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Rural Local Government Institutional Sustainability Programs and Plans in Cascadia: A Comparative Analysis

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ABSTRACT: This research provides a comparative analysis of institutional sustainability programs in small and rural communities across British Columbia, Oregon, and Washington. The study reveals significant regional differences in the adoption of sustainability initiatives, with Oregon consistently leading in the implementation of various programs such as grant writing, conflict resolution, and e-government. The analysis identifies key factors influencing program adoption, including population growth, economic stability, and remoteness. Communities experiencing significant population growth and financial stability are more likely to adopt multiple sustainability programs, while remoteness and economic challenges, such as inflation, act as barriers. The study underscores the importance of regional context and local conditions in shaping the sustainability efforts of rural communities.

Keywords: Institutional sustainability; Sustainability initiatives; Local governance; Remoteness; Capacity building; Strategic planning; Conflict resolution; E-government; Program evaluation

1. Introduction

In recent years, institutional sustainability has garnered significant attention as governments and organizations worldwide seek to address long-term social, economic, and environmental challenges. Institutional sustainability refers not only to an institution's ability to manage finances, but also to its capacity to deliver and maintain services over time. This concept extends to the organization's effectiveness in serving communities and adapting to changing conditions. Scholars and international development agencies define institutional sustainability as the capacity of an institution to consistently produce an acceptable level and quality of valued outputs over time [1]. This involves developing and maintaining an effective system for coordinating people and securing resources to achieve sustainability objectives [1,2]. Institutional sustainability is an essential asset for organizations seeking to fulfill their missions, deliver their services, and contribute to advancing sustainable development goals. The true measure of an organization's sustainability—its long-term viability—can best be evaluated during periods of significant societal change when an institution is undergoing major political and economic shifts. These times reveal the strength of institutions in dealing with shocks [1–3].

While organizations cannot control all aspects of their external environment, they can nonetheless influence their surroundings when they have sufficient resources, skills, knowledge, and management tools. Local governments are at the forefront of development planning. They have primary jurisdiction over land use and development, location of local streets and roads, promotion of walkability, managing recycling and waste collection, maintaining parks and open spaces, K-12 education, housing provision, promotion of economic growth, and implementation of various social welfare programs [4]. Higher levels of government establish the policy framework within which their local governments plan development initiatives, and may provide incentives, mandates, funding, and technical resources for implementing

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many essential programs locally. Accordingly, local governments must have certain institutional capacities to diagnose and address local sustainable development challenges, implement alternative paths selected, and evaluate the effectiveness of decisions made [4,5]. Sadly, rural communities often lack resources and technical expertise to achieve sustainable outcomes. Building on this understanding of institutional sustainability, it is both timely and important to explore how these several factors at play within the distinct context of rural local governments across the Cascadia region shape sustainability efforts in these communities.

2. Institutional Sustainability Literature Review

Institutional sustainability refers to the ability of institutions, particularly local governments, to maintain and deliver services over time while adapting to changing conditions [1]. It involves not just financial management, but also governance, stakeholder engagement, and the effective coordination of resources [3]. Institutional sustainability in rural communities is an increasingly critical area of focus as governments and organizations aim to promote long-term social, economic, and environmental well-being. Unlike urban centers, rural communities often grapple with unique, locale-specific challenges that complicate the crafting and implementation of sustainability programs.

2.1. Financial and Human Resource Challenges

Rural communities often operate with significantly fewer financial and human resources than their urban counterparts. One of the primary financial hurdles these communities face is a limited tax base. Smaller populations and lower property values in rural areas result in lower overall tax revenues, restricting the ability of local governments and institutions to invest in necessary infrastructure, services, and programs. Unlike urban, centers rural areas must stretch limited funds across sparsely populated regions. This financial limitation often leads to underinvestment in essential infrastructure, such as roads, bridges, water systems, and broadband internet, further hampering economic growth and the delivery of critical services [5–7].

Modern technology solutions, such as digital governance platforms and advanced healthcare technologies, are often out of reach for these communities due to their high costs. This technological gap puts rural areas at a distinct disadvantage, making it more difficult to deliver efficient services, attract businesses, and retain younger, tech-savvy populations. Additionally, limited funds often mean that opportunities for local government staff training and professional development are scarce, leaving local government officials, healthcare providers, educators, and other essential workers less equipped to handle the challenges faced by rural communities. The difficulty in attracting and retaining skilled professionals due to lower salaries and fewer professional development opportunities further exacerbates the shortage of qualified personnel [3].

Another significant challenge for rural institutions is their heavy reliance on external funding sources, such as state and federal grants, to support their programs and services. While these funds are often essential for supplementing local budgets, they introduce a level of vulnerability. Changes in government priorities, political shifts, or economic downturns can lead to funding cuts, leaving rural communities without the support needed to sustain vital programs. The competitive nature of grant funding further complicates the situation, as smaller rural institutions often lack the expertise to compete effectively for grants against better-funded urban institutions. The complex application processes and reporting requirements associated with many grants can also be a barrier for under-resourced rural governments [2].

The heavy reliance on short-term funding cycles poses an additional challenge for rural communities. Many external funding sources are based on short-term cycles, providing support for only a few years at a time. This short-term focus can be problematic for rural institutions that require long-term, sustained investment to address deep-seated issues such as poverty, healthcare access, and economic development. When grant cycles end, rural communities are often left scrambling to find new funding sources or are forced to scale back or discontinue important programs, undermining the progress that has been made [4]. Addressing these challenges requires a concerted effort to secure stable, long-term funding sources, build local capacity, and advocate for policies that support the specific needs of rural areas.

2.2. Geographical Isolation

The geographic isolation of many rural communities presents significant challenges to institutional sustainability. These communities are often located quite far from major urban centers, which creates several obstacles that complicate their ability to enhance institutional capacity. One of the most immediate consequences of this isolation is the higher transportation costs associated with delivering goods, services, and resources to these areas. The greater distances

involved mean that the costs of transporting essential supplies, including food, medical equipment, and educational materials, are significantly higher than in urban settings [5].

Moreover, the physical distance from urban centers often results in reduced access to a range of essential services. Rural communities typically have fewer healthcare facilities, educational institutions, and social services than their urban counterparts. This limited access can have profound implications for the well-being of rural residents, who may have to travel long distances to receive medical care, attend school, or access government services. The scarcity of services in rural areas can also exacerbate social and economic disparities, leading to poorer health outcomes, lower educational attainment, and reduced economic opportunities [8].

Another critical issue stemming from geographic isolation is the difficulty in attracting and retaining skilled professionals in rural areas. The limited availability of professional development opportunities, coupled with the social and cultural amenities that are more readily available in urban settings, makes it challenging for rural institutions to compete for talent. Professionals, particularly those in specialized fields may be reluctant to relocate to rural areas due to concerns about career advancement, social isolation, and the quality of life. As a result, rural institutions often face chronic shortages of qualified personnel [9].

The isolation of rural communities also slows the diffusion of innovations and best practices. Urban centers serve as hubs of innovation, where new ideas, technologies, and approaches to problem-solving are developed and disseminated. However, the physical and social distance between rural communities and these innovation hubs can delay the adoption of new practices in rural areas. This slower diffusion process means that rural institutions may lag in implementing the latest advancements in key areas such as digital governance, healthcare, and education, which could otherwise enhance their sustainability and effectiveness [5,10].

2.3. Population Size

Smaller populations in rural areas present significant challenges to institutional sustainability, particularly due to the lack of economies of scale. In rural settings, the cost of delivering services—such as healthcare, education, and public utilities—is spread across a smaller number of people, leading to higher per capita costs. For example, maintaining a hospital or school in a rural area requires similar fixed costs as in an urban area, but with fewer residents to share these expenses, the financial burden on local governments and institutions is considerably higher [4].

This demographic factor also significantly limits the local tax base, which is a critical source of revenue for funding public services and essential infrastructure. In urban areas, larger populations and higher property values generate more substantial tax revenues, enabling larger municipalities to invest in extensive public services and infrastructure projects. In contrast, rural communities generate far less tax revenue. This limited revenue stream forces rural governments to make difficult choices. For instance, roads and public transportation systems in rural areas may receive minimal maintenance, leading to deterioration that further isolates these communities and hinders economic development [11].

