess labour from rural regions, contemporary urban planning practices in the context of 21st-century urbanisation may convert the major difficulties encountered by cities into possibilities [4]. Therefore, this study explored the interplay between vulnerability, everyday hazards and sustainable development in Ilorin, Nigeria. The findings of this study have implications for policy makers and urban planners in particular and for the public in general to close the urban social, economic and environmental gap by transforming cities into safe, convenient, economically vibrant, socially inclusive and environmentally friendly communities for people to live, work and recreate.

2 Concepts Clarifications

2.1 Vulnerability

Krellenberg et al. [20] described urban vulnerability as the relationship between an urban area's spatial-structural (socioenvironmental) circumstances and its residents' latent sensitivity and reaction, after a defined and distinct natural or man-made occurrence. World Cities Report [21] defined vulnerability as the inability to adequately tolerate or resist any number of shocks and pressures due to one's health, a lack of resources, or certain traits of oneself, a community, an area, infrastructure, etc. This vulnerability is related to a wide range of hazards, risks, shocks, or threats, such as violence, COVID-19 and other transmissible diseases, deterioration of the environment,

economic upheaval, political unpredictability and instabilities, and climate change.

Rafael et al. [23] observed that vulnerability encompasses an ever-changing and multifaceted reality. In addition to implying that a system may be negatively affected by anything (a stressor), it also denotes an associated trait characterising the system's responsiveness and ability to handle that stress. Therefore, both the stressor and the inherent characteristics of the system under stress cannot fully characterise vulnerability. Rather, it has to be viewed as a combination of these elements, represented by the total of many parameters: exposure, sensitivity, and adaptability [24]. However, research on urban vulnerability typically describes it negatively, as the potential for damage; that is, the extent that a system, such as a city, population, infrastructure, or financial sector, is vulnerable to the negative impacts of one or more stressors and finds it difficult to handle them [25]. This study adopted this view as regard vulnerability.

2.2 Hazards

In broad terms, a hazard is any activity, phenomenon, or action by humans that may lead to death, severe injury, adverse health consequences, destruction of property, disruption of economic and social stability, or environmental degradation [26]. Examining the connections between the ideas of hazard, exposure, vulnerability, and capacity is necessary given the broader definition of the term hazard as a process, phenomena, or human action. "Hazard" is anything that could happen given a set amount of time and place; "exposure" refers to the assets that are both valuable and vulnerable, like the environment, the economy, structures, or humans; "vulnerability" refers to the assets' sensitivity to harm or the effects of a risk; and "capacity" refers to the entirety of an organization's, community's, or society's capabilities, qualities, and resources accessible to manage, lower the risk of calamity, and increase resilience [26]. A hazard, which can be either a severe natural or man-made occurrence, does not in and of itself cause a tragic event. However, when individuals and resources are subjected to vulnerable circumstances and are not equipped to handle them, disasters happen [2]. For this study, everyday hazards mean any natural or human process, phenomenon, or activity that people are exposed to daily and are unable to cope with, therefore, it has the possibility of causing them harm.

2.3 Sustainable Development

The majority of scholars, researchers, and practitioners who write on development do so with the understanding that it refers to enhancing and maintaining a sound social, ecological, and economic framework for human growth [27–29]. The Brundtland Commission Report defines sustainable development as development that satisfies present demands without jeopardising the capacity of subsequent generations for satisfying their own needs [5]. Social fairness, environmental preservation, and economic prosperity are sustainable development's three main issues. This indicates that three core concepts underpin the concept of sustainable development. These are "economic sustainability," "social sustainability," and "environmental sustainability" [7]. The transformational agenda of the sustainable city therefore holds that, everyone deserves a chance to live in a dignified manner and in a setting that fosters growth and development.

