

Domestic Public Opinion of Belizean Public Roads, Schools, Health Services, and Water Services

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Abstract

Utilizing the Latin American Public Opinion Project (LAPOP) nationally representative survey of 1,550 Belizeans in September through October 2023, we examine Belize public opinion in four areas: roads, schools, health and medical services, and water services. We offer a baseline of Belizean opinions on these four areas of public goods/services with a focus on six demographic factors—age, gender, district residence, educational attainment, race/ethnicity, and monthly household income—affecting public opinion. We find that most Belizeans are dissatisfied with the condition of the streets, roads, and highways and the quality of public medical and health services. Alternatively, we find that a large majority of Belizeans are satisfied with the provision of water services and schools. We find public opinion differences among Belizeans by age, gender, education, education and income, but not by district residence or race/ethnicity.

Keywords: Public Services, Public Opinion, Belize, LAPOP

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Introduction

In 2023, the Statistical Institute of Belize (SIB) reported in its Multidimensional Poverty Report that those in the south - particularly the Mayas – may not be monetarily poor; but, based on the multidimension poverty index now used to measure poverty, they have a greater intensity of poverty because many don't have access to the internet, or roads to get out of their villages (Statistical Institute of Belize, 2023) In response to this, Prime Minister Briceño stated that “we must have more streets, more roads, more access to farmlands, more access to health clinics and schools. These are the things that will improve the lives of our citizens, so the challenges are big.” (7 News Belize, 2023)

In 2024, twenty-four hours after the Prime Minister gave his State of the Nation's Address, of which he stated that the country has improved in many aspects, including the access to public goods, the leader of the opposition, Hon. Moses Michael Levi Barrow fired back by asking the Belizean people if their lives have been any better (7 News Belize, 2024g). He specifically asked, “*Can you afford the highest cost of living ever? Are you closer to getting your first affordable home? Did you get your first piece of land? Are you getting affordable quality public healthcare? Can you afford to send your children to school? Do you have food security? Are you living the Belizean dream or the dreaded nightmare?*” (7 News Belize, 2024e)

And while a groundbreaking ceremony was done in March 2024 for San Pedro Town's first public hospital, which will provide both primary and secondary care to the growing community which has had to live decades without a proper hospital—and not to mention the tourists needing emergency services and were unable to get it (7 News Belize, 2024c)—the question on its staffing is raised, particularly because the country currently faces a lack of nurses (World bank, 2024) and the current budget shows reductions in nursing scholarships and nursing posts (7 News Belize, 2024e). While this new development seems exciting, the issue of the current dilapidated state of the Karl Heusner Memorial Hospital (the main public hospital in the country), and the shortages of medical equipment that have been reported across all public hospitals in the country are still of concern (7 News Belize, 2024d).

Definitionally, public goods and services are those that are to be provided to everyone if they are to be provided to anyone, must be paid for collectively if they are to be had (Sekera, 2019) and can be enjoyed over and over without depleting the benefits it provides to others (Chin, 2021). A fundamental function of government is to provide basic services to its population. Among the most fundamental public services include the provision of transportation routes, schools, health care, and potable water. Roads, streets, and highways provide transportation corridors for work, travel, entertainment, tourism, and emergency services. Schools enrich human capital, developing minds and bodies for economic development, creating informed citizens for democratic rule, and providing avenues for personal improvement. Health and medical services build a strong and healthy citizenry to advance oneself and the well-being of society. Water services that provide clean and accessible household water reinforce a healthy society and save time and energy that otherwise would be lost to securing water.

Within democracies, governments must respond to the public will or face an electoral backlash. Public opinion polling is one pathway to better understand the public view of government performance in the provisioning of basic services. We utilize a nationally representative public opinion survey from the autumn of 2023 to better understand the public's view of the provision of four public goods and services in Belize: 1) roads, streets, and highways, 2) schools, 3) health and medical services, and 4) water services. As this research is exploratory, our two research questions consider: 1) “How do Belizeans view the provision of public services?” and 2) “Do demographic factors influence Belizean views of public goods/services provisioning?” Answers to these research questions comprise a fundamental contribution to Belizean public opinion research and provide benchmarks for public policy and further research.

Literature Review

Though public goods and services should be accessible to all, many across the world still struggle in accessing these basic needs. Access to healthcare services remains a challenge, especially for developing countries such as Belize. However, despite improvements in providing access to healthcare in developing

countries, an alarming number still have limited access (Peters et al., 2008). Peters et al (2008, p. 168) states that “the poor in these countries suffer from a disproportionate burden of disease yet usually have less access to health care, whether measured by geographic accessibility, availability, financial accessibility, acceptability, or quality of care. These countries are particularly searching for strategies that can be employed to make public goods and services more available by removing the barriers that affect access. The results of the September 2021 Multidimensional Poverty Index (MPI) study conducted by the Statistical Institute of Belize (2023) revealed that 35.7% of the Belizean live in households that were multidimensionally poor, that is, in addition to being monetarily poor, individuals are also deprived across several dimensions on well-being such as health, education, employment and living standards (Statistical Institute of Belize, 2023). Monetarily poor or not, this finding signifies access to healthcare, education, and other public goods and services were also important determinative factors in ascertaining the holistic poverty situation in the country.