Additionally, smaller communities often have little political influence at the state and federal levels, making it difficult for them to advocate and lobby for support. Political representation is based primarily on population size, meaning that sparsely populated rural areas have fewer representatives in state legislatures and Congress. This underrepresentation can lead to rural interests being overlooked in favor of urban priorities, particularly when it comes to the allocation of funding. The combination of limited political influence and reduced access to external funding further exacerbates the challenges faced by rural areas [3].

The implications of these challenges are far-reaching. Without adequate funding and limited political support, rural communities struggle to invest in essential infrastructure such as broadband internet which is increasingly critical for economic development and access to services in the digital age. The lack of infrastructure and services can spur population decline, as residents move to urban areas in search of better opportunities and quality of life. This outmigration further reduces the population and tax base of rural areas, often giving rise to a vicious cycle that undermines the long-term sustainability of these communities [6].

3. Structural and Cultural Similarities and Differences in Cascadia

The regions encompassing the U.S. states of Oregon and Washington, and the Canadian province of British Columbia, are often regarded as an ecologically distinctive and naturally definable area known as “Pacific West” or “Cascadia”. These three political entities share similarities in terms of population, their wealth of natural resources, and a common sense of geographical isolation from the core cultural hubs of their respective nations. Despite these parallels, there are notable differences. Over the course of two centuries, Canada and the U.S. have developed distinct political

structures, processes, norms, and values within their shared traditions [6,12–15]. Canada has a more deferential, organic, communalistic, and particularistic political culture that tends to be more supportive and respectful of government. In contrast, the U.S. exhibits an individualistic and entrepreneurial political culture, often marked by great skepticism toward government [16,17].

A more nuanced perspective on Canadian and American political cultures acknowledges significant regional differences within these two countries. For example, Reese and Rosenfeld found that western Canadian and U.S. cities exhibited regional similarities that transcend many national differences [18]. Pierce *et al*. also suggest that there is a common 'Far West' element in public attitudes in both BC and Washington regarding concepts of citizenship, views of the natural world, and perceptions of appropriate governance [16].

There are institutional differences to be noted as well. Oregon and Washington have state bicameral legislatures and independently elected executives, while BC employs a parliamentary system. Similarities and differences obtain in local government as well. In Oregon, local governments include counties, cities and towns, special districts, school districts, regional councils, a metropolitan service district in the Portland metropolitan area (*i.e.*, "Metro"), and public-school districts, each with authority to provide services and raise revenue. Oregon is considered a "home rule" state where local governments enjoy significant autonomy as long as their actions do not violate the state constitution [19]. Cities in Oregon are governed by an elected mayor (which can be a strong mayor or weak mayor) and a city council or commission.

Similarly, Washington's system of local government is subdivided into counties, cities and municipalities, special districts, school districts, and regional councils and associations. As with Oregon, cities operate under either mayor-council, council-manager, or commission systems. Mayors can also be either weak or strong *vis-a-vis* their executive powers and are elected city-wide; councils can be elected either at-large or by district. Washington cities also can offer a variety of services and raise revenues to pay for those services. Washington also grants home rule to its cities, providing them the authority to adopt their own charters and local ordinances as long as they are not violative of the state constitution [20].

In contrast, BC's local governments are subdivided into municipalities and regional districts. Municipalities such as cities, towns, and villages have elected councils and mayors. Regional districts are modeled as a federation composed of municipalities, electoral areas (unincorporated communities), and, in some cases, Treaty First Nations, each of which has representation on the regional district board. BC's local governments provide essential services such as water supply, sewage treatment, land use planning, and municipal policing within their jurisdictions. The provincial government is responsible for areas such as healthcare, education, transportation, natural resources, and environmental regulations. Local governments derive their authority from the Local Government Act and Community Charter. Local governments rely on property taxes, user fees, and provincial grants to fund their operations and services [21].

4. State and Provincial Institutional Sustainability Policies

Institutional sustainability is a critical focus for state and provincial governments, particularly in addressing the many challenges faced by rural communities. As noted, these regions often contend with limited resources, geographic isolation, and the need for tailored economic and social development strategies. To support these communities, Oregon, Washington, and BC have each implemented a range of policies and programs aimed at enhancing local institutional sustainability. These initiatives are designed to build local capacity, support infrastructure development, and foster economic resilience, ensuring that rural areas can thrive in the face of ongoing challenges. This section provides a brief overview of key programs, highlighting their objectives, impacts, and the challenges they face in achieving long-term sustainability.

4.1. British Columbia

BC has recognized the many challenges faced by its rural communities and has implemented several major initiatives aimed at enhancing institutional sustainability. One key program in this regard is the Rural Dividend Fund, established to support the economic development and resilience of rural communities across the province. The fund was designed to provide ongoing financial assistance to small rural communities with populations of 25,000 or less, enabling them to diversify their local economies and create new opportunities for growth and sustainable development [21]. The fund offers grants to rural communities to promote economic diversification and community resilience. These projects most often include initiatives to develop local infrastructure, support small business development, promote tourism, and enhance workforce skills. For example, many communities have used the funding to invest in broadband internet infrastructure, which is critical for enabling rural businesses to compete in the digital economy and for residents to access essential services such as telehealth and online education [22].

In addition to direct financial support, the fund also provides capacity-building resources to help rural communities implement sustainable economic development strategies. This includes technical assistance for project planning, the provision of access to best practices, and opportunities for collaboration with other communities and stakeholders. By building local capacity, the program aims to ensure that rural communities are not only able to initiate projects but also to sustain them over the long term [22]. However, the program has encountered noteworthy challenges, most particularly in securing long-term funding. The fund was suspended temporarily in 2019, and its future remains uncertain as the provincial government reviews its approach to rural development. The suspension created uncertainty for many rural communities that rely on the fund to support their economic development initiatives [23].

Moreover, while the fund has had positive impacts on many rural communities, there have been concerns about the equity of distribution of grants. Some smaller remote communities have found it difficult to compete for funding due to a lack of administrative capacity and expertise in grant writing. The provincial government has acknowledged these challenges and is exploring ways to improve the accessibility and impact of its rural development programs.

4.2. Oregon

Oregon's *Rural Capacity Development* program is a key initiative designed to enhance the governance capacity of rural communities across the state. By focusing on building governance capacity through targeted training and technical assistance, the program aims to empower rural communities to manage effectively their sustainability initiatives and other critical projects that are vital for their economic and social well-being [24]. One of the primary goals of the program is to equip local government officials, community leaders, and other stakeholders with the skills and knowledge necessary to navigate the complexities of modern governance. This includes training in areas such as strategic planning, financial management, grant writing, and community engagement [25].

In addition to training, the program provides technical assistance to help rural communities address specific challenges related to sustainability and development. This support often involves collaboration with experts from state agencies, universities, and non-profit organizations who can offer specialized knowledge in areas such as environmental management, economic development, and public health. For example, rural communities in Oregon have received assistance in developing renewable energy projects, improving water resource management, and enhancing access to healthcare services [24].

The program also emphasizes the importance of building networks and partnerships among rural communities, as well as between rural and urban areas. By fostering collaboration and knowledge sharing, the program helps to bridge the gap between isolated rural communities and larger, more resource-rich urban centers. For example, the program has facilitated partnerships between rural and urban hospitals to improve healthcare delivery in remote areas and has connected rural economic development agencies with urban business incubators to support local entrepreneurship [26].

Moreover, the program has a strong focus on sustainability. This focus includes helping communities to develop sustainability plans that incorporate environmental, social, and economic considerations. By integrating sustainability into the core of their governance practices, small rural communities are better equipped to thrive in the face of ongoing challenges such as climate change, economic shifts, and demographic changes such as aging and lower rates of family formation [23].

Despite the program's successes, ongoing challenges need to be addressed to ensure its continued effectiveness. One of the main issues is the availability of consistent funding to support long-term capacity-building efforts. While the program has been successful in securing state and federal grants, there is a need for more stable funding sources to sustain these initiatives over time. Additionally, the program must continue to adapt to the evolving needs of rural communities, particularly as they face new challenges related to the digital transformation of commerce and communications systems and the impacts of climate change [25].

4.3. Washington

In Washington State, the Community Economic Revitalization Board (CERB) plays a pivotal role in supporting rural communities by providing funding for infrastructure projects that are essential for sustainable development. Established in 1982, the CERB's primary mission is to foster economic development across the state, with a particular focus on "rural and underserved areas". The board provides low-interest loans and grants to local governments and federally recognized tribes for the purpose of building infrastructure that supports private business growth and stimulates job creation. These infrastructure projects are vital for modernizing rural economies and ensuring their long-term viability in a rapidly changing economic landscape [27].