3 Literature Review

Okeke [30] asserts that Africa has little hope for sustainable urban development because of how vulnerable its cities are to systemic challenges. Past studies in Ilorin have attributed vulnerabilities to natural disasters [12–16]. However, it has become more widely acknowledged in recent years that many African cities and towns are becoming more vulnerable to disasters as a result of some common traits and underlying socio-economic, political, and cultural issues that have fueled risk accumulation [31–33]. Wisner et al. [34] cited political, economic, and demographic trends as the main underlying factors that contribute to vulnerability. They have an impact on vulnerability by dividing and allocating resources among various groups [35].

Bull-Kamanga et al. [36] stated that the majority of big cities face extremely significant issues with both the risk inherent in daily hazards and disasters. For example, over 100 children suffer illnesses that substantially impair their health and nutritional condition, or over ten children pass away from contracted illnesses or accidents. However, because smaller urban areas generally have less access to water, sanitation, drainage, and health care than bigger metropolitan areas, their residents are frequently more vulnerable to everyday risks [20, 37]. Salem [38] identified that the rise in metropolises has been correlated with a rise in the diversity of urban structures, leading to the emergence of problems like urban marginalisation and social exclusion. The formation and accumulation of hazards are tightly linked to the unique dynamics of evolving urban forms, city government, public funding, physical infrastructure, and social programmes. This is demonstrated by the rising demand for housing, the insufficient supply of and uneven access to essential public and welfare services, as well as to basic infrastructure, and the mediocre urban design and administration [39]. Satterthwaite [40] connected these to the shortcomings of local administrations, which frequently turn away residents of informal settlements, despite the fact that they comprise at least half of the inhabitants of many African cities.

Ghani [41] recognised that dynamic stresses on risk, such as rapid urbanisation, structural adjustment programmes, foreign debt, and violent conflicts, can direct the underlying reasons into specific types of unsafe environments, such as poor houses, workplaces, or livelihoods. Additional dynamic stresses originate from public actors and institutions, whose actions or inactions impact adaptive capability and the preparation and reaction to disasters [35]. Few of the main factors that increase a person's susceptibility and exposure to risks include poor municipal governance, a lack of public funding, insufficient infrastructure and services (such as power and water supplies, fire and medical attention), unemployment and poverty, and poor infrastructure and sanitation [35]. Bako et al. [12] identified that poverty represents a distinct contributing factor to vulnerabilities both in time and space. And most people living in developing countries are currently caught in a never-ending cycle of poverty [4, 21].

Daily hazards and hazards associated with disasters are exacerbated by poor or lack of access to infrastructure (such as roads, sewers, and water supplies) and essential services (such as emergency services, public transportation, and healthcare) [35]. Similarly, Bull-Kamanga et al. [36] noted that urban experts widely acknowledge the significant health burden that many low-income urban residents suffer due to insufficient water, sanitation, and drainage services, substandard and overcrowded housing, and inefficient control of pollution and traffic. This acknowledges the role of insufficient healthcare and emergency responses, such as services for combating fires and promptly treating acute illnesses or severe injuries.

The literature review highlighted systemic issues, including socio-economic, governance, and infrastructural challenges, that contribute to urban vulnerabilities. However, previous studies have not adequately explored how everyday risks—such as poverty, hunger, lack of education, and unemployment—exacerbate vulnerability over time, thereby hindering efforts toward sustainable development. Therefore, this study examines vulnerabilities and everyday hazards in relation to the SDGs and their impact on the sustainable development of the study area.

4 Methodology

4.1 The Study Area

The National Population Census indicates that the entire population of Ilorin had risen to 2,365,353 in 2006 from 100,592 in 1931, 208,546 in 1963, and 532,088 in 1991 [42]. Adedibu et al. [43] identified three main stages of Ilorin's physical expansion: 1935–1960, a period of very modest growth; between 1960 and 1972, the city expanded astronomically as the state's capital; between 1973 and 1998, the town saw an extraordinary pace of population expansion due to government policies and the migration of people into the city. The city is currently seeing a fresh pattern of concentric population dispersion to the suburbs, which is what has enabled the city to keep growing to this day [42]. More so, urbanisation patterns in Ilorin have demonstrated that the city's accelerated population growth has expedited the city's physical development spatially as a result of a growing demand for land for residential construction. In 1960, Ilorin's built-up area was 1,235.84 hectares; by 2010, it had grown to 14,306.71 hectares, see Figure 1 [42, 44]. The rapid urbanisation and urban growth of Ilorin can be attributed to its status as the state capital. As noted by Krellenberg et al. [20], urban system creates risky situations that affect the inhabitants of the urban area. These situations are usually accompanied by vulnerabilities and everyday hazards detrimental to sustainable urban development.