Roads

The transportation infrastructure in Belize is incomplete. There are few paved road arteries. Roads oftentimes are more planned than realized providing avenues for popular mobilization (Haines, 2018). All weather roads, which are roads allowing for travel during inclement weather, change the local developmental landscape, often changing local narratives from today forward from past backward (Haines, 2018). Between the periods 2004/2005 and 2007/2008, the proportion of the road system in Belize that was considered in poor to bad condition increased from 5 to 12 percent (Horton et al., 2010). This deterioration may be attributed to a deficit in resource allocation for maintenance both at the planning and execution stages.

The Belize road network in 2010 consisted of primarily rural roads (over 50%), main streets and highways (less than 20%), and roads that would usually link rural areas with the main towns or the primary road system, made of either gravel or marl surfaces (Horton et. al., 2010). Existing ground connections to travel West and North of the country were available, facilitating tourism travel and agriculture production (Horton et al., 2010). Based on the country’s population size and level of production, the country’s supply of roads was considered high even though when compared to its surface area, it may seem low (Horton et al., 2010). In 2010, at least 20% of roads were paved (Horton et al., 2010) and today, the primary road system consists of four major highways which connect major urban settlements and border areas.

Water

Since 2010, Belize had improved access to water services (Horton et al., 2010). In comparison to Latin America and the Caribbean, Belize ranked very high with regards to per capita availability of freshwater (Horton et al., 2010). Water access and quality is the focus of Quinn (2015) who explores the Belize Water Service partnership with a California water district to enhance Belize water services. Quinn (2015) cites public concerns regarding water contamination and the autonomy, professionalism, and development of local water boards, including local management and workers. A natural tension exists between centralized water management and local water boards, augmented by party affiliation and work-based relationships.

Water access and sanitation services, while not universal, cover most of the population (Horton, et. al, 2010). The Statistical Institute of Belize reported from their 2022 Population and Housing Census, that 83.8% of individuals living in Belize’s main source of water was public compared to 77.7% in 2010 (SIB, 2022, 2010). This finding along with several other developments concluded that the living standards and infrastructure development have improved when compared to the last census of 2010 (SIB, 2022).

Education

Changing the education system so as to enhance quality and accessibility for all has been a part of Belize’s education goals for 2030 in order to support economic growth, development and improvement in the quality of life (Barnett et al., 2013). An important strategic action required to accomplish this goal is improving access by expanding the number of secondary schools, especially in the rural areas (Barnett et al., 2013).

In addition to physical structures, fully resourced teachers are also an important requisite for this public service to be considered meaningful and have the impact that is expected. While the government imposes educational qualifications for teachers in Belize, Ingle et al. (2018) argue that motivated, caring, and knowledgeable (skills and knowledge) Belizean teachers provide for an environment of enhanced school quality. While this is not disputable, “knowledgeable” in Belize could be questioned based on the result of the World Bank’s Belize Public Expenditure Review 2024, which stated that though government invests the greatest share of public funds in education, it's not getting back what it invested (World Bank, 2024).

The World Bank claims that Belize lacks educated teachers, and that the root of the problem stems from poor teaching (7 News, 2024b). Though the total public expenditures for education in Belize were high relative to Latin American countries and Caribbean small states and has been in an upward trend, such increase correlated negatively with the education outcomes (World Bank, 2024). The question is, “Will the quality of teaching worsen?” Most recently, 130+ teachers were frustrated because of not receiving their monthly remuneration from the government for up to six months, in some instances (7 News Belize, 2024h). Now, this will certainly have a negative impact on teachers’ motivation, having a chain reaction on the quality of teaching, given that much research has shown that performance has a clear link with motivation.

Healthcare

In the case of basic healthcare, the main barrier is the cost. Prior to 2023, Belizeans had the burden of paying fees when accessing health care services at the public hospitals. However, according to the current Minister of Health and Wellness, over the past three years, the arrears from revenues not collected from citizens who visited public hospitals was close to 50%; not to mention the additional costs incurred stemming from the efforts of reducing the arrears was also high, which affected the healthcare system even more. Due to the poverty situation described above, recently in Belize, the fees charged at the public hospitals (except Karl Heusner Memorial hospital) have been waived (Government of Belize Press Office, 2023).

Health of humans directly affects the quality of life. In 2013, it was recognized that the move towards a healthy citizenry should include an introduction of higher standards of health care delivery across the system (Barnett et. al, 2013). This would include achieving a high-level goal such as universal access to affordable and high-quality healthcare that does not focus on only ill persons but that provides citizens with preventative and curative health services throughout their lives (Barnett et al., 2013). For many years, Belizean satisfaction for its health care services has lagged (Uzwiak & Curran, 2016) and to date, the situation seems to remain in some aspects. As reported by the Belize Public Expenditure Review (2021), though Belize’s total health expenditure as a share of total government expenditures was among the highest in the Caribbean, it highlighted that one of the main hindrances of the health system is the lack of sufficient and qualified human resources such as nurses and doctors. High employee turnover in rural and/or underserved areas, an increase in emigration of health workers, low productivity, and poor overall performance are obstacles for progressive expansion of health services, particularly at the first level of care. The World Bank Public Expenditure Review (2021) concluded that though the largest parts of the budget are allocated to health and education, the benefits are not in sync with the costs.