One of the key areas of focus for the CERB is broadband expansion, which has become increasingly critical for rural communities. Broadband access is no longer a luxury, but rather a necessity for participating in the modern economy, accessing education and healthcare services, and maintaining social connections. In many rural areas of Washington, however, broadband infrastructure is either inadequate or entirely lacking. The CERB has been instrumental in addressing this gap—often referred to as the "digital divide"—by funding projects that expand high-speed internet access to rural and remote areas (Washington State Department of Commerce, 2020). Beyond broadband, the CERB also supports a wide range of other infrastructure projects such as the rehabilitation of roads, bridges, water and sewer systems, and industrial parks. For instance, CERB funding has been used to upgrade water and wastewater treatment facilities in rural communities, ensuring that these communities have the necessary infrastructure to support growth while protecting the environment [27].

CERB's approach to funding is strategic, aiming to leverage public investments to attract private sector investments. This public-private partnership model often has been effective in generating economic growth in rural areas. For example, the CERB's investment in infrastructure often serves as a catalyst for private sector projects, such as the development of new food processing or manufacturing facilities or the expansion of existing businesses [28]. The CERB's ability to continue supporting rural development will depend on its capacity to secure additional funding and to adapt its strategies to the evolving needs of these rural communities [27–29].

5. Methods

To identify the presence of institutional sustainability programs and plans in small and rural local governments, a database was created by collecting lists, emails, and addresses of all cities, towns, and villages (and districts in BC) with populations of 30,000 or less, excluding First Nations and Native American local governments. A short mail survey featuring an online option was then constructed drawing on previous surveys conducted in the region in 2012 and 2016. The survey design and implementation followed Dillman's Tailored Design Method and web-push strategy, involving two waves of mailings followed by a final email reminder offering an online survey (Qualtrics) option [30]. The survey was fielded during late summer and early fall in 2023 and included a cover letter and a mail survey displaying a URL and QR code for accessing the online version. Researchers from the University of Victoria, Washington State University, and Oregon State University signed the cover letter, providing personal contact information to increase response rates, along with a postage-prepaid return envelope.

Surveys were sent to the mayors in all three study sites. Mail surveys from Oregon and Washington were returned to Oregon State University, while those from BC were returned to the University of Victoria. Two weeks after the first wave was sent, local governments that had not completed either the mail or online survey were sent an additional mail survey with a hand-signed cover letter and a postage-prepaid return envelope. Finally, email reminders were sent to local governments that had not responded to the first two survey waves when email addresses were available (web-push aspect of the Dillman survey methodology). The survey was designed to be completed in 15 min or less, with pre-tests indicating that the average respondent took approximately 13 min to complete the online version. The Human Research Ethics team at the University of Victoria and the Institutional Review Board at Oregon State University both classified this research project as "Exempt" due to the use of publicly available data on public officials in the Cascadia region.

Response rates for the survey are robust. In BC, 136 local governments with populations of 30,000 or less were identified, of which 84 completed the survey (61.8% response rate). In Oregon, 226 cities were surveyed, with 117 completing the survey process (51.8% response rate). In Washington, 324 local governments were sent surveys, with 163 completions (50.1% response rate). Table 1 displays population data. BC had the largest average population size in 2020 ($\bar{x}$ = 6178.01), ranging from 199 to 28,568. Oregon had the second-largest average size ($\bar{x}$ = 5589.49) with a range of 50 to 29,421, while the average responding city in Washington had 4816.67 residents with a range of 52 to 27,202. Population change between 2010 and 2020 was also calculated for the responding cities, with Washington experiencing the highest average growth at 9%, followed by British Columbia at 8.6%, and Oregon at 7.6%.

Table 1. Population Characteristics of Responding and Non-responding Local Governments.

	Population 2010	**Population 2020**	**Population Change**	**Remoteness Index**
	Mean (*s.d.*)	Mean (*s.d.*)	Mean (*s.d.*)	Mean (*s.d.*)
		British Columbia		
Respondents (n = 84)	5611.92 (5752.27)	6178.01 (6483.96)	8.6% (0.1846)	0.3562 (0.1367)
Non-respondents (n = 52)	5820.79 (6185.96)	6366.48 (6897.22)	9.4 (0.2159)	0.3449 (0.1447)
F-test =	0.040	0.026	0.049	0.206
Sig =	0.842	0.873	0.825	0.651
		Oregon		
Respondents (n = 118)	5057.03 (6764.23)	5531.53 (7477.82)	7.6% (0.0921)	0.5028 (0.0812)
Non-respondents (n = 108)	5253.63 (6900.05)	5742.96 (7627.03)	9.2% (0.0917)	0.5029 (0.0798)
F-test =	0.047	0.044	0.006	0.023
Sig =	0.829	0.834	0.937	0.880
		Washington		
Respondents (n = 163)	4236.75 (5313.61)	4846.67 (6223.66)	9.0% (0.1047)	0.4650 (0.0873)
Non-respondents (n = 161)	4232.22 (5345.45)	4843.54 (6271.29)	9.1% (0.1050)	0.4684 (0.0868)
F-test =	0.001	0.001	0.003	0.121
Sig =	0.994	0.996	0.956	0.728

The final variable included in Table 1 is an index of *remoteness* (Canada) and an index of *relative rurality* (U.S.), indicating how distant a rural community is from major population centers. For both Canada and the U.S., the indices both range from 0 for areas that are very close to urban centers and services and 1 for the most remote areas. Oregon has the highest mean index score at 0.5028, followed by Washington at 0.4650 and BC at 0.3562. While BC (944,735 km^2) is a significantly larger land mass when compared to either Oregon (254,806 km^2) or Washington (184,827 km^2), most rural communities in BC are in the more densely populated lower mainland region (Vancouver, Victoria and Kelowna), leading to a lower mean index score [31]. Oregon, in contrast, has large rural areas in central and eastern parts of the state without any significant population centers and many small, remote scattered rural agricultural communities [24]. Table 1 also provides information comparing responding and non-responding small local communities to detect any potential response bias. For all three of the population variables and the remoteness indicator included in the table, there are no statistically significant differences between responding and non-responding communities in BC, Oregon and Washington.

6. Findings

Key indicators of institutional sustainability include grant writing services [32], conflict resolution programs [33], risk management [34], E-Government initiatives [35], strategic planning [36], and program evaluation services [37]. These programs help local governments to secure essential funding, manage risks, resolve conflicts, streamline operations through technology, and assess and improve their services on an ongoing basis. By integrating these elements into their operations, local governments not only enhance their capacity to serve their communities, but also promote their resilience and adaptability in the face of future challenges. Questions about these programs were included in the survey; Table 2 provides descriptions of the programs. Mayors were posed the following question: Please indicate if you have or do not have a plan, program or policy in place to promote Institutional sustainability (1 = Yes, 2 = No, 3 = In Consideration).

Table 2. Institutional Sustainability Programs.

Grant Writing Services	Grant writing services are crucial for securing external funding, which can enhance the financial stability of local governments. Access to diverse funding sources allows local governments to sustain operations, invest in community programs, and innovate.
Conflict Resolution Programs	Conflict resolution programs help local governments manage internal and external disputes, fostering a collaborative and stable environment. Effective conflict resolution reduces the potential for disruptions, enhances public trust, and contributes to a cohesive workforce.
Risk Management	Risk management programs enable local governments to identify, assess, and proactively mitigate risks that could threaten their operations and services.
E-Government	E-Government initiatives modernize local government operations by leveraging technology to improve service delivery, transparency, and citizen engagement. By streamlining processes and making government services more accessible,
Strategic Plans	Strategic planning is essential for setting long-term goals, prioritizing resources, and guiding decision-making. A well-developed strategic plan helps local governments navigate challenges, adapt to changing circumstances, and align their actions with community needs and expectations.
Program Evaluation Services	Program evaluation services allow local governments to assess the impact, efficiency, and effectiveness of their programs. Continuous evaluation and feedback lead to better decision-making and program improvement.

The survey results for the three Cascadia region jurisdictions are presented in Table 3. The survey revealed that Oregon leads in the implementation of grant writing services, with 77.1% of its communities reporting that these services are in place. Additionally, 6.8% of Oregon communities are considering adopting such services. Washington follows, with 65.0% of the rural communities having established grant writing services and 12.3% considering their implementation. BC lags, with 53.6% of its rural communities reporting having these services in place, and only 3.6% considering them. The significant difference across the regions was highlighted by a Chi-Square value of 24.387, with a *p*-value of 0.001, indicating a statistically significant disparity.