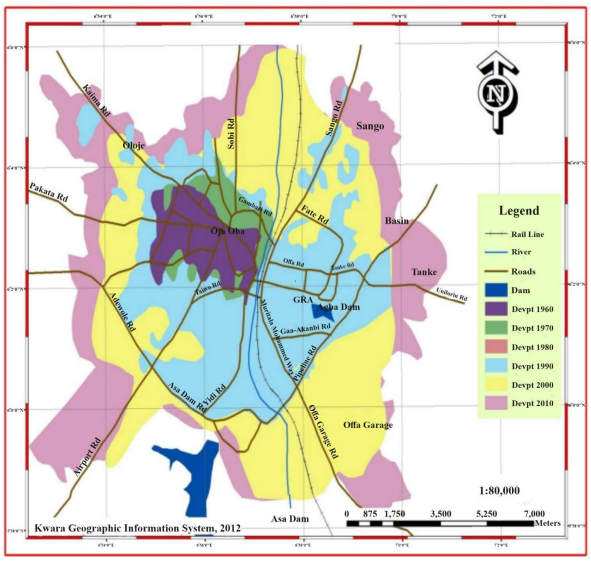

Figure 1. Spatial growth and development of Ilorin 1960-2010
Source: Kwara geographic information system 2012, in the study [42]

4.2 Research Methodology

This study adopted the deductive approach to investigate the occurrence of vulnerability and everyday hazards and the factors driving them in the study area. This study made use of questionnaires to collect primary data for the study. The use of questionnaires is consistent with Pelling [45], who argued that social surveys are extremely helpful in identifying the vulnerabilities in society. Therefore, the participants for this study contain members of the most vulnerable groups, which Patel et al. [46] suggested should be vital research participants as well as beneficiaries of the research. Since vulnerability has been associated with poverty and informality [4, 12], the sample frame for this study will contain essentially the urban poor in Ilorin. Kwara's poverty rate was estimated by the World Bank to be 20.4% in their Nigerian poverty index [47]. With a growth rate of 3.2%, the population of Ilorin is projected to grow from 777,667 in 2006 to 1,370,970 in 2024. Using a 20.4% poverty rate for the state, the poverty rate for Ilorin is calculated to be 279,677.88. The sample size calculated as 1% of the poor in the city is 280. The use of 1% is based on Trochim [48], who identified that as little as 1% is adequate for a large population and 10-30% for a small population. The participants were purposively sampled across the 20 wards in the 3 local governments of the city, with 14 samples in each ward. By using purposive sampling, the participants who are most relevant to the research were selected. To avoid bias, the samples were cut across different demographics and across multiple locations in the study area. The questionnaire was designed to collect information on vulnerability, everyday hazards and factors contributing to vulnerabilities and everyday hazards in the study area. The level of agreement of the participants to the variables of vulnerability, everyday hazards and factors contributing to them were rated using a Likert scale given as:

Strongly Agree – 5, Agree – 4, Undecided – 3, Disagree – 2, Strongly Disagree – 1.

To be able to analyse the questionnaire data statistically and quantify the responses, the Statistical Package for Social Sciences (SPSS) was used. Descriptive statistics containing frequency and percentage counts and the mean distribution of the variables were used for analysing the data. The results are presented in tables. The findings have implications for urban planners and policy makers to bridge the socio-economic divide in making Ilorin inclusive, safe, resilient and sustainable for the residents.