Methodology

Data

LAPOP, the Latin American Public Opinion Project, is a widely used and highly regarded data source for research regarding public opinion in the Americas. Recent research using LAPOP has examined issues ranging from conditional cash transfers (Williams, 2023; Zizumbo-Colunga, 2023), to extralegal consumption (Pisani & Pisani, 2018), and voting patterns (Khadan et al., 2023). LAPOP has conducted various rounds of surveys throughout Latin America since 2004 surveying more than 385,000 respondents. The survey has been conducted in 22 countries in Latin America.

The secondary data used in this article is derived from the LAPOP housed at Vanderbilt University. In Belize, 1,550 Belizean citizens of voting age were surveyed using a closed-ended questionnaire, between September 13 and October 31, 2023. Survey responses were collected utilizing face-to-face interviews

conducted in Spanish and English. The languages in which the survey was completed was 70.1% in English and 29.9% in Spanish.

The surveys were conducted face to face at households with an interviewer and adult household respondent. The average length of the survey was approximately 45 minutes. The survey fieldwork was carried out by Borge y Asociados on behalf of LAPOP, with key funding coming from Vanderbilt University and USAID. In order to acquire the sample population, a national probability sample was adopted using a multi-stage probability design, which was stratified based on the six districts of the country. Each stratum was further sub-stratified by size of municipality and by urban and rural areas within municipalities. The survey is a nationally and geographically representative snapshot across different demographic segments of public opinion in Belize (Rodriguez et al., 2024).

The sample frame was obtained from the 2022 population census. The survey instrument comprises 152 questions with main areas recording demographic information and public opinion responses. The rating scales and LAPOP questions are shown in the tables within this article. The estimated margin of error for the survey is $\pm 2.43\%$. Demographics include such items as age, gender, district, education Level, ethnicity/race, household income, and so on. This study concerns the provision of four public goods and services in the country: 1) roads, streets, highways, 2) schools, 3) health and medical services, and 4) water services (see <https://www.vanderbilt.edu/lapop/about-americasbarometer.php>) for the entire questionnaire). One item or question was related to each of these public goods/services. The wording of the questions may be found in Table 2 of this paper.

Descriptive Statistics

Descriptive statistics of the sample are reported in Table 1. We utilize the following demographic variables: age, gender, district residence, educational attainment, race/ethnicity, and monthly household income. The average age of respondents is 40.7 years, reflecting middle-aged respondents with an age range of 18 to 91. The survey sample is nearly evenly split between women and men and proportionally representative of the Belizean population across districts with the largest representation from Belize and Cayo districts (Statistical Institute of Belize, 2020). Of the sample, 43.9% have a primary education or less. Those with high school experience include 39.0% of the respondents with almost one-quarter graduating high school. Fewer than one in five have some university schooling with 12.1% of respondents completing 6th form or higher. Race and ethnicity reflect the nation with Spanish/Mestizos the plurality (47.3%) and Creoles (28.0%) and indigenous peoples (11.1%) represented subgroups. About two-thirds of respondents come from households earning BZ\$1,000 or less per month, one in five respondents come from households earning between BZ\$1,001 and BZ\$2,000 per month, and 11.5% come from households earning BZ\$2,0001 or more per month.

Table 1: Sample Descriptive Statistics (N=1,550)

Variable	Value
Mean Age (std. dev.)	40.7 (14.7)
Gender (%)	
Female	50.2
Male	49.8
District (%)	
Corozal	12.6
Orange Walk	11.6
Belize	30.3
Cayo	25.2
Stann Creek	10.9
Toledo	9.4
Education- Highest (%)	
None	5.1
Primary Incomplete	12.5
Primary Complete	26.3
Secondary Incomplete	15.2
Secondary Complete	23.8

Tertiary/6 th Form/ University Incomplete	5.0
Tertiary/6 th Form/ University Complete	12.1
Race/Ethnicity (%)	
Spanish/Mestizo	47.3
Maya/Indigenous	11.1
Creole/Black	28.0
Garifuna	7.3
Other (White, Mixed, East Indian, Other)	6.3
Total Monthly Household Income (BZ\$)	
0-1,000	68.6
1,001 - 2,000	19.9
2,001 or more	11.5

Source: Authors' calculation from the Belize LAPOP 2023.

Data Analysis

In discerning the significant demographic variables (see Table 1) for each of the four public services, we employ univariate statistical analyses, *ceretis paribus* (*all else being equal*). For categorical variables, cross tabulations are reported with corresponding Pearson Chi-Square values. For ordinal variables (i.e., age), a comparison of means or ANOVA with F scores reported are estimated, *ceretis paribus*. As such, the dependent variable in our study is the perceived level of satisfaction (very satisfied, satisfied, dissatisfied or very dissatisfied) based on the provisioning of four public goods, which were roads, streets and highways; public schools; public health services and quality of water service. The demographic variables were selected based upon variable availability and decades of social science research experience in Belize, suggesting familiarity with Belize.