Table 3. Presence of Local Government Institutional Sustainability Programs and Policies.

Question: **Please Indicate If You Have or Do Not Have a Plan, Program or Policy in Place to Promote Institutional Sustainability [1 = Yes, 2 = No, 3 = In Consideration]**						
	British Columbia		Oregon		Washington	
	Yes	In Consideration	Yes	In Consideration	Yes	In Consideration
Plan/Program						
Grant Writing Services	53.6%	3.6%	77.1%	6.8%	65.0%	12.3%
Chi-Square =	24.387, $p = 0.001$					
Conflict Resolution Program	26.2%	0.0%	75.4%	11.0%	59.5%	12.9%
Chi-Square =	87.722, $p = 0.001$					
Risk Management	76.2%	1.2%	75.4%	8.5%	63.8%	9.2%
Chi-Square =	10.888, $p = 0.028$					
E-government	40.5%	7.1%	90.7%	3.4%	74.8%	12.9%
Chi-Square =	87.214, $p = 0.001$					
Strategic Plan	94.0%	4.8%	78.0%	11.0%	68.1%	10.4%
Chi-Square =	25.035, $p = 0.001$					
Program Evaluation Services	34.5%	7.1%	71.2%	11.0%	58.9%	16.6%
Chi-Square =	45.725, $p = 0.001$					
Mean Number of Plans =	3.250		4.678		3.901	
F-test =	16.109, $p \leq 0.001$					

Conflict resolution programs employing trained facilitators are helpful for managing disputes and bringing stakeholders together to resolve differences. Oregon again leads in this area with 75.4% of its rural communities having programs, and 11.0% considering adoption. Washington shows a similar trend, with 59.5% of its communities having programs, and another 12.9% considering them. BC shows *much lower engagement* in this area, with only 26.2% of its communities having programs, and none currently considering them. The disparity among the three jurisdictions produces a Chi-Square value of 87.722 and a *p*-value of 0.001, indicating a highly significant difference in the presence of conflict resolution programs.

Risk management programs, which identify and proactively mitigate potential threats to community sustainability, show a strong presence across all three jurisdictions. BC leads slightly with 76.2% of its rural communities having risk management programs in place, and another 1.2% considering them. Oregon follows closely, with 75.4% of communities reporting the presence of these programs, and another 8.5% considering them. Washington has 63.8% of its communities with risk management programs in place, and another 9.2% considering adoption. The Chi-Square analysis revealed a significant difference in the presence of risk management programs across the three jurisdictions, with a value of 10.888 and a *p*-value of 0.028.

E-Government initiatives involving the use of digital technologies to improve public services and citizen engagement, are once more most prevalent in Oregon where 90.7% of its communities having implemented initiatives, and another 3.4% considering adoption. Washington follows, with 74.8% of its communities having E-Government services in place, and another 12.9% considering them. In BC, 40.5% of small rural communities reported having E-Government initiatives, and another 7.1% considering implementation. The Chi-Square value of 87.214 and a *p*-value of 0.001 indicate a statistically significant difference in the adoption of E-Government across the three jurisdictions.

Strategic planning is essential for setting long-term goals and ensuring the effective allocation of resources to achieve those goals. The survey results show that BC leads in this area, with 94.0% of its communities having strategic plans in place, and another 4.8% considering them. Oregon follows with 78.0% of its communities having such plans, and another 11.0% which are considering their adoption. In Washington, 68.1% of its communities have strategic plans in place, with another 10.4% considering development. The Chi-Square analysis produced a value of 25.035 with a *p*-value of 0.001, indicating a significant difference in the presence of strategic planning across the three jurisdictions.

Program evaluation services, which assess the effectiveness and impact of local government programs, show varied implementation across the three jurisdictions. Oregon again leads, with 71.2% of its communities having programs in place, and another 11.0% considering them. Washington follows suit with 58.9% of its communities having access to these services, and another 16.6% considering adoption. BC shows a lower level of engagement, with only 34.5% of its communities reporting the presence of program evaluation services, and another 7.1% considering them. The Chi-Square value of 45.725 and a *p*-value of 0.001 indicate a quite significant difference across the three jurisdictions.

The survey results underscore the substantial variability in the level of adoption of institutional sustainability programs across small and rural communities in BC, Oregon, and Washington. Oregon consistently demonstrates higher rates of both program presence and implementation compared to BC and Washington. This trend is evident in the higher mean number of institutional sustainability plans in Oregon (Mean = 4.678), compared to Washington (Mean = 3.901) and BC (Mean = 3.250), with an *F*-test yielding a statistically significant *p*-value of less than 0.001. These findings suggest that while all three jurisdictions in the Cascadia region are engaged in efforts to promote institutional sustainability, the extent and focus of these efforts vary significantly, most likely reflecting differences in local priorities, the availability of resources, and the governance strategies being employed by current leaders.

The observed differences in program adoption between the BC and Oregon and Washington may well be due to the previous discussion on the differing political culture and governance systems found in Canada and the U.S. The governance structure in BC is substantially more centralized compared to Oregon and Washington. BC local governments derive their authority from the provincial government through the Local Government Act and Community Charter. This centralized structure might limit the autonomy and flexibility of BC local governments in implementing various sustainability promoting programs. The reliance on provincial grants and a more hierarchical governance system could also mean that local governments in BC have less direct control over funding and program implementation. Both Oregon and Washington operate under a more decentralized "home rule" system, one which grants significant autonomy to local governments. This allows cities, counties, and special purpose districts in these states to adopt and implement a wider range of programs tailored to their specific needs, including the institutional sustainability programs inquired about in the survey. The decentralized systems present in Oregon and Washington foster innovation and responsiveness at the local level, which may explain the higher adoption rates of programs such as grant writing services, conflict resolution programs, and E-Government initiatives.

The Canadian political culture, as described, tends to be more deferential and supportive of government, with a focus on communalistic and particularistic values. This political culture legacy might result in a more top-down approach to governance, where local governments are more dependent on provincial directives and less inclined to develop independent sustainability initiatives. The U.S. political culture is broadly described as more individualistic and entrepreneurial, with a large degree of skepticism/mistrust toward virtually all forms of government. This cultural framework supports a more bottom-up approach, where local governments often take the initiative in adopting programs

that meet the unique needs of their communities. The emphasis on innovation and local autonomy could explain why Oregon and Washington have higher adoption rates for programs requiring local initiative and resourcefulness.

Local governments in BC are divided into municipalities and regional districts, with their roles and responsibilities clearly delineated by the provincial government. The province's focus on essential services such as water supply, sewage and wastewater treatment, and land use planning might limit the scope of institutional sustainability programs at the local level as these governments are primarily focused on core services. The diverse structure of local governments in Oregon and Washington provides multiple layers of governance that can implement a wide variety of programs. The existence of metropolitan service districts and Councils of Governments (COGs) in Oregon, for example, allows for coordinated regional efforts, including sustainability initiatives. The flexibility in local governance structures likely contributes to the higher adoption rates of diverse programs across these three jurisdictions.

7. Multivariate Analyses

Our literature review leads to the identification of several common barriers to the adoption of sustainability programs in rural communities, including population size and growth, remoteness, and various economic considerations. These potential barriers to institutional sustainability program development and plan adoption will be considered next using multivariate statistical techniques. The independent variables relating to common barriers are described in Table 4. These include population change from 2010 to 2020, an index of remoteness of the community, [1] a dummy variable for local government type, survey questions concerning local governments' budgets, [2] and if the local government has had to cut any services due to population change. [3]

Table 4. Independent Variables—Hypothesized Barriers to Institutional Sustainability.