5 Findings

The findings of this study are presented in Table 1, Table 2 and Table 3. The study primarily focused on assessing vulnerabilities and everyday hazards concerning the economy, society, environment, health, housing, and transportation. Out of the 280 responses received, only 273 responses were complete and processed for analysis.

Table 1. Vulnerabilities assessment in Ilorin

Vulnerability	Strongly Agree F/%	Agree F/%	Undecided F/%	Disagree F/%	Strongly Disagree F/%	Mean
Economic: Lack of access to stable income due to unemployment/ underemployment	146/53.5	103/37.7	17/6.2	7/2.6	-	4.42
Social: Discrimination/marginalisation/ exclusion based on ethnicity, gender, age, education, disability	107/39.2	136/49.8	15/5.5	15/5.5	-	4.23
Environmental: Exposure to pollution (land, water, air), natural disasters, climate change impacts among others	103/37.7	122/44.7	37/13.6	10/3.7	-	4.16
Health: Susceptibility to health risks and diseases due to inadequate access to health care, lack of finance, location or general socio-economic status	106/38.8	125/45.8	25/9.2	7/2.6	10/3.7	4.14
Housing: Lack of access to quality housing	75/27.5	147/53.8	30/11.0	15/5.5	6/2.2	3.99
Transportation: Lack of access to safe, convenient, and affordable transportation	89/32.6	117/42.9	32/11.7	28/10.3	7/2.6	3.93

Source: Authors' work, 2024

From Table 1, the most occurring vulnerabilities are presented based on their mean values. Economic vulnerability (4.42), which occurs in terms of lack of access to stable income due to unemployment and/or underemployment, is the most common vulnerability in Ilorin, which can be attributed to the increasing population and lack of jobs to

cater to the teeming population. Social vulnerability (4.23) includes discrimination, marginalisation, or exclusion based on ethnicity, gender, age, education or the presence of a disability. These findings are in line with the study of Salem [38] and Wisner et al. [34]. Environmental vulnerability (4.16) manifests in terms of exposure to land, water, or air pollution, natural disasters and climate change impacts, among others. Past studies in Ilorin have also attributed environmental vulnerabilities to natural disasters [12–16]. Health vulnerability (4.14) includes susceptibility to health risks and diseases due to inadequate access to health care, lack of finance, location and/or general socio-economic status. Housing vulnerability (3.99) occurred due to lack of access to quality housing. Lastly, transportation (3.93) vulnerability, which includes lack of access to safe, convenient and affordable transportation, is the least occurring vulnerability in Ilorin. Past research had noted that the significant health burden that many low-income urban residents suffer is due to insufficient water, sanitation, and drainage services; substandard and overcrowded housing; and inefficient control of pollution and traffic [36].

Table 2. Everyday hazards assessment in Ilorin

Everyday Hazards		Strongly Agree F/%	Agree F/%	Undecided F/%	Disagree F/%	Strongly Disagree F/%	Mean
Economic	Job insecurity	89/32.6	135/49.5	28/10.3	15/5.5	6/2.2	4.05
	Rising income/finance inequalities	113/41.4	130/47.6	18/6.6	9/3.3	3/1.1	4.25
Social	Crime and violence	86/31.5	160/58.6	18/6.6	9/3.3	-	4.18
	Discrimination/ marginalisation/ segregation/ isolation	62/22.7	174/63.7	25/9.2	12/4.4	-	4.05
Environmental	Air and noise pollution	78/28.6	152/55.7	28/10.3	15/5.5	-	4.07
	Urban heat island	83/30.4	128/46.9	41/15.0	18/6.6	3/1.1	3.99
Health	Infectious diseases	80/29.3	133/48.7	42/15.4	18/6.6	-	4.01
	Mental health stressors	93/34.1	122/44.7	40/14.714.718/6.6		-	4.06
	Hunger, food, insecurity and malnutrition	122/44.7	130/47.6	9/3.3	9/3.3	3/1.1	4.32
Housing	Homelessness/ Squatting	68/24.9	126/46.2	51/18.7	25/9.2	3/1.1	3.85
	Substandard housing	71/26.0	137/50.2	38/13.9	24/8.8	3/1.1	3.91
	Home accidents such as slips, trips & falls; burns & scalds; electrical hazards and; fire accidents	80/29.3	135/49.5	37/13.6	15/5.5	6/2.2	3.98
Transportation	Traffic congestions	90/33.0	114/41.8	39/14.3	24/8.8	6/2.2	3.95
	Road accidents	78/28.6	120/44.0	54/19.8	15/5.5	6/2.2	3.91