Results

During September through October 2023, the prevailing Belizean view of the quality of four public services under study are reported in Table 2. Few Belizeans are very satisfied with the provisioning of any of the four public services. The rating of the provision of water service had a combined rating of 82.1% at the satisfied and very satisfied levels. A clear super majority public opinion is also satisfied or very satisfied with schools with a rating of 71.4%. On the other hand, a majority of Belizeans are dissatisfied and very dissatisfied with the condition of the streets, roads, and highways and the quality of public medical and health service, with cumulative ratings of 50.1% and 52.3%, respectively. For the first research question, Table 2 provides a general answer as to the public view of these government supplied services.

Table 2: Belize Public Opinion Regarding the Public Provisioning of Roads, Schools, Health and Medical Services, and Water Services

Public Opinion	Very Satisfied (%)	Satisfied (%)	Dissatisfied (%)	Very Dissatisfied (%)	<i>n</i>
Are you... with the condition of the streets, roads, and highways?	5.2	44.7	39.8	10.3	1,542
And with the quality of public schools? Are you...	6.9	64.5	22.7	5.8	1,491
And with the quality of public medical and health services? Are you...	5.3	42.4	37.7	14.6	1,531
And with the quality of your water service? Are you...	14.6	67.5	12.2	5.7	1,533

Source: Authors' calculation from the Belize LAPOP 2023.

The second research question breaks down the more general view of the four government goods and services by the demographic factors reported in Table 1. We report the significant univariate results of each of the four government goods and services in turn.

Streets, Roads, and Highways

Only one demographic variable is significantly different across the public opinion choices for the public provisioning of streets, roads, and highways (see Table 3). This variable is age through a comparison of means tests.³

Dissatisfaction in streets, roads, and highways was most present in the oldest and youngest survey respondents.

Table 3: Belize Public Opinion Regarding the Public Provisioning of Streets, Roads, and Highways

Public Opinion	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied
<i>Mean Age (std. dev.)</i>	<i>40.7 (18.3)</i>	<i>40.8 (14.7)</i>	<i>41.2 (14.6)</i>	<i>37.9 (13.1)</i>
Gender (%)				
Female	4.7	44.8	39.8	10.7
Male	5.5	45.0	39.4	10.0
District (%)				
Corozal	7.7	45.1	36.4	10.8
Orange Walk	7.8	44.1	38.0	10.1
Belize	4.9	44.0	38.7	12.4
Cayo	5.2	45.6	41.7	7.5
Stann Creek	3.6	45.6	42.0	8.9
Toledo	1.4	44.1	42.1	12.4
Education- Highest (%)				
None	10.5	50.0	34.2	5.3
Primary Incomplete	7.9	46.0	35.4	10.6
Primary Complete	5.2	45.9	42.5	6.4
Secondary Incomplete	3.9	42.5	45.1	8.6
Secondary Complete	4.4	44.7	37.1	13.9
Tertiary/6 th Form/ University Incomplete	2.6	41.6	40.3	15.6
Tertiary/6 th Form/ University Complete	4.3	44.6	37.1	14.0
Race/Ethnicity (%)				
Spanish/Mestizo	6.0	46.8	37.6	9.6
Maya/Indigenous	3.5	47.6	40.0	8.8
Creole/Black	5.1	40.9	42.8	11.2
Garifuna	2.7	41.1	43.8	12.5
Other (White, Mixed, East Indian, Other)	4.1	44.3	38.1	13.4
Total Monthly Household Income (BZ\$)				
0-1,000	5.0	45.2	40.4	9.3
1,001 - 2,000	4.1	46.3	37.7	11.9
2,001 or more	4.5	47.1	37.4	11.0

Note: Italics indicate statistically significant differences at the .10 < level.

Source: Authors' calculation from the Belize LAPOP 2023.

³ ANOVA: F=2.233, df=3, p=.083

Schools

Regarding the public opinion of the quality of public schools in Belize shown in Table 4, district residence is the only significant variable among the demographic variables considered (Pearson Chi-Square=31.187, df=15, p=.008). Satisfaction rates are high in the districts of Belize, Orange Walk, and Cayo with satisfaction rates above 72%. Lower levels of satisfaction appear in Toledo, Stann Creek, and Corozal, though overall satisfaction rates are still above 60%.

Table 4: Belize Public Opinion Regarding the Public Provisioning of Public Schools

Public Opinion	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied
Mean Age (std. dev.)	40.5 (17.4)	40.7 (14.7)	40.0 (13.9)	39.3 (13.5)
Gender (%)				
Female	7.4	64.3	22.4	5.9
Male	6.0	64.9	23.3	5.8
District (%)				
Corozal	7.5	62.0	24.6	5.9
Orange Walk	10.8	62.9	19.8	6.6
Belize	4.5	71.1	19.5	4.9
Cayo	8.4	64.1	20.8	6.6
Stann Creek	8.3	58.9	28.0	4.8
Toledo	3.5	56.6	32.9	7.0
Education- Highest (%)				
None	10.7	60.0	21.3	8.0
Primary Incomplete	12.1	59.3	22.0	6.6
Primary Complete	5.6	68.5	21.6	4.3
Secondary Incomplete	7.0	64.5	23.7	4.8
Secondary Complete	6.0	64.2	23.6	6.3
Tertiary/6 th Form/ University Incomplete	2.6	63.2	26.3	7.9
Tertiary/6 th Form/ University Complete	5.7	65.3	22.7	6.3
Race/Ethnicity (%)				
Spanish/Mestizo	7.2	65.6	21.8	5.3
Maya/Indigenous	3.6	59.6	30.1	6.6
Creole/Black	7.2	66.1	20.7	6.0
Garifuna	10.0	60.0	20.9	9.1
Other (White, Mixed, East Indian, Other)	4.3	64.9	27.7	3.2
Total Monthly Household Income (BZ\$)				
0-1,000	7.2	62.8	24.0	5.9
1,001 - 2,000	6.6	67.2	20.8	5.4
2,001 or more	6.8	71.6	19.6	2.0