		British Columbia	**Oregon**	**Washington**	**Total**
Variable	Variable Description	Mean (*s.d.*)	Mean (*s.d.*)	Mean (*s.d.*)	Mean (*s.d.*)
Population Change 2010 to 2020 (*n* = 365)	Population Change Using Statistics Canada and U.S. Census Population Estimates for Local Governments	0.09 (0.18)	0.08 (0.09)	0.08 (0.12)	0.08 (0.12)
Remoteness (*n* = 365)	Index of Relative Rurality (U.S.)/Remoteness Index (Canada) [0.00 = completely urban to 1.00 = completely remote]	0.36 (0.14)	0.50 (0.08)	0.46 (0.09)	0.45
Government Type (*n* = 365)	Government Type [1 = city, 0 = town, village, township, district]	0.24	0.97	0.65	0.66
Revenues Increasing (*n* = 365)	Revenues collected through taxes have increased over the last 5 years [1 = Strongly Disagree to 5 = Strongly Agree]	3.99 (0.65)	3.10 (1.28)	3.40 (1.07)	3.44 (1.11)
Inflation Impact (*n* = 365)	Inflation has significantly affected ability to balance budget last 2 years [1 = Strongly Disagree to 5 = Strongly Agree]	3.99 (0.67)	3.31 (1.29)	3.33 (1.02)	3.47 (1.09)
Reduce Services (*n* = 365)	In last 5 years services were reduced or eliminated in response to population growth/decline [1 = Yes, 0 = No]	0.09	0.28	0.33	0.26

The average population change in small and rural communities in BC was 9% over the decade, with a standard deviation of 0.18. This higher variability indicates a more significant fluctuation in population growth or decline across different communities within BC. The average population change in Oregon was slightly lower at 8%, with a lower standard deviation of 0.09. This suggests more uniform population trends in rural Oregon communities compared to BC. Similarly, Washington had an average population change of 8%, with a standard deviation of 0.12. The variability here is moderate, indicating a somewhat more diverse range of population changes than Oregon, but less than BC. When aggregated, the average population change across all regions was 8%, with a standard deviation of 0.12, reflecting a general trend of population stability with some regional variations within each jurisdiction.

BC communities had a mean remoteness score of 0.36 (*s.d.* = 0.14), indicating that, on average, small rural communities in BC were less remote than those in Oregon and Washington. This lower score suggests a greater urban influence and/or closer proximity to urban centers. Oregon had a higher average remoteness score of 0.50 (*s.d.* = 0.08), reflecting a higher degree of remoteness. Washington's average remoteness score was 0.46 (*s.d.* = 0.09), placing it between BC and Oregon. The communities here are somewhat remote, but not nearly as isolated as those in Oregon. The overall mean remoteness score for the three regions was 0.45, with Oregon contributing disproportionately to a higher overall remoteness index.

In BC, only 24% of the local governments are classified as cities, with the remaining 76% being towns, villages, townships, or districts. This lower percentage of cities might suggest fewer resources and infrastructure for

implementing sustainability programs. Oregon stands out with 97% of its local governments being classified as cities, suggesting a strong governance presence, which could be advantageous for adopting sustainability initiatives. Washington also shows a high percentage (65%) of city governments, though not as high as Oregon. This indicates a significant governance presence, but with more rural or less urbanized local governments compared to Oregon. Across all three jurisdictions, cities make up 66% of the local governments, reflecting a predominance of urban governance structures that might support sustainability efforts, with BC being an outlier with a higher proportion of rural governance structures.

BC communities reported a mean score of 3.99 (*s.d.* = 0.65) regarding the increase in revenues over the past five years, suggesting that most local governments in BC have seen modest revenue growth. Oregon's mean score was lower at 3.10 *(s.d.* = 1.28), indicating that many communities in Oregon have not experienced significant revenue increases, potentially hindering their ability to fund new programs. Washington's score of 3.40 (*s.d.* = 1.07) suggests a moderate increase in revenues, better than Oregon but not as strong as BC. The overall mean score for revenue increases across the regions was 3.44, with BC leading in financial stability

Communities in BC reported a mean score of 3.99 (*s.d.* = 0.67) for the impact of inflation on their budgets, straining their financial resources. Oregon's mean score was 3.31 *(s.d.* = 1.29), suggesting that inflation has also impacted Oregon's communities, though the effect appears to be slightly less severe than in BC. Washington communities reported a mean score of 3.33 (*s.d.* = 1.02), indicating moderate financial strain due to inflation. Across the three jurisdictions, the average score for inflation impact was 3.47, reflecting a rather significant challenge posed by inflation, particularly in BC.

Only 9% of BC's communities reported having reduced their services in response to population changes, indicating a relatively stable provision of services, possibly due to the financial stability seen in revenue increases. In contrast, 28% of Oregon communities have had to reduce services, reflecting greater economic or demographic pressures that could interfere in a major way with the implementation of sustainability programs. Washington reported the highest percentage, with 33% of its small rural communities reducing services, indicating significant challenges in maintaining service levels in response to population dynamics. The overall percentage of communities reducing services across the three jurisdictions was 26%, with Washington and Oregon showing higher tendencies towards service reduction, possibly due to greater economic pressures and more dramatic population and demographic changes.

Table 5 presents binary logistic regression models predicting the presence of three types of institutional programs—Grant Writing, Conflict Resolution, and Risk Management—in small rural communities in British Columbia (BC), Oregon (OR), and Washington (WA). In this analysis, BC is used as the reference category (*i.e.*, the omitted dummy variable), meaning that the results for OR and WA are compared against the baseline of BC.

Table 5. Binary Logistic Regression Estimates for Grant Writing, Conflict Resolution, and Risk Management Programs [1 = program in place, 0 = either no program or in consideration].

	Grant Writing	**Conflict Resolution**	**Risk Management**
	Coefficient (Std. Error) Exp(B)	Coefficient (Std. Error) Exp(B)	Coefficient (Std. Error) Exp(B)
OR Dummy	1.507 ** (0.531) 4.513	19.79 *** (0.543) 7.233	0.360 (0.620) 1.433
WA Dummy	0.592 (0.435) 1.808	0.969 * (0.447) 2.635	−0.549 (0.524) 0.577
City Dummy	−0.235 (0.162) 0.790	−0.667 *** (0.183) 0.513	−0.152 (0.206) 0.859
Remoteness	−1.924 (1.324) 0.146	−2.894 * (1.440) 0.055	−2.736 (1.611) 0.065
Population Change	1.315 (1.202) 3.725	2.418 * (1.122) 11.225	7.486 *** (2.029) 1782.028
Revenue Increase	0.507 *** (0.127) 1.768	0.461 *** (0.127) 1.585	0.359 ** (0.131) 1.432
Inflation	−0.321 **	−0.582 ***	−0.200

	(0.125)	(0.158)	(0.127)
	0.725	0.679	0.819
	−0.165	0.174 *	−0.467
Reduced services	(0.290)	(0.087)	(0.297)
	0.848	1.549	0.627
Chi-square =	62.385	113.807 ***	82.596 ***
Cox and Snell R^2 =	0.157	0.268	0.203
Nagelkerke R^2 =	0.218	0.360	0.288
Percent Correct =	70.4	74.0	78.4
N =	365	365	365

Significance levels: * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$.

The regression model predicting the presence of grant writing programs in small and rural communities demonstrates several key results. The overall model is statistically significant, as indicated by a chi-square value of 62.385. This value signifies that the regression model is significantly better at predicting the presence of grant writing programs than a model with no predictors. The model's pseudo-R-squares are modest, with a Cox and Snell R^2 of 0.157 and a Nagelkerke R^2 of 0.218. This model explains between 15.7% and 21.8% of the variance in the presence of grant writing programs, and correctly classifies 70.4% of the cases.

As for the individual predictors for hypothesized barriers, the Oregon dummy variable has a significant and positive coefficient (1.507, $p < 0.01$), with an Exp(B) of 4.513. This finding indicates that communities in Oregon are over four times more likely to have a grant writing program compared to those in BC. The Washington dummy is not significant, indicating no substantial difference between Washington and BC. Other significant predictors include revenue increases (Exp(B) = 1.768, $p < 0.001$) and inflation (Exp(B) = 0.725, $p < 0.01$), with the latter having a negative impact on the likelihood of having a grant writing program.

The regression model for conflict resolution programs is highly significant, with a chi-square value of 113.807 ($p < 0.001$), indicating strong predictive power. The pseudo-R-squares are higher compared to the grant writing model, with a Cox and Snell R^2 of 0.268 and a Nagelkerke R^2 of 0.360. The model explains between 26.8% and 36.0% of the variance in the presence of conflict resolution programs. The model's accuracy is also higher, correctly classifying 74.0% of the cases. In this model, both the Oregon and Washington dummy variables are significant. The Oregon dummy (Exp(B) = 7.233, $p < 0.001$) indicates that communities in Oregon are over seven times more likely to have a conflict resolution program compared to those in BC. The Washington dummy is also significant (Exp(B) = 2.635, $p < 0.05$), indicating that Washington communities are more than twice as likely to have such a program than BC. Additionally, population change (Exp(B) = 11.225, $p < 0.05$) and revenue increases (Exp(B) = 1.585, $p < 0.001$) are significant positive predictors. Remoteness (Exp(B) = 0.055, $p < 0.05$) has a strong negative impact.