Source: Authors' work, 2024

Table 2 shows the assessment of everyday hazards in Ilorin. From the table, in descending order, the most occurring everyday hazards are hunger, food insecurity and malnutrition (4.32); rising income/finance inequalities (4.25); crime and violence (4.18); air and noise pollution (4.07); mental health stressors (4.06); job insecurity (4.05); discrimination/marginalisation/segregation/isolation (4.05); infectious diseases (4.01); urban heat islands (3.99); home accidents such as slips, trips and falls, burns and scalds, electrical hazards and fire accidents; traffic congestion (3.95); road accidents (3.91); substandard housing (3.91) and homelessness (3.85). The top five everyday hazards revolve around health, economic, social and environmental hazards. This indicates that Ilorin is faced with a range of vulnerabilities which have implications in realizing the SDGs, particularly no poverty (SDG 1), zero hunger (SDG 2), good health and well-being (SDG 3), decent work and economic growth (SDG 8), reduced inequalities (SDG 10), sustainable cities and communities (Goal 11) and climate action (SDG 10).

Table 3 shows the factors contributing to vulnerabilities and everyday hazards in Ilorin. Based on the mean value, the factors contributing to vulnerabilities are: poverty/lack of finance (4.40), unemployment/underemployment (4.30), income inequality (4.21), lack of awareness, ignorance, misinformation or limited access to timely and accurate information on vulnerabilities and everyday risks (4.17), lack/ineffective regulatory frameworks, weak governance structures and lack of enforcement of policies (4.16), vulnerability to health hazards, pollution and natural disasters (4.15), proximity to disaster-prone areas such as flooding, erosion (4.14), living in slums, poor housing, overcrowded housing (4.14), lack of urban/neighbourhood plans (4.13), lack of education (4.11), lack/inadequate urban infrastructure such as transportation, power, solid waste (4.03), religious and cultural beliefs and practices that prioritise risk-taking or disregard safety precautions (3.96), social exclusion/discrimination due to disabilities/ pre-existing health conditions (3.95), geographic/spatial location (3.90) and ethnic/religious marginalisation (3.82).

Table 3. Factors contributing to vulnerabilities and everyday hazards

Vulnerability	Strongly Agree F/%	Agree F/%	Undecided F/%	Disagree F/%	Strongly Disagree F/%	Mean
Poverty/lack of finance	155/57.1	89/32.6	12/4.4	16/5.9	1/0.4	4.40
Income inequality	108/39.9	130/47.6	24/8.8	6/2.2	5/1.8	4.21
Unemployment/underemployment	127/46.5	110/40.3	30/11.0	3/1.1	3/1.1	4.30
Lack of education	108/39.6	114/41.8	29/10.6	18/6.6	4/1.5	4.11
Geographic/spatial location	63/23.1	149/54.6	34/12.5	24/8.8	3/1.1	3.90
Proximity to disaster-prone areas such as flooding, erosion	97/35.5	133/48.7	31/11.4	9/3.3	3/1.1	4.14
Vulnerability to health hazards, pollution, natural disasters	102/37.4	126/46.2	33/12.1	8/2.9	4/1.5	4.15
Living in slums, poor housing, overcrowded housing	103/37.7	122/44.7	36/13.2	7/2.6	51/1.8	4.14
Ethnic/religious marginalization	80/29.3	113/41.4	43/15.8	25/9.2	12/4.4	3.82
Social exclusion/discrimination due to disabilities/ pre-existing health conditions	93/34.1	108/39.6	43/15.8	22/8.1	7/2.6	3.95
Lack/inadequate urban infrastructure, such as transportation, power, and solid waste	84/30.8	138/50.5	30/11.0	18/6.6	3/1.1	4.03
Lack of urban/neighbourhood plans	101/37.0	132/48.4	18/6.6	18/6.6	4/1.5	4.13
Lack/ ineffective regulatory frameworks, weak governance structures and lack of enforcement of policies	103/37.7	128/46.9	27/9.9	12/4.4	3/1.1	4.16
Lack of awareness, ignorance, misinformation or limited access to timely and accurate information on vulnerabilities and everyday risks	103/37.7	130/47.6	27/9.9	9/3.3	4/1.5	4.17
Religious and cultural beliefs and practices that prioritise risk-taking or disregard safety precautions	96/35.2	113/41.4	33/12.1	19/7.0	12/4.4	3.96

