FLORIDA INTERNATIONAL UNIVERSITY

Miami, Florida

RURAL BROADBAND INFRASTRUCTURE INVESTMENT IN THE USA: HYPOTHECATED TAXATION ACCEPTANCE FACTORS AND MESSAGE EFFICACY

A dissertation submitted in partial fulfillment of

the requirements for the degree of

DOCTOR OF BUSINESS ADMINISTRATION

by

Kostas Stamatiadis

2025

To: Dean William G. Hardin
College of Business

This dissertation, written by Kostas Stamatiadis, and entitled Rural Broadband Infrastructure Investment in the USA: Hypothecated Taxation Acceptance Factors and Message Efficacy, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

Jayati Sinha, Committee Member

Chaitali Kapadia, Committee Member

Attila Hertelendy, Committee Member

Miguel Aguirre-Urreta, Major Professor

Date of Defense: May 29, 2025

The dissertation of Kostas Stamatiadis is approved.

Dean William G. Hardin
College of Business

Andrés G. Gil
Senior Vice President for Research and Economic Development
and Dean of the University Graduate School

Florida International University, 2025

DEDICATION

For Sofia

She may not yet know where to look, or what to look for, but I know she carries with her the desire to grow, the courage to ask questions, and the resilience to face uncertainty. As she searches for her own purpose and aspirations, may she trust that the way forward is already within her.

ACKNOWLEDGMENTS

A heartfelt thank your – and much love - to my classmates in the DBA cohort who became my family throughout the journey of this program and the writing this dissertation.

My deepest gratitude goes to the faculty at Florida International University DBA program who guided us with care, dedication, and wisdom. I am especially grateful to Dr. Miguel Aguirre-Urreta for his mentorship and steady guidance, and to Dr. George Marakas, who was the pillar that held us all together and provided such an outstanding role model for who I would like to become.

A special thanks to Dr. Greg Desrosiers for his friendship, for leading the way, and for being a source of motivation and support.

ABSTRACT OF THE DISSERTATION

RURAL BROADBAND INFRASTRUCTURE INVESTMENT IN THE USA: HYPOTHECATED TAXATION ACCEPTANCE FACTORS AND MESSAGE EFFICACY

by

Kostas Stamatiadis

Florida International University, 2025

Miami, Florida

Professor Miguel Aguirre-Urreta, Major Professor

This study explores public acceptance of earmarked taxation to support the expansion of fiber optic-based high-speed internet access, or Broadband, in underserved areas - an essential driver of economic opportunity and digital equity. As governments seek funding options to bridge the digital divide in under-connected regions, understanding what drives public support is critical. Survey findings reveal that Social Norms and Civic Engagement are the strongest predictors of support, with Locus of Control influencing intention only when paired with Trust in Government. Individual traits like Personal Values and Perceived Usefulness had limited impact. The findings extend the Elaboration Likelihood Model by incorporating Locus of Control, offering a behavioral framework for designing persuasive, ethical, and community-sensitive infrastructure messaging.

TABLE OF CONTENTS

List of Figures

List of Tables

1. INTRODUCTION

Problem Statement

Public Infrastructure: Foundations of Progress

A great deal of attention in today's political and social discourse is focused on the pressing need of the United States to update its public infrastructure. The provisioning and maintenance of economic infrastructure is the backbone of a modern society and a fundamental responsibility of government. In addition to being a cornerstone of economic growth and development, well planned and managed infrastructure investment is indispensable to public safety, environmental sustainability, and overall sociopolitical cohesion. Public infrastructure enables all economic activity by facilitating trade, providing for transportation of goods and people, energy generation and distribution, as well as communications; therefore, areas with well-developed infrastructure attract businesses and investments, promoting economic growth. Beyond its economic role, infrastructure investment acts as an agent for social equity by ensuring that essential services such as transportation, water supply, waste management, electricity, and telecommunications are available to all citizens, adequately and equitably, regardless of socioeconomic status or area of habitation. Well-planned, and effectively managed public infrastructure investment plays a pivotal role reducing regional social inequalities by providing underserved areas with access to essential services. Improving public transportation in low-income neighborhoods and ensuring the electrification clean water availability and sanitation in rural communities are compelling examples of the impact of such investment. Given the accelerating shift of all aspects of social and economic life to online platforms, people in areas without fiber optic-based high-speed internet access (hereafter ‘Broadband’ are at a disadvantage comparable to lacking functional roads, clean water, or electricity. This condition is increasingly recognized as *digital poverty*, that is the inability to fully participate in the digital economy and society due to inadequate access to affordable, high-speed internet and digital tools (Al-Zaman, 2023). Without reliable Broadband, individuals and families face barriers to education, employment, healthcare, financial services, and civic participation, further propagating digital inequality (Kuhn et al., 2023). Broadband access can be viewed not merely as a convenience or a want for the latest communications and entertainment options, but as a modern day precondition for exercising basic liberties, akin to participating in education, the workforce, healthcare, and civic life. The persistence of digital poverty effectively denies these liberties to many rural and low-income populations, constituting a form of structural injustice (Rawls, 1974, 1999). Addressing digital poverty requires a systemic approach that combines targeted public investment and sustained political commitment, making it incumbent on policymakers to prioritize such technology access and to treat Broadband as essential public infrastructure and a catalyst to economic development.

One of the most pivotal components of physical Broadband infrastructure improvements is the expansion of fiber optic Broadband internet service into rural and underserviced communities. Federal legislation that became law in 2021 (H.R.1700 - 117th Congress (2021-2022): Broadband Infrastructure Finance and Innovation Act of 2021. (2021, March 10) allocates approximately $65 Billion for fiber Broadband expansion – and that is only the latest in a series of actions that Federal and State governments have been taking for years to drive the expansion of fiber optic networks.