The regression model predicting the presence of risk management programs also shows statistically significant results, with a chi-square value of 82.596 ($p < 0.001$). The pseudo-R-squares are lower than those of the conflict resolution model, but still indicate a moderate level of explanatory power with a Cox and Snell R^2 of 0.203 and a Nagelkerke R^2 of 0.288. This regression model correctly classifies 78.4% of the cases, making it the most accurate among the three models. The significant predictors in this model include population change, which has a very large Exp(B) of 1782.028 ($p < 0.001$), indicating that communities experiencing significant population changes are extremely likely to have risk management programs. Revenue increases also positively predict the presence of these programs (Exp(B) = 1.432, $p < 0.01$). In contrast, neither of the jurisdictional dummy variables (Oregon and Washington) are significant. The remoteness variable, while not statistically significant, shows a noteworthy negative trend (Exp(B) = 0.065).

Table 6 presents the results of three binary logistic regression models that predict the likelihood of small and rural communities in BC, Oregon, and Washington having e-government, strategic planning, and program evaluation services. Once again, BC is used as the reference category, meaning that the results for OR and WA are compared against a BC baseline.

Table 6. Binary Logistic Regression Estimates for E-government, Strategic Plan, and Program Evaluation Services [1 = program in place, 0 = no program or in consideration].

	E-Government	**Strategic Plan**	**Program Evaluation Services**
Variables	Coefficient (Std. Error) Exp(B)	Coefficient (Std. Error) Exp(B)	Coefficient (Std. Error) Exp(B)
OR Dummy	3.118 *** (0.602) 22.608	−1.134 (0.876) 0.322	1.848 *** (0.511) 6.347
WA Dummy	1.849 *** (0.469) 6.350	−1.889 ** (0.760) 0.151	1.044 (0.431) 2.840
City Dummy	−0.311 (0.165) 0.732	0.001 (0.299) 1.001	−0.187 (0.166) 0.829
Remoteness	−3.541 ** (1.426) 0.029	−0.925 * (2.008) 0.396	−1.737 (1.375) 0.176
Population Change	0.895 (1.101) 2.448	7.134 ** (2.334) 1253.915	5.213 *** (1.615) 183.681
Revenue Increase	0.021 (0.150) 1.022	0.296 * (0.143) 1.345	0.321 ** (0.119) 1.379
Inflation	−0.188 (0.151) 0.828	−0.211 (0.140) 0.810	−0.190 (0.116) 0.827
Reduced services	−1.349 (0.330) 0.259	−1.363 * (0.306) 0.256	0.107 (0.287) 1.113
Chi-square =	103.046 **	95.555 ***	76.779 ***
Cox and Snell R^2 =	0.246	0.230	0.190
Nagelkerke R^2 =	0.354	0.350	0.255
Percent Correct =	79.7	81.6	71.8
N =	365	365	365

Significance levels: * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$.

The regression model predicting presence of e-government programs in small rural communities is highly significant, with a chi-square value of 103.046 ($p < 0.001$). This indicates that the model has strong predictive power. The pseudo-R-squares are relatively high, with a Cox and Snell R^2 of 0.246 and a Nagelkerke R^2 of 0.354, explaining between 24.6% and 35.4% of the variance in the presence of e-government programs. The model is robust, correctly classifying 79.7% of the cases.

Among the predictors, the Oregon dummy variable is the most significant, with a coefficient of 3.118 ($p < 0.001$) and an Exp(B) of 22.608. Small rural communities in Oregon are over 22 times more likely to have an e-government program compared to those in BC. The Washington dummy is also significant (Exp(B) = 6.350, $p < 0.001$), documenting that Washington communities are over six times more likely to have such programs than BC. Remoteness negatively affects e-government program adoption with an Exp(B) of 0.029 ($p < 0.01$), indicating that more remote communities are far less likely to have these programs. Population change and revenue increases do not have significant effects in this model.

The regression model predicting the presence of strategic plan programs is also statistically significant, with a chi-square value of 95.555 ($p < 0.001$). The pseudo-R-squares for this model are 0.230 (Cox and Snell R^2) and 0.350 (Nagelkerke R^2), and the model explains between 23.0% and 35.0% of the variance in strategic plan program adoption. The model correctly classifies 81.6% of the cases, making it the most accurate among the model results set forth in Table 6. In this model, the Oregon dummy variable is not significant, suggesting no substantial difference between Oregon and BC regarding strategic plan program adoption. However, the Washington dummy is significant and negatively associated with the presence of strategic plan programs (Exp(B) = 0.151, $p < 0.01$), indicating that small rural communities in Washington are less likely to have such programs compared to those in BC. Population change is a strong positive predictor, with a very high Exp(B) of 1253.915 ($p < 0.01$)., Communities experiencing substantial population growth are significantly more likely to have strategic plan programs. Revenue increases also positively affect the likelihood of adoption (Exp(B) = 1.345, $p < 0.05$). Remoteness has a marginal negative effect, but it is not significant.

The regression model for program evaluation services also shows strong significance, with a chi-square value of 76.779 ($p < 0.001$). The pseudo-R-squares for this model are lower than those for the other two models, with a Cox and Snell R^2 of 0.190 and a Nagelkerke R^2 of 0.255, and the model explaining between 19.0% and 25.5% of the variance in the presence of program adoption. The model correctly classifies 71.8% of the cases. In this model, the Oregon dummy is a significant predictor, with a coefficient of 1.848 ($p < 0.001$) and an Exp(B) of 6.347, indicating that communities in Oregon are over six times more likely to have program evaluation services compared to those in BC. The Washington dummy is not statistically significant. Population change is a very strong positive predictor, with an Exp(B) of 183.681 ($p < 0.001$), indicating that communities with significant population changes are much more likely to implement program evaluation services. Revenue increases also have a significant positive effect (Exp(B) = 1.379, $p < 0.01$), while remoteness not being statistically significant.

Overall, all three models whose results are set forth in Table 6 are statistically significant, with varying degrees of explanatory power and accuracy. The strategic plan program model has the highest accuracy (81.6% correctly classified cases), while the e-government model has the highest pseudo-R-squares. The results highlight the strong influence of regional differences, particularly in Oregon, on the presence of institutional programs, with remoteness and population change also playing critical roles, though their impact varies across different types of programs.

Table 7 presents the results of an Ordinary Least Squares (OLS) regression analysis aimed at predicting the total number of institutional sustainability programs adopted by small rural communities. The dependent variable in this model is the count of programs a community has in place, ranging from 0 (no programs) to 6 (all programs listed in Tables 5 and 6). The independent variables include regional differences (with BC as the reference category), remoteness, population change, revenue increases, inflation, and service reductions. This model helps to identify the key factors that influence the extent of institutional sustainability program adoption across different small rural communities in Cascadia.

Table 7. Ordinary Least Squares Estimates of Total Number of Institutional Sustainability Programs [range 0 = no programs to 6 = 6 programs].

	Coefficient (Std. Error)
Variables	
OR Dummy	1.536 ***
	0.349
WA Dummy	0.641
	(0.304)
City Dummy	−0.364 **
	0.115
Remoteness	−2.990 ***
	(0.887)
Population Change	2.714 ***
	0.717
Revenue Increase	0.384 ***
	0.079
Inflation	−0.226 **
	0.077
Reduced Services	−0.583 **
	0.191
F test =	22.887 ***
Adjusted R^2 =	0.325
N =	365

Significance levels: ** $p \leq 0.01$; *** $p \leq 0.001$.

One of the most significant predictors in the model is the Oregon dummy variable, which has a coefficient of 1.536 ($p < 0.001$). This indicates that, on average, small rural communities in Oregon have 1.536 more sustainability programs than those in BC, highlighting Oregon's strong propensity for program adoption. In contrast, the Washington dummy variable, with a coefficient of 0.641, is not statistically significant, suggesting that while Washington small rural communities might have slightly more programs than those in BC, the difference is not substantive. The type of community, whether it is classified as a city or not, also plays a role in program adoption. The city dummy variable has a negative coefficient of −0.364 ($p < 0.01$), indicating that cities tend to have fewer institutional sustainability programs compared to smaller municipalities like towns or villages.