Source: Authors' work, 2024

6 Discussions

The three major vulnerabilities experienced in the study area are economic vulnerability, which has to do with lack of access to stable income due to unemployment and/or underemployment; social vulnerability, experienced as a result of discrimination, marginalisation or exclusion based on ethnicity, gender, age, education or the presence of a disability, and lastly, environmental vulnerability, which is seen in terms of pollution, natural disasters and climate change. These vulnerabilities occur because the city of Ilorin is unable to resist or tolerate adequately the shocks and pressures that come with the vulnerabilities [21]. This means that the vulnerabilities have the possibility of causing damage due to the inability to manage them [25]. For example, flooding has become a yearly occurrence during the rainy season in Ilorin due to persistent inability to manage flooding [13–16].

According to the findings, the three most occurring everyday hazards in Ilorin are hunger, food insecurity and malnutrition, rising income and/or finance inequalities, and crime and violence. These everyday hazards are directly linked to the inability of the city to manage vulnerable situations [2]. More so, these everyday hazards have the potential to result in death, severe injury, adverse health consequences, destruction of property, disruption of economic and social stability, or environmental degradation [26]. Friend et al. [19] identified that despite the revolutionary and growth potentials associated with urbanisation, it is linked to poverty, vulnerability and climate change. Hunger, food insecurity and malnutrition are direct consequences of poverty, which is also closely linked with economic vulnerability and social vulnerability, where people lack access to job opportunities due to marginalisation or exclusion. This finding agrees with Salem [38], who identified marginilisation and social exclusion in cities due to the rise in diversity as the city grows.

Looking at what fuels the vulnerabilities and everyday hazards experienced in Ilorin, the findings reported the five major factors to be poverty/lack of finance; unemployment/underemployment; income inequality; lack of awareness,

ignorance, misinformation or limited access to timely and accurate information on vulnerabilities and everyday risks, and lack of or ineffective regulatory frameworks, weak governance structures and lack of enforcement of policies. Poverty is a recurring experience in developing nations that contributes to vulnerabilities experienced [4, 12, 21]. Studies have also identified poverty and unemployment as contributors to susceptibility and exposure to vulnerabilities and hazards [36, 49]. Social and economic marginalisation experienced in cities ensures that the people that are marginalised due to whatever reasons do not get a job and generally do not have access to finance/capital that can get them out of poverty. This is why the World Cities Report [21] stated that most people living in developing nations are already caught in a never-ending cycle of poverty.

Institutional factors contribute to vulnerabilities and everyday hazards experienced in Ilorin, according to research [36, 39, 40, 46, 49]. UN-Habitat [4] observed that the refusal of cities to confront poverty and ecological damage results in its recurrence. Pelling and Wisner [31] recognised that, among other things, the shortcomings of the governance structures of cities raise the possibility of urban violence. Adelekan [35] expatiated on this by saying that the actions or inactions of public actors and institutions impact adaptive capability and the preparation and reaction to disasters. The issues of misinformation, lack of awareness or limited access to timely and accurate information are also due to the failure of the institutional factors. Satterthwaite [40] identified that local administrations frequently turn away residents of informal settlements. This is likewise a reflection of the social and economic discrimination, marginalisation and exclusion by residents of Ilorin and other cities in Nigeria.