Note: Italics indicate statistically significant differences at the .10 < level.

Source: Authors' calculation from the Belize LAPOP 2023.

Health and Medical Services

Four demographic variables are significant for public opinion of the provisioning of publicly administered medical and health services (see Table 5). These are age, gender, education, and monthly household income. Older Belizeans are on average more dissatisfied with public health and medical services than younger Belizeans (ANOVA: $F=2.242$, $df=3$, $p=.082$). Women are slightly more dissatisfied with public health and medical services than men, particularly for those very dissatisfied (Pearson Chi-Square=7.421, $df=3$, $p=.060$). Belizeans with higher levels of educational attainment are generally increasingly more dissatisfied with public health services than those with lower levels of educational attainment except for Belizeans completing only the primary school grades (Pearson Chi-Square=31.294, $df=18$, $p=.027$). Of note, those without any education represent the highest levels of dissatisfaction (very dissatisfied=20.3%). Belizeans

residing in the lowest income households are the least dissatisfied with public health and medical services. The most dissatisfied group concerning public health and medical services are those respondents living in households earning between BZ\$ 1,001 and BZ\$ 2,000 per month (Pearson Chi-Square=11.330, df=6, p=.079).

Table 5: Belize Public Opinion Regarding the Public Medical and Health Services

Public Opinion	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied
<i>Mean Age (std. dev.)</i>	<i>39.1 (15.7)</i>	<i>39.6 (15.5)</i>	<i>41.3 (13.8)</i>	<i>41.9 (14.0)</i>
<i>Gender (%)</i>				
<i>Female</i>	<i>5.3</i>	<i>41.0</i>	<i>36.8</i>	<i>16.9</i>
<i>Male</i>	<i>4.9</i>	<i>43.7</i>	<i>39.2</i>	<i>12.2</i>
<i>District (%)</i>				
<i>Corozal</i>	<i>4.8</i>	<i>38.6</i>	<i>37.6</i>	<i>19.0</i>
<i>Orange Walk</i>	<i>7.0</i>	<i>46.5</i>	<i>32.0</i>	<i>14.5</i>
<i>Belize</i>	<i>4.8</i>	<i>45.6</i>	<i>37.6</i>	<i>12.1</i>
<i>Cayo</i>	<i>7.1</i>	<i>38.8</i>	<i>38.6</i>	<i>15.5</i>
<i>Stann Creek</i>	<i>3.6</i>	<i>38.7</i>	<i>43.5</i>	<i>14.3</i>
<i>Toledo</i>	<i>2.8</i>	<i>45.5</i>	<i>37.8</i>	<i>14.0</i>
<i>Education- Highest (%)</i>				
<i>None</i>	<i>16.2</i>	<i>32.4</i>	<i>31.1</i>	<i>20.3</i>
<i>Primary Incomplete</i>	<i>6.0</i>	<i>42.9</i>	<i>38.5</i>	<i>12.6</i>
<i>Primary Complete</i>	<i>5.0</i>	<i>44.4</i>	<i>38.3</i>	<i>12.3</i>
<i>Secondary Incomplete</i>	<i>4.3</i>	<i>43.3</i>	<i>38.2</i>	<i>14.2</i>
<i>Secondary Complete</i>	<i>4.7</i>	<i>43.0</i>	<i>36.4</i>	<i>16.0</i>
<i>Tertiary/6th Form/ University Incomplete</i>	<i>2.7</i>	<i>44.0</i>	<i>37.3</i>	<i>16.0</i>
<i>Tertiary/6th Form/ University Complete</i>	<i>4.4</i>	<i>37.9</i>	<i>42.9</i>	<i>14.8</i>
<i>Race/Ethnicity (%)</i>				
<i>Spanish/Mestizo</i>	<i>5.2</i>	<i>43.6</i>	<i>38.4</i>	<i>12.7</i>
<i>Maya/Indigenous</i>	<i>3.6</i>	<i>38.7</i>	<i>41</i>	<i>16.7</i>
<i>Creole/Black</i>	<i>5.6</i>	<i>41.5</i>	<i>38.5</i>	<i>14.3</i>
<i>Garifuna</i>	<i>4.6</i>	<i>40.4</i>	<i>36.7</i>	<i>18.3</i>
<i>Other (White, Mixed, East Indian, Other)</i>	<i>5.3</i>	<i>45.7</i>	<i>28.7</i>	<i>20.2</i>
<i>Total Monthly Household Income (BZ\$)</i>				
<i>0-1,000</i>	<i>6.6</i>	<i>41.9</i>	<i>36.9</i>	<i>14.6</i>
<i>1,001 - 2,000</i>	<i>2.7</i>	<i>39.7</i>	<i>41.6</i>	<i>16.0</i>
<i>2,001 or more</i>	<i>2.6</i>	<i>44.4</i>	<i>41.1</i>	<i>11.9</i>

Note: Italics indicate statistically significant differences at the .10 < level.