Remoteness emerges as a significant barrier to program adoption, with a large negative coefficient of −2.990 ($p < 0.001$). This result implies that more remote small rural communities tend to have significantly fewer institutional sustainability programs, likely due to challenges such as limited resources and logistical difficulties. Similarly, population change is a strong positive predictor, with a coefficient of 2.714 ($p < 0.001$). Communities experiencing significant population growth are more likely to adopt nearly three additional programs, underscoring the influence of demographic dynamics on institutional sustainability program implementation.

Financial factors also play a major role in determining the number of programs adopted. Revenue increases have a positive and significant impact, with a coefficient of 0.384 ($p < 0.001$). On the other hand, inflation negatively impacts program adoption, with a coefficient of −0.226 ($p < 0.01$), reflecting the financial constraints that inflation imposes on local communities. Similarly, the reduction of services due to economic or demographic pressures is associated with fewer programs, as indicated by the significant negative coefficient of −0.583 ($p < 0.01$). Overall, the model is highly statistically significant, as evidenced by the *F*-test value of 22.887 ($p < 0.001$). The adjusted R^2 of 0.325 signifies that the OLS model explains approximately 32.5% of the variance in the number of sustainability programs adopted by small rural communities, a moderate level of explanatory power. The results from Table 7 highlight the importance of regional differences, economic stability, population dynamics, and geographic factors in shaping the capacity of communities to adopt a broad range of institutional sustainability initiatives.

8. Discussion

The analysis presented in Tables 5–7 provides a comprehensive view of the factors influencing the adoption of institutional sustainability programs in small rural communities across BC, Oregon, and Washington. The binary logistic regression model results reported in Tables 5 and 6, along with the OLS model results displayed in Table 7, collectively highlight the significant role that regional, demographic, and economic variables play in determining whether and how many local government institutional sustainability programs are implemented in these communities.

The binary logistic regression results reported in Tables 5 and 6 consistently show that communities in Oregon are significantly more likely to adopt a range of institutional sustainability programs, such as grant writing, conflict resolution, and e-government initiatives, compared to those in BC. This same jurisdictional effect is also evident in Table 7, where the OLS model indicates that Oregon communities, on average, adopt more sustainability programs than their counterparts in BC. This set of findings suggests that Oregon may have specific policies, resources, or community characteristics that foster a higher rate of program adoption, making it a leader in regional institutional sustainability efforts.

In contrast, the results for Washington are more nuanced. While Washington's small rural communities are more likely than those in BC to adopt certain programs, such as conflict resolution and e-government, the overall number of such programs adopted is not significantly higher, as indicated in Table 7. This indicates that while Washington has strengths in specific areas of institutional sustainability, it does not exhibit the same across-the-board commitment to program implementation as Oregon does. The variability in program adoption between these neighboring states highlights the importance of understanding localized factors that either drive or inhibit institutional sustainability efforts.

Demographic and economic variables also play noteworthy roles in the shaping of institutional sustainability program adoption. Population change emerges as a particularly strong predictor across all models, indicating that communities experiencing significant population growth are more likely to implement multiple sustainability programs. This likely reflects the pressures and opportunities associated with growing populations, which may both necessitate and facilitate the adoption of new institutional sustainability programs.

Economic stability, as measured by tax revenue increases, is another critical factor at play. Communities with growing tax revenues are consistently shown to adopt more institutional sustainability programs, as demonstrated in both the binary logistic regression and OLS models. This finding underscores the importance of financial resources in enabling communities to invest in long-term sustainability initiatives. Conversely, fiscal and economic challenges such as inflation and the need to reduce services are associated with lower levels of program adoption.

Geographic factors, particularly remoteness, also have a substantial impact on program adoption. More remote communities are consistently less likely to have institutional sustainability programs. This finding highlights the need for targeted support and policies that address the major challenges often faced by remote small rural communities in adopting institutional sustainability initiatives needed to promote their survival.

Overall, the results from Tables 5–7 suggest that while jurisdictional factors, particularly in Oregon, play a strong role in driving institutional sustainability efforts, demographic and economic variables are also important determinants of program adoption. Communities with growing populations and stable or increasing revenues are better positioned to

implement institutional sustainability programs, while those facing economic challenges or geographic isolation may require additional support to achieve similar outcomes. These findings provide some valuable insights for public policymakers and community leaders looking to promote institutional sustainability in small rural communities, emphasizing the importance of tailoring strategies to the specific jurisdictional, demographic, and economic contexts of each small rural community.

9. Policy Implications

The findings from the analysis of institutional sustainability program adoption in small and rural communities across BC, Oregon, and Washington have several important policy implications. These implications are particularly relevant for public policymakers, local governments, and local community-based leaders and stakeholders in rural areas of Cascadia and elsewhere. he higher likelihood of program adoption in Oregon suggest that state-level policies and resources likely play a major role in fostering local institutional sustainability in small rural governments. Public policymakers in BC and Washington could look to Oregon as a model for the promotion of successful institutional sustainability strategies. This might involve examining Oregon's state-level policies, reviewing its funding mechanisms, or taking a measure of community support systems that may enable higher rates of program adoption in Oregon. Tailoring sustainability initiatives to the specific needs and capacities of communities within each state or province, while drawing on successful practices from neighboring regions, could enhance overall sustainability program effectiveness.

Economic stability, as evidenced by the significant role of revenue increases in program adoption, is critical for the successful implementation of institutional sustainability programs. Communities with growing revenues are better able to invest in sustainability initiatives, whereas those facing economic challenges, such as high inflation or service reductions, struggle to adopt these programs. Policymakers should consider creating or expanding upon existing financial support mechanisms, such as grants, subsidies, or low-interest loans, specifically targeted at small rural communities working with limited financial resources. This financial support could help alleviate some economic barriers to institutional sustainability program adoption and ensure that all communities, regardless of their economic status, can pursue community sustainability goals.

The negative impact of remoteness on program adoption highlights the need for policies that address the challenges faced by geographically isolated communities. These communities may require additional support to overcome limited access to resources and the higher per capita costs associated with implementing sustainability programs. Policymakers could consider providing targeted technical assistance, developing partnerships with regional hubs, or offering incentives for the use of digital and remote technologies that can help mitigate the effects of geographic isolation. By addressing these challenges, policies can help ensure that remote communities are not left behind in the push for greater local government resilience and achievement of a sustainable future for the current generation without passing costs on to future generations.

Population change is a significant driver of institutional sustainability program adoption, indicating that rapidly growing communities are more likely to implement these programs. Policymakers should recognize that growing populations present both a need and an opportunity for the adoption of institutional sustainability initiatives. Planning frameworks and policies that anticipate and support the sustainability needs of growing communities can help ensure that these areas are well-equipped to channel and manage the demands of increasing populations. This might include integrating sustainability considerations into urban planning, infrastructure development, and community services to proactively address the challenges associated with population growth.

The variation in the number and types of programs adopted across regions suggests that some communities may excel in certain specific areas of sustainability, while neglecting others. Policymakers should promote comprehensive sustainability strategies that encourage communities to adopt a broad range of programs rather than focusing on a limited set of initiatives. This could involve developing guidelines or frameworks that outline the key components of a holistic sustainability approach, providing resources and training to help communities implement a diverse set of programs, and fostering collaboration between and among small rural communities to share best practices and resources.

Finally, the findings indicate that not all communities have equal access to the resources and support required to adopt institutional sustainability programs. Policymakers should prioritize equity in sustainability initiatives by ensuring that all communities, regardless of their economic status, geographic remoteness, or population size, have an opportunity to participate in sustainability promotion efforts. This might involve prioritizing funding and support for underserved or disadvantaged communities, creating inclusive and accessible programs, and engaging with a diverse

range of stakeholders to ensure that sustainability efforts are responsive to the needs of nearly all current community members wishing to leave future generations a just and verdant community in which to prosper.

10. Conclusions

This research contributes to the extant literature by providing a nuanced understanding of the factors influencing the adoption of institutional sustainability programs in small rural communities across Cascadia. By employing binary logistic regression and OLS models with survey-based data collected among mayors, the study highlights the significant roles of jurisdictional differences, economic stability, population dynamics, and geographic remoteness in shaping local government institutional sustainability efforts. These findings add to the existing body of knowledge by identifying specific predictors of program adoption and offering insights into the barriers faced by small rural communities situated in differing contexts. However insightful it may be, the research reported upon here has limitations, including its reliance on cross-sectional data limiting the ability to infer causality, and the potential for other unmeasured variables being just as important as those studied. For example, local political will or effective community engagement could also influence the adoption of institutional sustainability programs. Additionally, the study focuses on a specific geographic region, which may limit its generalizability to other areas and regions. Future research should explore longitudinal data to better understand the causal relationships between these factors and sustainability program adoption over time. It should also consider incorporating qualitative methods to capture the experiences and perspectives of local stakeholders, information which could provide deeper insights into the challenges and opportunities for sustainability promotion in small rural communities. Furthermore, expanding the geographic scope of the research to include diverse regions would help to assess the broader applicability of the findings and identify potential regional variations in local government institutional sustainability practices.