The Digital Divide

As discussed, ensuring that rural populations have high-speed internet access is considered a matter of social justice, economic equality and opportunity, and an indispensable tool in combating disenfranchising rural residents and closing the so called *digital divide* (Warren, 2007). Gorski, (2005) suggests that a digital divide exists when a group's access to digital technologies and resources differs on one or more dimensions such as social, economic, or cultural. Horrigan and Schement, (2021) argue that Broadband is a "civic asset" and a cornerstone of a "Digital New Deal" that would alleviate long standing shortfalls in equal participation, economic fairness, and social justice. Broadband infrastructure investment has been shown to bridge the digital divide, demonstrating how public policy can have a pivotal role in alleviating the exclusion from economic opportunity for the poorest socioeconomic groups. Whitacre et al. (2014) demonstrated that Broadband availability and adoption are strongly correlated with economic outcomes, including employment and income levels. While Broadband availability was associated with higher unemployment, its adoption showed a positive correlation with the number of businesses and jobs, highlighting its role in supporting local economic growth. A telecommunications reform in Mexico between 2010 and 2015 increased internet penetration and access and as a result had a significant effect on households below the poverty line, while the effect on more affluent social groups was moderate but still present (Ovando & Olivera, 2018). A longitudinal study in Nigeria (Pedrós et al., n.d., 2020) showed that expanding internet connectivity increased labor force participation and employment in the areas with new internet access. Significantly, the study documented a simultaneous increase in consumption and a reduction of households living in poverty. The adoption of high-speed internet by rural households is affected by factors such as price, perceived quality, geographic divides, race, etc. (Dickes et al., 2019). However, attitudes are increasingly shifting and Broadband is now widely accepted and desired (Glass & Stefanova, 2010). Low-income consumers are very much aware of the value of Broadband and often look for alternatives to Broadband such as mobile networks (Rhinesmith et al., 2019). Interestingly, Broadband infrastructure deployment appears to not be randomly distributed across geography, but rather is deployed in areas where the ratio of demand to deployment cost is favorable, complicating the task of discovering Broadband's influence on economic outcomes (Ford, 2018). Along the same lines, Mayo and Wallsten (2011) found evidence of the substantial, positive, but highly volatile impact of Broadband to employment growth and economic output. Moreover, the speed and variety of applications available through Broadband can impact the degree of positive economic benefits. Silva et al. (2018) noted that fast and reliable Broadband, rich in context and applications, can positively influence adoption among older populations, enhancing access to services like telemedicine which can be of great importance to those living in rural areas away from medical facilities and services. Similarly, Miri Lavassani et al., (2014) empirically showed that when Broadband is strongly endorsed and implemented at the business level it is contributing to economic growth.

Broadband availability in the United States has improved over the years, yet several regions, particularly in the Midwest, Northeast, and some Southern states, still lack access to reliable, low-latency, high-speed Broadband (*2022 IFIP Networking Conference (IFIP Networking)*, 2022). Digital divides can also exist within metropolitan areas where access to Broadband can still be constrained by lack of infrastructure investment rather than geography, resulting in the social exclusion and marginalization of certain groups. Reddick et al. (2020) found evidence of four factors (geographical disparities, profit-based discrimination, technology deployment cost, and socio-economic factors) that play a role in the formation of such a digital divide – within an urban setting. Deliberate, consistent, and sustained investment in Broadband infrastructure is required. A Canadian government initiative promoting “Remote Rural Broadband Systems” (RRBS), a policy explicitly seeking to expand service into underserved areas sought funding through spectrum auctions – a short term and unreliable funding solution (Taylor, 2018). The study concluded that regulation and government investment are essential elements in fostering the trust necessary for private entities to venture in the new Broadband initiatives. Under Virginia’s Grid Transformation and Security Act (GTSA), rural Broadband expansion became a strategic priority by enabling electric utilities to support middle-mile fiber deployment. This approach has led to successful projects across rural Virginia, reducing the digital divide and promoting economic inclusion (The Pew Charitable Trusts, 2022). The Act allowed companies like Dominion Energy and Appalachian Power to partner with internet service providers and local governments, leveraging existing utility infrastructure to extend high-speed internet access to underserved areas. Energy companies and other utility providers have often been involved in the provision of telecommunications services and are increasingly expanding their contribution to Broadband development (Gerli et al., 2018). Legacy utilities and other alternative utilities providers are eager to leverage existing passive infrastructure (i.e., the power lines.) These utilities deploy and own fiber optic-based Broadband infrastructure and are quickly becoming strategic partners for municipal and regional authorities eager to boost their Broadband infrastructure as a source of local competitiveness.

Connecting Rural Communities

The connectivity needs of rural populations have been increasingly met by the expansion of wireless telephony networks which, through the introduction of successive generations of technological advancement, deliver ever more capable mobile phone services and internet access across much of the US. In addition to ground-based infrastructure investments, satellite-delivered internet services, such as those provided by Starlink, are emerging as a promising solution for extending connectivity to the most remote and geographically challenging areas, albeit at a high cost (Griffith, 2023). Although mobile networks and satellite internet are valuable solutions for mobile connectivity or remote regions, fiber-optic Broadband is generally superior in terms of speed, reliability, low latency, and long-term scalability. Significantly, the Rural Broadband Association, estimates that just 11% or the internet traffic in rural areas is delivered through wireless networks with the vast majority carried over wireline networks (NTCA – The Rural Broadband Association, n.d.). The COVID-19 pandemic, by forcing people to work, attend school, and access healthcare from home, laid bare the urgent need for high-speed, fiber-optic Broadband access as a critical household utility. Davies (2021) found that for lack of Broadband remains a barrier for rural communities to benefit from and participate in the trend toward remote working - further underscoring the urban-rural divide. The overall impact of Broadband connectivity has been demonstrated to be multidimensional. Chen et al. (2020) found significant increases in workers' wages and firm productivity resulting from an internet upgrade program undertaken in China ca. 2000. Malamud et al. (2018) found in a study conducted in Peru that students residing at homes with high-speed Broadband internet access showed an improvement in digital proficiency. Declining technology skills become a bias against rural populations lacking Broadband resulting in diminished technological awareness and adoption, reductions in availability and quality of social services, impeded marketplace access, and their over economic potential curtailed.

A growing body of literature suggests that lagging Broadband penetration can be mitigated by lowering the total operating costs incurred by consumers, mainly in the form of purchasing the technology needed (phones, computers, routers, etc.) and lowering taxes consumers pay to Internet Service Providers ("ISP') for using Broadband (Katz & Callorda, 2018). Price subsidies and content enrichment (as in, say, rich video content) have also been leveraged to promote internet adoption by the population in rural areas (Glass & Stefanova, 2010) but the longevity and sustainability of such policies is unreliable. As an example, Congress has allowed funding for the Affordable Connectivity Programs "ACP" to expire (ACP provided low-income households with discounted internet service) (FCC, 2024); and ISP trade groups in NY have asked the US Supreme Court to strike down a law mandating affordable process for low-income consumers (Stimson, 2024). However, demand for Broadband is now becoming increasingly price inelastic, along the lines of electricity, or prescription medications. Consumers of all socio-economic strata consider Broadband internet access essential. We anecdotally hear of people who fall into financial hardship - even become homeless - yet still hold on to their wireless phone and internet connectivity because it is their access to the job marketplace and a vital bridge to their social networking and presence overall. Increased competition has stimulated price reductions of both the cost of the equipment and the price of the service. It is no longer considered a luxury, or a nice-to-have service, or amenity. Hence, stimulus to encourage consumer Broadband penetration would have no or little incremental affect to their perception of usefulness and likely is no longer needed.