Source: Authors' calculation from the Belize LAPOP 2023.

Water Services

Water services are the most esteemed of the four public services examined. Three demographic variables are significant (see Table 6). These are district residence, educational attainment, and monthly household income. District residents in Belize, Orange Walk, and Cayo have satisfaction rates of over 82% for the public provisioning of water services. Residents in Corozal, Stann Creek, and Toledo all have satisfaction rates above 73%, slightly tempered from other Belizean districts (Pearson Chi-Square=28.782, df=15, p=.017). High dissatisfaction rates appear in Corozal, with 26.2% dissatisfied or very dissatisfied. Generally, Belizeans with higher levels of educational attainment are increasingly more satisfied with the provisioning of public water services, except for Belizeans with an incomplete secondary school education (Pearson Chi-Square=27.971, df=18, p=.062). Of note, those without any education represent high levels of dissatisfaction (25.3%). Satisfaction with the provisioning of public water services increased for respondents living in households earning more per month (Pearson Chi-Square=11.710, df=6, p=.069).

Table 6: Belize Public Opinion Regarding the Public Provisioning of Water Services

Public Opinion	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied
Mean Age (std. dev.)	40.9 (15.5)	40.6 (14.6)	39.8 (15.7)	42.0 (12.7)
Gender (%)				
Female	14.6	67.8	12.4	5.3
Male	14.8	67.4	11.8	6.1
District (%)				
<i>Corozal</i>	<i>13.1</i>	<i>60.7</i>	<i>16.8</i>	<i>9.4</i>
<i>Orange Walk</i>	<i>12.4</i>	<i>71.8</i>	<i>11.3</i>	<i>4.5</i>
<i>Belize</i>	<i>14.3</i>	<i>72.4</i>	<i>9.9</i>	<i>3.4</i>
<i>Cayo</i>	<i>16.1</i>	<i>66.1</i>	<i>10.6</i>	<i>7.3</i>
<i>Stann Creek</i>	<i>17.2</i>	<i>61.5</i>	<i>17.2</i>	<i>4.1</i>
<i>Toledo</i>	<i>13.3</i>	<i>66.4</i>	<i>13.3</i>	<i>7.0</i>
Education- Highest (%)				
None	17.3	57.3	17.3	8.0
Primary Incomplete	14.5	64.0	12.9	8.6
Primary Complete	12.9	68.5	13.6	5.0
Secondary Incomplete	15.4	65.8	12.8	6.0
Secondary Complete	11.5	73.5	10.9	4.1
Tertiary/6 th Form/ University Incomplete	17.1	68.4	6.6	7.9
Tertiary/6 th Form/ University Complete	22.2	63.8	9.2	4.9
Race/Ethnicity (%)				
Spanish/Mestizo	13.5	66.6	13.0	6.8
Maya/Indigenous	14.8	65.7	12.4	7.1
Creole/Black	16.8	67.6	12.4	3.3
Garifuna	16.2	69.4	10.8	3.6
Other (White, Mixed, East Indian, Other)	10.5	74.7	7.4	7.4
Total Monthly Household Income (BZ\$)				
0-1,000	13.9	66.9	13.1	6.1
1,001 - 2,000	14.4	67.8	10.6	7.2
2,001 or more	22.6	65.2	8.4	3.9

Note: Italics indicate statistically significant differences at the .10 < level.

Source: Authors' calculation from the Belize LAPOP 2023.

Discussion

As it relates to the Belize public opinion regarding the public provisioning of streets, roads, and highways based on Table 3, it shows that males were more satisfied (50.5%) than females (49.5%), though not by a major difference. The satisfaction level was the highest in the Northern districts, Corozal (52.8%) and Orange Walk (51.9%), respectively. This could be attributed to the fact that out of the 31 area representatives that the Cabinet is composed of, 8 of them (25%) are representing the North and 6 out of the 8 (75%), possess ministerial assignments. As a result, it is reasonable to think that these ministers would allocate more infrastructural resources to these districts. Additionally, the infrastructure works per capita would be cheaper for Corozal because it is the smallest district of the country and has the second highest population density in the country (Statistical Institute of Belize, 2024; 2010). The Cayo district had the third highest level of satisfaction. The Minister of Works and Transport hails from the Cayo district, which could also be a reason why sample participants from the Cayo district are satisfied given that the Minister would also have interest and focus in developing this part of the country in this regard. Additionally, Cayo also has a high population density, which likewise means that infrastructure works per capita would be cheaper than the other districts. However, the Southern districts seem to be the forgotten districts given that they had the highest level of dissatisfaction, along with the Belize district. In the case of Toledo in the South, it has the lowest population density in the country (21.8) (Statistical Institute of Belize,

2024), meaning that few people live in large areas. This implies that infrastructure costs for streets, roads and highways become more expensive to provide, which could be the reason why it seems to be one of the districts where such development has least occurred.