7 Conclusion and Recommendations

The findings of this study revealed that Ilorin experiences economic, social and environmental vulnerabilities. The city grapples with issues of hunger, food insecurity and malnutrition, rising income or finance inequalities, and crime and violence. The factors that drive these issues are poverty, unemployment/underemployment, income inequality, lack of awareness, and weak institutional capacity/governance structure. This shows that the interplay of vulnerability, everyday hazards and the factors that drive them in Ilorin are intricately connected and linked to sustainable development. This agrees with Rafael et al. [23], who stated that vulnerability encompasses an ever-changing and multifaceted reality. This finding re-emphasises the complex nature of urban challenges in Nigeria due to poor management of cities and the need to take a holistic approach to solving these urban problems. Furthermore, this study draws attention to the need for cities in Nigeria and Sub-Sahara Africa to reconsider their approaches to public safety, and the ways in which susceptibility to vulnerabilities and everyday hazards may impact their long-term growth and sustainability. Further research can explore the impact of vulnerabilities and everyday hazards on specific SDGs such as poverty (SDG 1) and good health and well-being (SDG 3), among others.

A multidisciplinary collaboration is required to address the complexity of cities as interconnected systems in order to predict how vulnerabilities and everyday hazards would interact and manifest to affect the people [46]. Urban planning can become a tool for this purpose; however, informality is generally difficult to handle in planning that relies on formal procedures [4]. Therefore, to close the urban gap that exists in Ilorin, there is a need for concerted efforts by urban planners, policy makers and the general public to come together and develop tailored solutions to the urban challenges facing them. To do this, there is a need to build a multilevel collaborative effort that is robust and agile in Ilorin. Kwara State should institutionalise sustainable development policy for the city by forming a steering committee comprising stakeholders drawn from multiple groups to develop the ISDS. Urban planning and governance need a comprehensive and inclusive strategy involving resilient actors such as communities, the business and public sectors, and people who are able to engage in decision-making processes and comprehend the crucial concerns of urbanisation and climate change [50]. Moreover, the whole global agenda, especially the SDGs and the New Urban Agenda, is predicated on the need for this degree of cooperation due to the challenges associated with addressing multidimensional poverty, inequality, and vulnerability [21]. Therefore, by developing the ISDS, the underlying factors that drive vulnerabilities and everyday hazards can be sufficiently addressed through planning initiatives that are comprehensive, integrated and stakeholder-driven.

8 Limitations and Recommendations for Future Studies

This study is limited first by a descriptive quantification of vulnerabilities and everyday hazards in Ilorin. By making use of questionnaires, new insights on vulnerabilities and everyday hazards in the city could not be determined. Also, an in-depth analysis of the factors contributing to everyday hazards could not be explored. Secondly, the selection of a homogenous group of participants, which are the urban poor, may have resulted in a subjective description of vulnerabilities and everyday hazards. That is, the poor sampled may not have given a generalised view of everyday hazards in Ilorin because other members of the community also experience some form of vulnerabilities and everyday hazards. Therefore, there is a need to further study the interplay of vulnerabilities and everyday hazards in Ilorin using qualitative data collected through interviews to further elucidate the respondents' experience with vulnerabilities and everyday hazards. There is a need to also sample other non-poor residents in

the city to be able to present a holistic view of the experience. In addition, there is a need to directly examine the impacts of vulnerabilities and everyday hazards on the sustainable development of Ilorin.

Data Availability

The data that supports the findings of this study are not available. The study participants did not give consent for their data to be publicly shared due to the sensitive nature of the research.

Conflicts of Interest

The authors declare no conflicts of interest.

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