Bridging the Divide

As the United States and the world overall move deeper in a fully connected, seamlessly integrated digital environment, state and local governments are now challenged to promote, fund, and implement the deployment of fiber optic-based Broadband infrastructure in unserved, or underserved communities. Broadband roll outs are capital and time intensive endeavors that require institutional commitment, sustained financing, and dependable partners. Concessional financing (institutional loans offered on more favorable terms than market conditions to support underdeveloped areas) carry significant risks, including dependencies on potentially vacillating policy for financial support and debt accumulation. As they work to meet Broadband deployment targets, state and local governments may find it necessary to introduce new, earmarked taxation with the specific intent to fund rural internet Broadband expansion initiatives and projects - similar to the way social security taxes that support the Social Security Fund or, more aptly, how the federal gasoline tax supports the Highways Trust Fund. Such taxation can be implemented through specific legislative action, or direct citizen voting by referendum, raising issues of public support, trust, and perceived benefits.

It is then immediately obvious that the adoption of such taxation initiatives would rely heavily on popular support and the willingness of individuals to contribute to public investment for the common good. Andreoni, (1995) asserts that free-riding theories predict that privately funded public services should have few willing contributors. However, individuals tend to cooperate more than expected by rational and selfish individuals – although such cooperation is "heterogenous and declining over time" (Fischbacher et al., 2001). Moreover, individuals have been shown to be more likely to contribute more to the common good under the condition that others contribute too – a conditional cooperation that reflects social norms and fairness considerations (Andre et al., 2024a; Fischbacher et al., 2001; Rustagi et al., 2010). Varying perceptions of usefulness, shifting social norms, and misalignment of beliefs and attitudes, could all lead to lack of support for taxation supporting "common good" objectives such as Broadband infrastructure investment (Andre et al., 2024b; Boykoff & Boykoff, 2004; Sparkman et al., 2022). Understanding and addressing these behavioral dynamics is therefore essential for designing communication strategies aimed at raising funding for public infrastructure like Broadband, while aligning with citizens' sense of fairness, trust, and collective responsibility.

Research Gap

Hypothecated taxes, sometimes called earmarked taxes, are defined as taxes whose revenue is designated to be spent for a specific use, or purpose (Doetinchem, 2010; Jankowski, 1984), such as funding infrastructure projects. The argument for earmarked taxes is primarily based on the idea that different groups and individuals in society have varying needs. Earmarking allows voters to express their preferences for public goods and services more directly (International Monetary Fund, 1988). The necessity and importance of infrastructure projects is often all too obvious both to governments and policymakers, and society as a whole; yet significant resistance is often encountered at different levels by local, or regional stakeholders (Friedl & Reichl, 2016). Analogous extant research around support of government and\or market strategies for environmental regulation concluded that that explaining such behavior requires further research beyond demographics on the contextual factors (such as individual opportunities and abilities) that influence behavior (Poortinga et al., 2004). As part of the political discourse, policy formulation and messaging design, legislators and regulators must consider the acceptance - or resistance - of raising hypothecated taxation revenue for Broadband among diverse social groups. This consideration must account for differences in geographic location (rural vs. urban), available Broadband connectivity options, individual needs, perceptions of utility, and the varied social and economic interests and profiles of the population. By identifying the specific social, economic, and psychological factors that contribute to the acceptance of Broadband infrastructure this study will fill a gap in our understanding of how demographic variations combine with perceived benefits to inform public attitude toward earmarked taxation public attitudes toward overall public infrastructure projects. These insights can also be applied to emerging infrastructure initiatives, such as renewable energy systems, electric vehicle charging networks, and climate-resilient transportation, where public acceptance of targeted funding mechanisms will similarly depend on how well perceived benefits, social norms, and demographic factors are understood and addressed.

A central premise of this study is to explore how the nuances of message framing and the routes of persuasion, which is central (logical, fact-based) or peripheral (emotional, value-based), effectively engage the public and influence their perceptions of these taxes as fair, necessary, and beneficial. The concept of bounded rationality as posited by Herbert Simon suggests that individuals make rational decisions within the constraints of the degree of completeness of the information available to them, their own information processing abilities, and their cognitive biases – all within the context of their attitudes and emotions (Simon, 1955). People rely on simplified decision models that they construct and make decisions based on these models.

Today, digital media is increasingly claiming an ever more prominent role in public communication and critically, it offers unprecedented access to information and at the same time unprecedent potential to exacerbate cognitive limitations resulting to sub-optimal decision making as described by the bounded rationality framework. Hence, commonly the modern 24/7 informational overload we are all exposed to combines abundant information with scarce attention, leading users to rely on a heuristic processing (the peripheral route) due to their cognitive limitations. This study aims to contribute currently unavailable, nuanced insights into how the public benefits of hypothecated taxation for Broadband (and by extension other similar types) infrastructure development can be communicated in a manner that enhances shared understanding and acceptance. By understanding how people process information about hypothecated taxes and the factors that shape their attitudes towards such taxes, policymakers can craft communication strategies that are not only informative but also motivating, effectively connecting with the public. Advances in technology, such as Artificial Intelligence, now allow for content and message personalization and a multichannel communication approach which are most effective when the messaging is both compelling and emotionally resonant. This study will empirically provide currently unavailable insights (particularly of normative value) that will enable the leveraging of interactive tools, dynamic content creation, sentiment analysis, and even influencer engagement. Study results aspire to contribute to the development of strategies effectuating higher levels of willingness to support economically beneficial public investments, encourage voluntary tax compliance, and overall promote broader public backing of initiatives that fund critical public services.

In the same vein, this study advances theoretical understanding of how locus of control operates within the framework of the Elaboration Likelihood Model (ELM) (Petty & Cacioppo, 1984). The ELM has been widely applied across disciplines to explain how individuals process information through central or peripheral routes, however, current literature offers only limited insight into how individuals' perceived control over outcomes might influence their motivation and ability to engage with persuasive content. Indeed, J. Kitchen et al., (2014) argue that there is a real need for research to determine how message processing shifts from one persuasion route to the other. This study addresses that gap by examining how variations in locus of control affect an individual's likelihood to engage in deeper, more effortful processing or to rely on heuristics and cues, thus enhancing ELMs generalizability and replicability, while also introducing a contextual geographic dimension, comparing urban and rural populations.

Overall, the findings of this study are expected to empirically address an increasingly important gap in our understanding of the contextual decision-making of individuals to support public infrastructure investment. These findings will serve as a valuable resource and input tool for policymakers on how to effectively deploy communication strategies that enhance the perceived fairness, necessity, and benefits of hypothecated taxes, which, in turn, will lead to more informed and positive public engagement with such tax policies.