As for the education level, the level of satisfaction regarding the public provisioning of streets, roads, and highways based on Table 3 was highest for participants who had little to no education. Generally speaking, more educated persons would normally have higher expectations than those who are less educated, because the former are expected to have better jobs, pay income taxes, have personal vehicles and as a result, hold their government more responsible for the satisfactory provision of public goods such as roads and highways. After all, individuals who pay more taxes expect that their taxes are to be utilized to provide this public good, especially given that depreciation and maintenance costs for their personal vehicles would be reduced with good quality roads and highways.

As it relates to ethnicity, the Spanish/Mestizos participants were overall more satisfied, followed by the Maya participants. The Spanish/Mestizos generally hail from the Northern district (Statistical Institute of Belize, 2024), of which the Statistical Institute of Belize 2010 population and housing census data revealed that 79.3% and 79.7% of Corozal and Orange Walk's population, respectively, are Mestizos. Comparing 2010 to 2024, this shows that Spanish/Mestizo ethnicity still dominates the Northern population. These two northern districts also represented the districts that had the highest level of satisfaction on the provision of roads/streets/highways.

As stated in the Amandala (2022), a persistent and structural feature of the Belizean economic landscape is the large size of its informal economy. Focusing on the income level, the participants who earned the highest income, had the highest level of satisfaction. Given the high level of informality in Belize's economy (Amandala, 2022; Pisani & Pisani, 2018), along with the fact that income as a variable may not elicit very truthful responses, may explain why persons with lower income level show a slightly lower level of satisfaction.

As it relates to the Belize public opinion regarding the public provisioning of public schools based on Table 4, it shows that females were more satisfied (71.7%) than males (70.9%), though not by a major difference. The residents of the Southern districts being Stann Creek and Toledo, reported the lowest level of satisfaction, 67.2% and 60.1% respectively, while the level of satisfaction was acceptable for all other districts with the Belize district having the highest (75.6%), followed by the Orange Walk district up north (73.7%) and then the Cayo district (72.5%). The satisfaction level up north in Corozal (69.5%) was still higher than in the Southern districts. With the Minister of Education hailing from the Belize district, particularly Belize City, it is reasonable to think that he would ensure that the district that he represents is well accommodated with regards to education, which include the schools, which could possibly explain why individuals in the Belize district had the highest level of satisfaction.

Focusing on ethnicity, the results showed that the Creoles (73.3%) followed by the Mestizos (72.8%) had the highest levels of satisfaction for the public provisioning of public schools. Given that the Belize district is comprised of mostly Creoles (Statistical Institute of Belize, 2010), this finding correlates with the above stated fact that most satisfied individuals hailed from the Belize district (75.6%); and, given that the Cayo and Northern districts possess mostly Mestizo residents (Statistical Institute of Belize, 2010), this also explains why the Northern districts had the second greatest level of satisfaction. The Maya and Garifuna reported the least level of satisfaction and given that these ethnicities are primarily located in the Southern districts of Belize (Statistical Institute of Belize, 2010), it further clarifies why the South was reported as having the least level of satisfaction. Particularly, in the Toledo district where satisfaction levels were the lowest, the 2010 census data reported that this district had the highest number of individuals (29.4%) who had less than a primary level education and the lowest number of individuals (58.7%) with at least a primary level education. The reason for these low levels of education could be as reported by 7 News Belize (2023), that these individuals such as the Maya, do not have much access to schools, internet or roads to get out of their villages. Another reason could be cultural given that in the Mayan culture predominantly found in Toledo, education is not valued much since they mostly depend on subsistence farming, of which education is not considered a requisite for (Oliveras-Ortiz & Hickey, 2020).

While Cárdenas et al. (2008) study reported that individuals with higher levels of education are less satisfied with the quality of the education provided by their government, this study reports otherwise. This study shows that the level of satisfaction was basically balanced (the same), despite the level of education, though more participants were far more satisfied than very satisfied.

As it relates to Belizean public opinion regarding public medical and health services based on Table 5, the Orange Walk district had the least level of dissatisfaction (46.5%), followed by the Belize district ((49.7%). With the Minister of Health and Wellness hailing from this district, it would be reasonable to assume that he takes care of the people in his constituency by providing adequate health care facilities and services. However, though this may be the case, given that the level of dissatisfaction is not significantly different than the level of satisfaction, it signals that there is still room for improvement. Other than these two districts, the remaining of the country's sampled participants were more dissatisfied than satisfied with the provision of this public good, despite age, education level, ethnicity or income level. This result highlights the fact that healthcare services need to be given priority countrywide, for the most part. While few strides have recently been made for getting the Karl Heusner Memorial Hospital up to speed with the latest twentieth century technology (7 News, 2024f) and in obtaining funds for the new Hope hospital in San Pedro town (7 News Belize, 2024a), the Tourism Minister's comment of which he conceded that public healthcare in Belize is lagging (7 News Belize, 2024a), surely supports the result of this study as it relates to the satisfaction level of public medical and health services. Important to note too, is that Belize faces important geographical constraints and population patterns that inhibit the provision of health care services, such as its low population density (Horton et al., 2010) and majority of its citizens (57.8%) residing in rural areas (Statistical Institute of Belize, 2024). Given these factors, it becomes very costly to provide adequate health care services in the country, in addition to the issue of few health officers (nurses and doctors) that are available (Horton et al., 2010; 7 News Belize, 2024a).