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Author Contributions

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Ethics Statement

Ethical review and approval were waived for this study by the Institutional Review Board, Oregon State University, USA, and the Office of Research Services, the University of Victoria, Canada, due to the public nature of the data available.

Informed Consent Statement

Research subject consent was waived by the Institutional Review Board, Oregon State University, USA, and the Office of Research Services, the University of Victoria, Canada, due to the public nature of the data available.

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Footnotes

1. The Index of Relative Rurality (IRR) in the U.S. is a scale designed to measure the degree of remoteness of a geographic location [38]. It considers several factors, including population density, population size, distance to the nearest metropolitan area, and sometimes additional elements such as travel time or level of access to services. The IRR is widely utilized in research and public policymaking to distinguish between urban, rural, and remote areas. It provides a quantitative measure that can be used to compare different areas or track changes in rurality/remoteness over time. Similarly, the Remoteness Index in Canada is a statistical tool developed by Statistics Canada to quantify the relative remoteness of Canadian communities [39]. The index typically factors in the distance from services and population centers, travel time to reach specific service centers, and access to transportation networks.
2. Several statements concerning local government budgets were included in the survey, providing Likert scale-type response formats (1 = strongly disagree to 5 = strongly agree). The two items used in the multivariate regression analyses were: "Revenues generated through fines and fees have increased over the last five years," and "Inflation has significantly affected our ability to balance the budget in the last five years."
3. "In the last five years, were any services reduced or eliminated in response to population growth/decline?" (1 = yes, 0 = no).

References

1. Brinkerhoff DW, Goldsmith AA. Institutional sustainability in development programs: The concept and its implications for planning. *Public Adm. Dev.* **1990**, *10*, 135–146.
2. Kayaga S, Smout I, Njiru C. Assessing water sector institutional capacity: The case of Kenya. *Water Policy* **2013**, *15*, 577–596.
3. Spangenberg JH, Pfahl S, Deller K. Towards indicators for institutional sustainability: Lessons from an analysis of Agenda 21. *Ecol. Indic.* **2002**, *2*, 61–77.
4. Wheeler SM. *Planning for Sustainability: Creating Livable, Equitable, and Ecological Communities*; Routledge: London, UK, 2013.
5. Salvador R, Sancho F. Addressing sustainability in rural areas: The role of local government. *J. Rural. Stud.* **2021**, *58*, 12–25.
6. Flora CB, Flora JL. *Rural Communities: Legacy and Change*, 5th ed.; Westview Press: Boulder, CO, USA, 2018.
7. Siedenburg, J. R. Local knowledge and natural resource management in a peasant farming community facing rapid change: A critical examination. *arXiv* **2022**, arXiv:2204.04396.
8. Smith N, Hirsch D, Davis A. Accessibility and capability: The minimum transport needs and costs of rural households. *J. Transp. Geogr.* **2012**, *21*, 93–101.
9. Russell D, Mathew S, Fitts M. Interventions for health workforce retention in rural and remote areas: A systematic review. *Hum. Resour. Health* **2021**, *19*, 109. doi:10.1186/s12960-021-00643-7.
10. Rogers EM. *Diffusion of Innovations*, 5th ed.; Free Press: New York, NY, USA, 2003.
11. Nelson PB, Nelson L. Rural gentrification and networks of capital accumulation—A case study of Jackson Hole, WY. *Environ. Plan. A* **2010**, *42*, 908–924.
12. Adams MD. *Cultural Differences in North American Regions*; Toronto University Press: Toronto, ON, Canada, 2004.
13. Fox ML. *Comparative Governance: US and Canadian Approaches*; McGraw-Hill: New York, NY, USA, 1985.
14. Horowitz GS. *The Political Culture of Canada and the United States*; Toronto University Press: Toronto, ON, Canada, 1966.
15. Wise CR. *Governing Across Borders: US and Canadian Perspectives*; University of British Columbia Press: Vancouver, BC, Canada, 1999.
16. Pierce JC, Lovrich NP, Steel BS, Steger MA. *Political Culture and Public Policy in Canada and the United States: Only a Border Apart?*; Edwin Mellen Publishers: Lewiston, NY, USA, 2000.
17. Wolters EA, Steel BS (Eds.). *Environmental Politics and Policy of Western Public Lands*; Oregon State University Press: Corvallis, OR, USA, 2020.
18. Reese LA, Rosenfeld RA. *The Civic Culture of Western Cities: Institutional and Political Dimensions*; University of Toronto Press: Toronto, ON, Canada, 2004.
19. Husain S, Steel BS. *Local Governance in Oregon: Structures and Policies*; Oregon State University Press: Corvallis, OR, USA, 2018.
20. Clayton C, Lovrich NP. *Governing Washington State*; Washington State University Press: Pullman, WA, USA, 2011.
21. Government of British Columbia. Rural Dividend Fund. Available online: https://www2.gov.bc.ca/gov/content/employment-business/economic-development/developing-your-community/rural-dividend-fund (accessed on 4 September 2024).
22. BC Rural Centre. Rural Dividend Fund: Overview and Impact. Available online: https://www.bcruralcentre.org/ (accessed on 4 September 2024).
23. Smith J. Sustainability planning in Oregon's rural communities. *J. Sustain. Dev.* **2020**, *39*, 45–60.
24. Oregon Office of Rural Health. *Rural Capacity Development in Oregon*; Oregon Health Science University: Portland, OR, USA, 2022.

25. McMullen JR, Pittman RH. *Building Rural Capacity: Lessons from Oregon's Rural Capacity Development Program*; Oregon State University Press: Corvallis, OR, USA, 2021.
26. Perry D, Kagan C. Collaborative governance in rural areas: Case studies from Oregon. *J. Rural. Aff.* **2019**, *34*, 110–128.
27. Community Economic Revitalization Board (CERB). *CERB Annual Report*; Washington State Department of Commerce: Olympia, WA, USA, 2021.
28. Washington State Department of Commerce. *Broadband Access in Rural Washington*; Washington State Department of Commerce: Olympia, WA, USA, 2020.
29. Feldman MP. Public-private partnerships in rural economic development. *J. Public. Adm.* **2019**, *42*, 265–283.
30. Smyth JD, Christian LM. *Internet Phone Mail and Mixed-Mode Surveys*; John Wiley and Sons: New York, NY, USA, 2008.
31. Statistics Canada. Population Estimates for Local Governments. Available online: https://www150.statcan.gc.ca/n1/en/type/data?HPA=1 (accessed on 4 September 2024).
32. Salamon LM. *The Tools of Government: A Guide to the New Governance*; Oxford University Press: Oxford, UK, 2002.
33. Berman EM, Bowman JS, West JP, Van Wart MR. *Human Resource Management in Public Service: Paradoxes Processes and Problems*, 6th ed.; CQ Press: Washington, DC, USA, 2019.
34. Kettl DF. *The Transformation of Governance: Public Administration for Twenty-First Century America*, 2nd ed.; Johns Hopkins University Press: Baltimore, MD, USA, 2015.
35. Ho ATK, Cho W. *Government Innovation: A Reference Handbook*; ABC-CLIO: Santa Barbara, CA, USA, 2017.
36. Bryson JM. *Strategic Planning for Public and Nonprofit Organizations: A Guide to Strengthening and Sustaining Organizational Achievement*; John Wiley Sons: Hoboken, NJ, USA, 2018.
37. McDavid JC, Huse I, Hawthorn LR. *Program Evaluation and Performance Measurement: An Introduction to Practice*, 3rd ed.; SAGE Publications: Thousand Oaks, CA, USA, 2018.
38. Waldorf B, Kim A. *The Index of Relative Rurality (IRR): US County Data for 2000 and 2010*; Purdue University: West Lafayette, IN, USA, 2018. doi:10.4231/R7959FS8.
39. Statistics Canada. Index of Remoteness. Available online: https://www150.statcan.gc.ca/n1/pub/17-26-0001/172600012020001-eng.htm (accessed on 4 September 2024).