Research Questions

As stated, the objective of this research is to explore insights into effectively communicating the public benefits associated with hypothecated taxation for Broadband infrastructure. This exploration seeks to understand the factors affecting a heterogenous public's willingness to contribute, communication strategies can be refined to enhance shared understanding and acceptance of such public investment. Additionally, the study aims to explore the efficacy of varying, nuanced message formulation of the central route of persuasion (cognitively engaging, content-rich arguments) versus the peripheral route (heuristic cues, emotional appeals, source credibility) and how these can shape public perception of such earmarked taxation as necessary and beneficial.

The two following questions have been formulated to guide this research:

Q1: What are the factors contributing to the acceptance of taxation for Broadband infrastructure investment?

Q2: Which messaging route about Broadband infrastructure investment taxation has the greatest efficacy in leading to taxation acceptance?

This research will attempt to addresses these questions, anchored around a proposed sales tax increase to support Broadband infrastructure investment. By exploring these questions, the study aims to provide recommendations that would assist policymakers and stakeholders in developing and adjusting effective communication strategies to bolstering support for targeted public infrastructure investment through hypothecated taxation.

Research Contributions

In recent years there have been many government initiatives to introduce taxes on fossil fuels in an effort to reduce greenhouse gas emissions and transition away from carbon-based energy sources. Indeed, environmental taxes designed to promote sustainability and environmental stewardship by incorporating the costs of environmental impacts into the price of goods and services will become more prevalent in the future. In spite of widespread support for climate action (Andre et al., 2024), such taxes have proven to be controversial, as public opinion has typically been hostile toward them (Fairbrother et al., 2019), highlighting the need for better understanding of public attitudes in an effort to generate as much support as possible for end-use specific taxation. Kirchler et al. (2008) suggest that the approach authorities adopt is important for tax acceptance and compliance; if their tack is antagonistic, taxpayers try to maximize their individual benefit and only comply when forced to; if their tack is synergistic, taxpayers comply voluntarily based on perceived fairness and utility. Furthermore, taxation earmarked for public infrastructure projects faces challenges relating to free riding perceptions, meaning the way individuals behave toward resources, goods, or services that they do not have to pay for directly (examples are use of public parks, policing, national defense, etc.) Since people are able to benefit from these good and services without having to directly pay for them, they lack the incentive to contribute voluntarily (Hardin, 1983). Even so, we see people still opting on their own to contribute to public goods such as Public Broadcasting support, charitable contributions, etc., more than what would be predicted by standard economic theory, ostensibly motivated by different reasons that usually attributed to social norms and the desire for a “warm glow” (Andreoni, 1989, 1990). Fischbacher et al., (2001) explore “conditional cooperation” as an explanation for such unselfish behavior: people are willing to contribute more to public good the more others contribute. Conditional cooperation has been shown to play a large role in stabilizing the heterogeneity in the willingness of individuals to cooperate (Rustagi et al., 2010). Yet, Andre et al., (2024a) found that “individuals systematically underestimate the willingness of their fellow citizens to act”, that is they are in a state of pluralistic ignorance: they assume that their private beliefs an attitudes differ from those of society as a whole (Prentice & Miller, 1996). Individuals may be open to the idea of hypothecated taxes for improving Broadband infrastructure but assume that others do not share their attitude, resulting to a suppression of their support. Another possibility is that individuals may be reluctant or intimidated to express support for hypothecated taxes because they assume that their peers and community opposes it. Additionally, they may underestimate the broader societal benefits of improved Broadband infrastructure if they believe that others do not see the value in it. By recognizing and addressing the factors affecting such behavior, policymakers can obtain a more accurate understanding of public opinion. Through customized, targeted messaging campaigns they can then overcome these barriers and achieve broader acceptance of hypothecated taxation for such infrastructure investment – for Broadband, as well as similar future initiatives that will require intense public investment (the looming transition to electric cars comes to mind).

Agreements between public entities and private companies (Public-Private Partnerships, or PPPs), such as real estate developers, ISPs, Co-ops, utilities, etc. have become a common source of new Fiber-to-the-Home (FTTH) and Fiber-to-the-Building (FTTB) projects as their effective relationship and project management, stakeholder alignment, and public sector entrepreneurial orientation aligns closely with the complexities of Broadband deployment (Lopez & Marakas, 2023). Developers have realized that fast internet is an attractive incentive to offer potential subdivision and apartment residents, as well as small business tenants. Improvements in fiber flexibility have also made it easier to install in existing apartment buildings (Frontier Business, 2023). On the other hand, community and business leaders are increasingly recognizing that without fast internet service, they risk falling behind in today's digital economy. Rural utility cooperatives were created to speed the extension of electric and telephone services to remote areas that large utility companies did not serve. Many of those same cooperatives are now actively working to deliver high-speed fiber broadband to low-income and rural communities. For instance, states like Montana and North Dakota enjoy high levels of FTTH access largely due to the proactive efforts of their local co-ops. Since fiber deployment is costly, operators may hesitate to deploy it outside densely populated zones, and even in fiber-equipped districts they do not always find it useful to connect all dwellings and enterprises. There is a high risk that operators will skim off the most profitable parts of their service areas and that some people will never get connectivity, except perhaps at prohibitive prices when additional network construction proves necessary. In short, operators will not spontaneously cover the entire territory, even if they are sharing a network, unless the regulatory framework gives them reasons to do so or if they receive public financial aid, resulting in pressure to government to raise funding for this purpose.

There are various options to raise tax revenue for needed Broadband infrastructure investment. These can be direct, or indirect, such as in the form of surcharge on the price of gas, riders on power and telephone bills, or an added percentage point(s) to the sales tax. It can be applied across a state, or only in certain counties (presumably the counties that need Broadband). Legislators and regulators are therefore always in need of research-driven guidance regarding the public's disposition toward Broadband spending initiatives in order to adjust their strategies and approach, finetune messaging, and reflect public opinion in their policies to augment endorsement of their legislative and regulatory actions (Mayo & Wallsten, 2011). By exploring, confirming, and reframing assumed attitudes and measuring the impact of predictor variables to people's attitudes this proposed study could serve just such a purpose. Marketing and public messaging campaigns can be devised accordingly, providing education to the public that addresses their specific concerns; and budgetary priorities can be better framed, debated, and legislated. On a larger scale, this research contributes to the field of sustainable development by providing a behavioral and policy-oriented framework for understanding public support for infrastructure investment by examining critical factors in the successful implementation of sustainable infrastructure initiatives (e.g. UN Sustainable Development Goal (SDG) 9) (United Nations, 2015).