In 2010, it was reported that Belize had improved access to water services (Horton et al., 2010). The situation seems to remain 13 years after based on the Belize public opinion regarding the public provisioning of water services based on Table 6, which revealed that sampled participants are more satisfied and very satisfied than dissatisfied and very dissatisfied by a significant margin, despite their age, gender, education, ethnicity, district and income level. When comparing the census from 2010 to 2022, a couple of key findings revealed that households' main type of toilet facility is flushed toilets linked to septic tank or Belize Water Services sewer, with an increase by 10.7%, from 65.8% in 2010 to 76.5% in 2022 and households main water source is public piped into dwelling or yard, increasing by 6.1%, from 77.7% in 2010 to 83.8% in 2022 (Statistical Institute of Belize, 2024). Though these results were acceptable in 2010, the increases in 2022 reveal that provision of public water is now accessible and used by majority of the country's residents and could certainly explain why the sampled participants were significantly more satisfied and very satisfied than dissatisfied and very dissatisfied with the provision of this public good.

Limitations and Further Research

This study utilized secondary data from the Latin American Public Opinion Project, which though is a widely used and highly regarded data source for research regarding public opinion in the Americas, the validity of the findings is highly dependent on the quality of the secondary data used. Additionally, there was a lack of prior research studies on the topic that allowed very minimal literature to have been sourced and compared.

Only the data reflecting the survey opinions of four public goods/services were analyzed and discussed in this paper. Further research is recommended for the usage and analysis of the remaining data in order to get an expanded picture of the public's sentiments in Belize based on other issues.

Conclusion

Research on public goods and services in Belize is very limited to non-existent. The research contribution of this paper, as a first, lies in the exploration of Belizeans' perceptions leading to their satisfaction levels based on the government's provisioning of four public goods and services, namely streets, road and

highways; public schools; public medical and health care services and water services in Belize, Central America, using secondary data from the 2023 LAPOP study.

Generally, the results revealed that individuals' satisfaction levels were the highest with the public provision of water services and were the lowest with the public provisioning of public medical and health care services. However, the future looks promising in the case of the latter, given that in his budget speech for fiscal year 2024/25, Prime Minister's (PM's) Briceño highlighted that "the provision of health and wellness care and services are among his administration's top priorities, absorbing a preferential slice of the fiscal pie" (Briceño, 2024, p. 14), further exclaiming that "health is wealth" (Briceño, 2024, p. 15), alluding that Belizeans are expected to experience increased satisfaction as immense investments are focused towards the improvement of this public good/service. Important for the government to note, is that though plans are on the way for the improvement of this public good/service, it needs to ensure that its plans come to fruition in order to create a positive change in the accessing of healthcare services for its citizens.

The satisfaction levels for the perception of the provisioning of streets, roads and highways were more on the dissatisfied spectrum, though not by a major margin. In general, the Southern districts seem to be the forgotten districts. This result may come as no surprise to the government given that the PM's budget speech for the 2024/25 fiscal year reflects that more than one third (37%) of the budgeted capital spending will focus on upgrading, repairing and maintaining roads and highways in different parts of the country (Briceño, 2024). Ultimately, this level of planned investment for this public good signals that the government is conscious of the need for improvements in this regard. As a result, improvements are forthcoming as it relates to this public good.

The level of satisfaction based on the perceptions on the provisioning of public schools was very much on the positive side. Though the PM has indicated that education, like health, is a top priority for the country, the 2024/25 PM's budget speech makes no mention on capital spending for provision of or upgrading of schools. There might very well be no need for major investments concerning this public good based on the high satisfaction levels reported in this study.

In summary, the Government of Belize (GOB) has its task cut out to improve the satisfaction levels for at least a couple public goods in the country. In the 2024/25 budget speech, the PM stated that the GOB's plan for such fiscal year is to invest the dollars in areas that will touch its citizens lives in so many positive ways; whether it is at a clinic, or a hospital or a school, or the new street or drain, or the new highways. Collecting taxes such as property tax in Belize is an issue, contributing to insufficient public revenue to support the provisioning of these goods. Due to the free rider problem, motivation is lacking for individuals to pay their fair share of taxes which supports the provisioning of public goods; therefore, as PM Briceño additionally stated, "while putting limited money to best use is not an easy process and there will be projects that do not make the final cut," (Briceño, 2024, p. 26), there is optimism that the planned improvements will become a reality. However, based on the assumption that public goods are characterized as not being subject to consumption rivalry, larger jurisdictions experience a cost advantage (Buettner & Holm-Hadulla, 2013). Therefore, the low population density that exists in certain districts and the country on a whole, when compared to other countries, could potentially be one main issue affecting the adequate provisioning of public goods/services to Belizeans countrywide.

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