As a final thought, the research aims to develop a theoretical framework that can be applied to emerging public investment funding initiatives as traditional revenue and funding sources evolve. For example, a recent article highlighted the fiscal challenge many states face in replacing tax revenue lost due to the rise of electric vehicles, which bypass gasoline taxes (Aton, 2024). Future infrastructure projects such as expanding electric vehicle charging networks, renewable energy projects and electric grid modernization implementation, public transportation systems, water conservation or carbon capture initiatives, may need to rely on a variety of innovative revenue streams. Developing a comprehensive framework for these initiatives requires a multi-dimensional approach, one that considers the influence of policy, institutional legitimacy, and civic trust. Hence, it is critical to policy makers to investigating the role of messaging and framing in legislative advocacy and the ways trust, norms, and public perceptions affect the adoption of infrastructure investment and technology diffusion policies. Psychological mechanisms such as the bandwagon effect where individuals adopt behaviors or positions primarily because they perceive others are doing so (Marsh, 1985; Schmitt-Beck, 2016), suggests that public support for infrastructure taxation may grow not only from rational evaluation, but from perceived social consensus. Message framing that emphasizes widespread support or civic endorsement can activate this effect. By leveraging social proof, public campaigns can boost acceptance for hypothecated taxation funding models, especially in areas with visible collective benefit. Further aligning with co-creation theory from marketing, which emphasizes collaborative value generation between firms and consumers, the framework the study hopes to explore would allow for a similar approach in the domain of public discourse that can inform how public infrastructure initiatives are designed, funded, and communicated. Co-creation enhances public trust, improves the perceived legitimacy of policy decisions, and increases the prospects of compliance and support, especially when new funding models or redistributive taxation are involved (Alves, 2013; Ansell & Torfing, 2021; Rösler et al., 2021). By integrating these factors, the framework could serve as a valuable tool for designing innovative, nimble, and effective funding mechanisms for future public infrastructure projects. Ultimately, this approach advances the development of infrastructure strategies that are not only inclusive, adaptive, and resilient, but also grounded in the Kantian ideal of treating citizens as ends in themselves, that is rational agents capable of contributing to the common good through shared ownership and deliberative engagement (Aylsworth & Castro, 2024).

2. BACKGROUND LITERATURE REVIEW AND THEORY

Taxation

There are many, often complex factors affecting the acceptance and viability of proposed taxation. It is reasonable to assume that psychologically people will reject off-hand the introduction of new taxes. Accordingly, there are several approaches that could be taken in examining the factors affecting attitudes toward the acceptance of taxation for Broadband infrastructure investment.. Kirchler, (1997) stipulates that personal values and orientation such as selfishness and altruism can affect attitudes toward taxes. Jayawardane, (2015) - in the context of examining tax compliance - states that psychological factors are the most important factors to determine the tax compliance behavior. Kirchler et al. (2008) argue that, in general, tax attitude depends on the perceived use and benefit of funds collected as well on moral, personal, and social norms. Citizen's Willingness to Pay (WTP) which can serve as a direct measure of the perceived value, utility, or benefit that an individual assigns to an outcome - in this case to support for taxation - is likely affected more by such ethical variables and perceived community or personal benefits rather than socioeconomic characteristics (Ojea & Loureiro, 2007). Alt, Preston, and Sibieta, (2010) discuss how taxes that lack transparency or are less understood (such as indirect taxes) can be more politically acceptable as they are not felt directly by the public. The authors also suggest that taxes thought to be tied to benefits can also be more acceptable as the public believe that these taxes fund benefits that they will directly receive; however, here exists a gap in public understanding of the tax system, which can hinder informed debate and accountability. They continue to posit that certain demographic groups may favor or oppose taxes prompted by their political and social motivation and interests, economic realities, and perceptions about institutional frameworks.

The Elaboration Likelihood Model

Since its introduction the Elaboration Likelihood Model of persuasion (ELM) (Petty & Cacioppo, 1984) has been instrumental in describing the effect of factors of persuasion by examining different routes of persuasion. The model posits that there are two primary routes through which persuasion can occur: the Central route and the Peripheral route. The Central route is more effective when individuals are motivated, thoughtful, and able to process the information presented; here persuasion is based on the quality of the argument. Within the ELM framework the Central route evokes careful consideration of the message content based on the prestige of the source of the message, its quality, and strength. This would be a key route when addressing members of the public that are more engaged in civic matters and knowledgeable about fiscal policies. The Peripheral route on the other hand encompasses elements such as the emotional appeal of the message, personal relevance, or the credibility of the source and may be more effective when the target audience is less engaged with civic matters (Dillard & Pfau, 2002). The Peripheral route is more effective when individuals are less motivated, not attentive, or lacking the ability to process the contents of the information, instead relying on peripheral cues, and heuristics such as the credibility of the speaker, or emotional appeals. The ELM provides a useful and practical framework that allows for the prediction of how, and under what circumstances different variables will impact the persuasiveness of a message (Booth-Butterfield & Welbourne, 2002). In the context of this study the ELM will be leveraged to describe how public perceptions of proposed hypothecated taxes can be influenced. As

Petty and Cacioppo, (1984) frame it " Of the many variables that might be manipulated in designing a product or public service campaign, one of the most important variables that is under the control of the campaign designer is the source of the message." Hence the ELM offers a general framework to examine the effectiveness of the factors affecting the persuasion of the messaging around hypothecated taxes are promoted to the public so that they are perceived as fair, necessary, and beneficial.

Theory of Planed Behavior

The Theory of Planned Behavior (TPB) (Ajzen, 2011; Ajzen, Icek, 1991) describes how such attitudes predict behavioral intention - such as the intention to support Broadband infrastructure taxation. TPB, along with the theory of reasoned action (TRA) (Madden et al., 1992) share a probabilistic approach to predicting the determinants of behavior (Dakduk et al., 2017) and have been considered here as insights of how to approach the examination of the dependent variable. In the context of the study, different normative stimuli would combine to form behavioral intention to support Broadband infrastructure taxation. Supportive norms in the form of guidance provided by influential opinions or key community leaders, politicians, influencers, or respected organizations, friend, family, etc. who strongly advocate for the tax as a necessary step to bridge the digital divide, would create social pressure to support the tax. If, on the other hand, influential groups or individuals provide cues opposing the tax, one can expect social pressure against supporting the tax. Personal norms in the form of moral obligation to support measures that reduce inequality - such us taxation for rural Broadband – would also factor in and influence behavioral intention.

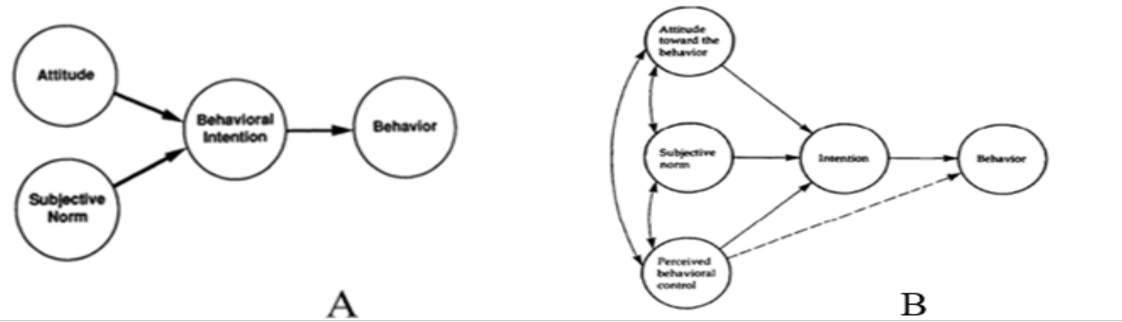


Figure 1. Path Models for the Theory of Reasoned Action (A) and the Theory of Planned Behavior (B). Source (Madden et al, 1992)

The Value-Belief-Norm Theory

Steg et al., (2005a) tested the value-belief-norm (VBN) theory of environmentalism (Stern, 2000) toward an understanding of environmental behavior, in particular how non-egotistic values and beliefs (like concerns for the environment) affect people's behavior, causing them to restrain self-serving tendencies to benefit collective interests. VBN theory is linked to the norm activation model (NAM) in the sense that personal norms are activated as an individual perceives it is his responsibility to support his personal values – resulting in this case in moral obligation to act pro-environmentally. A similar approach was adopted by Han, (2014) who showed that social norms and the feeling of pride and guilt are antecedents of intention. Schwartz, (1977) also postulates that "altruistic behavior is casually influenced by feelings of moral obligation to act on one's personally held norms". This theoretical VBN framework as it combines multiple factors that form behaviors can be adopted in predicting how personal values and social norms can affect support for Broadband infrastructure taxation.

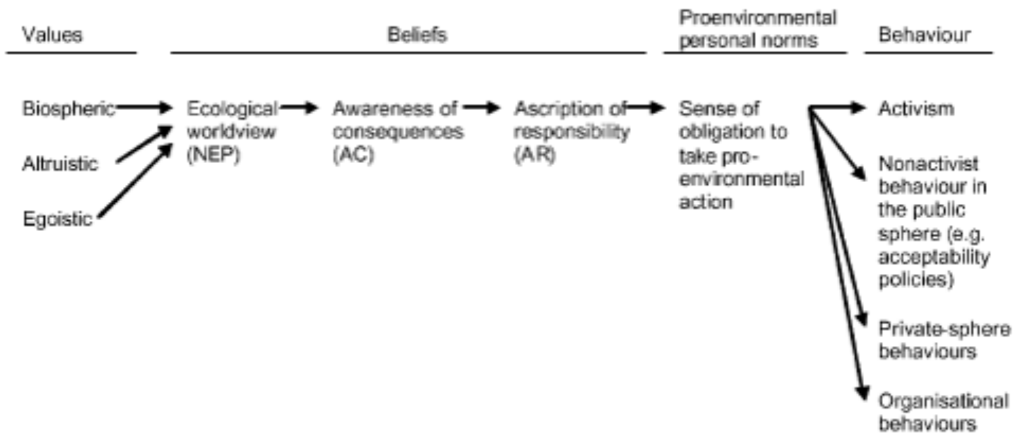


Figure 2. VBN Theory of Environmentalism (Stern, 2000).

Behavioral Reasoning Theory (BRT)

The Behavioral Reasoning Theory (BRT) is a recent theoretical framework proposing that reasons serve as important relationships between beliefs, global motives (e.g., attitudes, subjective norms, and perceived control), intentions, and behavior (Westaby, 2005). BRT explores how reasons for or against a particular behavior can influence attitude, intentions, and, ultimately, the behavior itself. BRT has been applied in contexts where decision-making is complex and influenced by multiple factors, such as the adoption of new technologies, or health-related behaviors (Lee et al., 2023; Sivathanu, 2018). BRT is used in various fields, including marketing, health services, and technology adoption, to understand why individuals choose to accept or reject certain products, services, or behaviors. In the context of this study combining BRT with LOC, is expected to enable us to predict behavioral intentions toward taxation for Broadband infrastructure by accounting for both the cognitive evaluation of reasons and the individual's perceived control over outcomes.

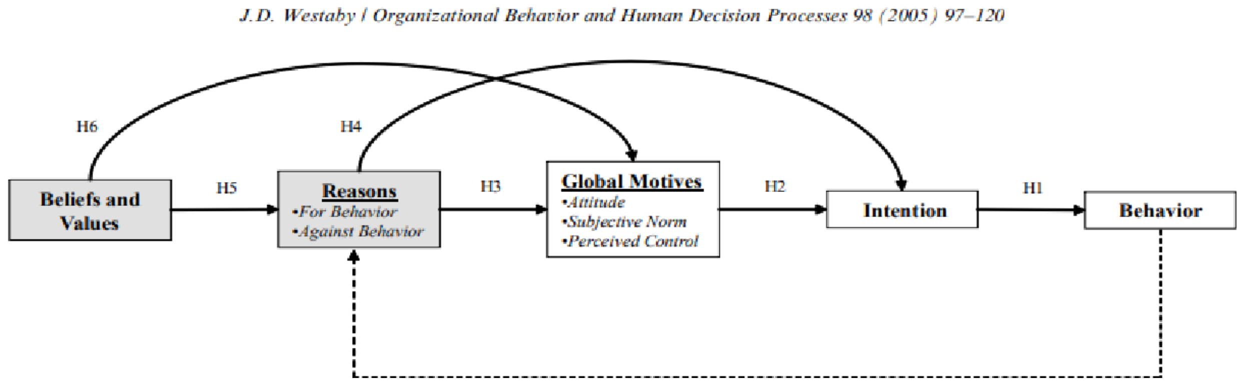


Figure 3. BRT Framework (Westaby, 2005)

Economic Inequality

The digital divide effect is also a contributing factor to economic inequality. Du and King, (2022) found that in more unequal areas, people perceive less income equality and that unfairness engendered by inequality is associated with more perceived inequality. They also stipulate that perceived inequality is a powerful predictor of psychosocial outcomes. The lack of digital infrastructure exacerbated economic inequalities in work opportunities during COVID-19, particularly in developing countries (Jia, 2024). Hypothecated taxation for Broadband, as tax revenue intended to produce a public good would enter the utility function of the agents (i.e. the taxpayers) and would add dimensionality and richness to equal sacrifice theory which advocates equal reduction of well-being, or in utility a result of paying taxes regardless of income level (Moyes, 2003; Neill, 2000). Interestingly, tolerance to economic inequality was found to be associated with less perceived inequality over time. Rural Broadband infrastructure investment, intended to close the digital divide and improve social-economic conditions in underserved areas is in effect a redistributive policy, and supporting such policies is an example of decreasing tolerance to economic inequality (García-Castro et al., 2019). Hypothecated taxation targeting the digital divide is a form of taxation that would manage to reduce economic inequality (Xiao et al., 2024) and bring about a form of distributive social justice without the controversy and practical difficulties other types of similar taxation would bring about (Rawls, 1974).

Prosocial Behavior

Prosocial behavior, a term introduced by social scientists in the 1970s to describe a wide range of behaviors, is the "voluntary behaviors intended to benefit another" (Eisenberg et al., 2007). Designing and promoting tax policy under the lens of benefiting society as a whole, can foster cooperative, altruistic, and overall socially beneficial attitudes, that would lead to public support of taxation for its prosocial impact. Brockmann, Gensschel, and Seelkopf, (2016) suggest that "even in high-trust environments with well-functioning government and civil-minded citizens, paying taxes remains a nuisance.", noting that a way to mitigate nuisance factors is by promoting immaterial rewards to increase taxpayers' "sense of ownership by earmarking it for specific purposes (hypothecation)." In alignment with Kantian ethics and deontology, Broadband internet access can be viewed as essential to protecting individual autonomy and enabling meaningful life choices. Ensuring all individuals can participate in the digital world is a matter of upholding their dignity becomes a moral imperative (Spahn, 2020). Applying Kant's vision of the public sphere as a bridge between morality and politics Buckman, (2017) argues that ensuring universal internet access is ethically imperative because it enables participation in the new public sphere, i.e. social media, digital forums, and online civic engagement.

Locus of Control

Locus of Control (LOC) is a psychological concept introduced by Julian B. Rotter in 1954, which refers to an individual's belief about the degree of control they have over events in their lives. The theory divides LOC into two primary categories: internal, where individuals believe they have control over their own outcomes through their actions, and external, where outcomes are attributed to external forces such as luck or fate (Rotter, 1954). Over time, the theory has evolved to include multidimensional aspects, such as domain-specific loci of control like environmental LOC (ELOC) (Cleveland et al., 2005) and chance LOC (CLOC) (Mautner et al., 2017). Yasa, (2020) found that locus of control strengthens the influence of perceived distributive and procedural justice on taxation compliance. Engaging the community and making the outcomes of hypothecated taxes transparent and tangible can help in enhancing their acceptance, particularly among those with an external locus of control, by providing a sense of control and visibility of benefits. Andor, M. A et al., (2022) showed that individuals with a high internal LOC are more prosocial as measured by a variety of acts - e.g., contributions to climate change mitigation and charitable organizations, sharing with others, blood donations, and participation in parliamentary elections. Alt et al., (2010) discuss various aspects of tax policy, including voter behavior and the potential benefits and drawbacks of hypothecated tax. The authors provide a comprehensive view on how the framing of tax policies, including hypothecation, can influence public support. In the context of the study, in addition to being directly influencing voting behavior, LOC - whether internal, or external

- is taking the role of the Perceived Behavioral Control component of the theory of planned behavior.

Trust in Government

Given that this research focuses on hypothecated (or earmarked) taxes – those whose revenues are explicitly designated to specific public expenditures (Doetinchem, 2010), citizen's trust in government emerges as a critical factor in building public support. Any taxation initiative by default raises the issue of trust in government. Mayer et al., (1995) and offer this definition of trust: trust is 'the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party'. Grimmelikhuijsen and Knies, (2017) complied various literature works of organizational trust that have shown that trustworthiness is conceptualized in three dimensions that can be used to scale trust in government: perceived competence, benevolence, and integrity:

- "Perceived competence: the extent to which a citizen perceives a government organization to be capable, effective, skillful, and professional."
- "Perceived benevolence: the extent to which a citizen perceives a government organization to care about the welfare of the public and to be motivated to act in the public interest."
- "Perceived integrity: the extent to which a citizen perceives a government organization to be sincere, to tell the truth, and to fulfill its promises."

Source: (Grimmelikhuijsen & Knies, 2017)

Civic Engagement

While proposing the validation of a civic engagement study (Doolittle & Faul, 2013) argue that we are increasingly evolving in a society that views problems as private. Hence other people have the resources and the burden of solving their own problems. Civic participation increases trust within a social group and affects personal beliefs that individuals can make a difference in their communities (Miranti & Evans, 2019). Active civic engagement within a community of peers promotes a sense of belonging and connectedness (Sagiv et al., 2017). Such engagement is linked to identity formation and agency, which are crucial for the thriving of both individuals and the community. Ardoin et al., (2023) highlighted how participation in civic activities can address environmental and societal issues. The study underscores the importance of civic engagement in advancing public support for initiatives aimed at societal improvement. A study by Dang et al., (2022) investigated how local civic engagement intentions at the neighborhood level are influenced by factors such as neighborhood trust, friendships, place attachment, and a sense of civic responsibility. The findings suggested that strong neighborhood ties and a sense of responsibility can enhance civic engagement, potentially leading to increased support for public initiatives. Civic engagement therefore is theorized to be a causal factor in forming attitudes toward supporting new taxation for the collective good – such as Rural Broadband infrastructure taxation.

Perceived Usefulness and The Technology Acceptance Model (TAM)

Research on Broadband adoption typically focuses on the socio-economic attributes of adopters and non-adopters. Dwivedi and Lal, (2007), empirically examined effects of variables such as age, gender, education, income, occupation, etc. and found correlations social-economic characteristics (interestingly, they showed that gender in not a significant factor in determining Broadband adaption). Kyriakidou et al., (2013) expanded this exploration by studying the effect of a wide range of social, economic, and political factors on the Broadband diffusion process. This study includes insights on the cyclical nature of technology diffusion, suggesting there is a time component into the shaping of attitudes toward Broadband adoption. Participants in a recent study in Navajo Nation acknowledged the key important of Broadband to the community and emphasized the need for funding to provide it (Arviso, 2024). Perceived usefulness of Broadband as component of a TPB model has been shown to influence adoption of Broadband in rural areas (Kalula et al., 2024). The recognition of Broadband's importance in areas like Navajo Nation suggests that as communities see the tangible benefits it offers, such as better access to education, healthcare, or economic opportunities, their perceived usefulness of Broadband would increase. Perceived usefulness of course, is a main component in the Technology Acceptance Model (TAM) (Davis, 1989) which is a widely studied and used theoretical framework. Another main component of the TAM is perceived ease of use, a construct directly impacted by self-efficacy (Bandura, 1982; Davis, 1989). As discussed earlier, the study utilizes the concept of Locus of Control as a theoretical framework. Individuals with high internal LOC are more likely to have strong self-efficacy and believe that they have the skillset to use - and benefit from - new technologies. Hence, they would be motivated to support Broadband infrastructure taxation, as they perceive it as a critical tool for improving their quality of life. The TAM model also incorporates external variables such as various socio-economic factors like age, education, income, and place of habitation (rural or urban) which will be explored in this research. Therefore, the TAM framework, as it posits that if individuals believe that using a technology will enhance their performance, or meet their needs, are more likely to support it provides an additional theoretical lens to this research.

3. RESEARCH DESIGN

Conceptual Framework

The conceptual model put forward below, incorporates components from the ELM, TPB, VBM, BRT, and TAM theories, with Perceived Economic Inequality, Civic Engagement, Trust in Government, and Perceived Usefulness of Broadband as introduced predictors. Demographic characteristics are included as control variables, although it is anticipated that most of them such as age, income, race, etc. would have a moderating effect on the independent variables. The independent variables are grouped by the ones expected to affect Prosocial Behavior (the peripheral route to persuasion); and the ones expected to affect the Credibility of Argument (the central route to persuasion). The peripheral route relies on subliminal cues such as the emotional appeal of the message, the attitude of others toward it, the likability of the message source, and other heuristics individuals rely on to quickly make decisions without extensive thought, particularly when cognitively overloaded and distracted, or lack the ability to process the information (Meinert and Krämer, 2022). These would be more effective with parts of the general population that are less engaged with detailed policy discourse and tend to form opinions without careful or thoughtful considerations of the message content. Conversely, the central route involves deep, thoughtful consideration of message content, where effectiveness is driven by the quality and strength of the argument and not by heuristic reliance, or contextual peripheral cues (Salerno et al., 2017). This route is significant when addressing audiences more engaged or knowledgeable about fiscal policies and have the cognitive resources to process the information (Jain et al., 2023). Locus of Control is an additional independent variable but is also expected to moderate variables in both routes; individual with strong external LOC are expected to rely more on the peripheral processing route; and those with high internal LOC are expected to be more likely to engage in central processing route (Hustvedt & Petty, 1992). By combining the motivational reasons to support, or not Broadband infrastructure taxation with the perceived control over outcomes, LOC adds depth, nuance, and predictive prowess to the model allowing us to explore permutations in support across different socio-political and geographic contexts and offering valuable insights for tailoring persuasive messaging and policy engagement strategies.

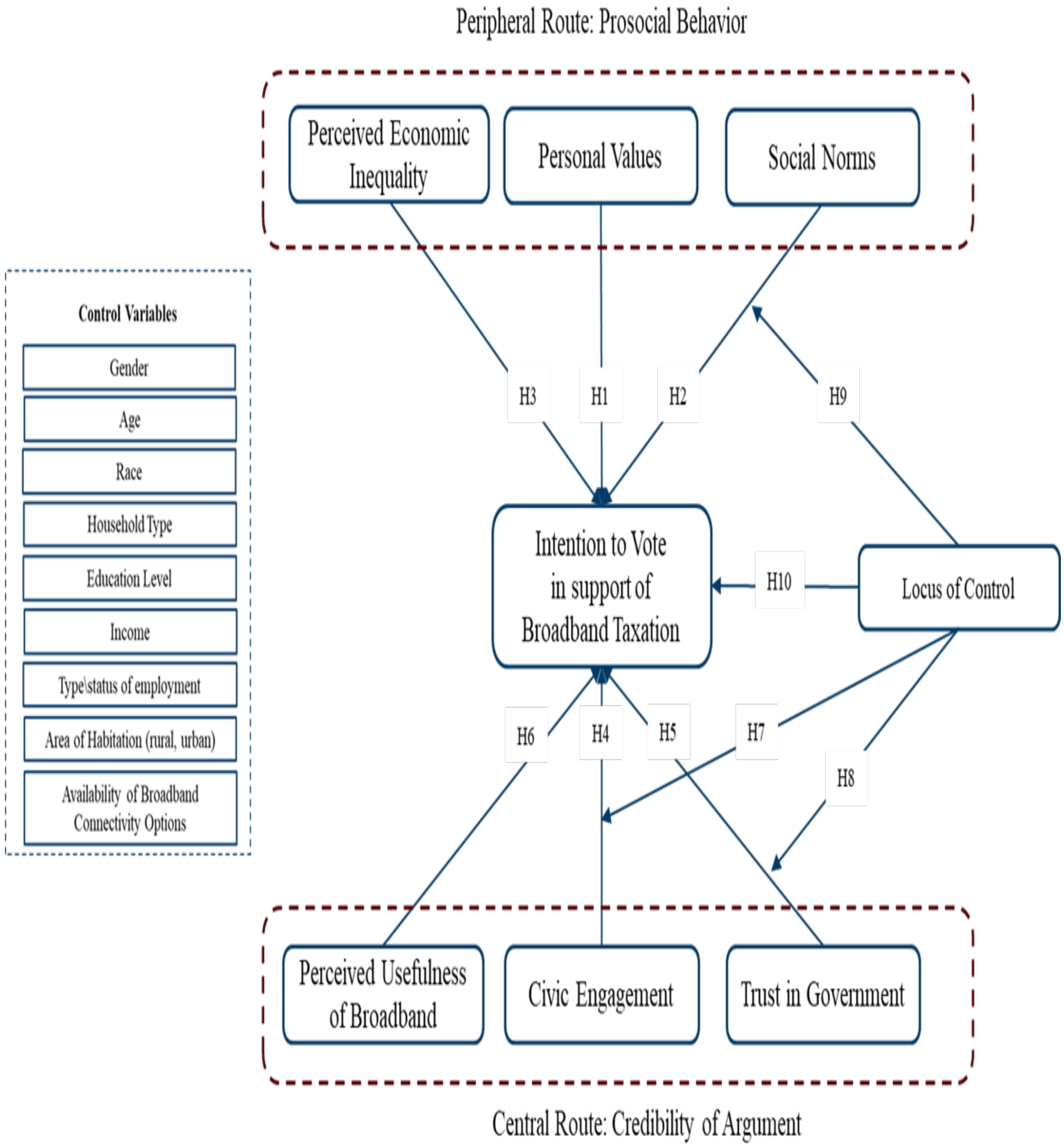


Figure 4. Conceptual model

Theoretical Development of Hypotheses

This research proposes ten (10) hypotheses presented in the below table:

H1	Personal Values (PV)	As Personal Values (PV) (egotistical vs. altruistic) trend toward supporting action for the collective benefit, intention to vote for taxation for Rural Broadband (RBB) infrastructure increases
H2	Social Norms (SN)	As Social Norms (SN) trend toward supporting action for the collective benefit, intention to vote for taxation for Rural Broadband (RBB) infrastructure increases
H3	Perceived Economic Inequality (EI)	As Perceived Economic Inequality (EI) increases, intention to vote in support of taxation for Rural Broadband (RBB) infrastructure increases
H4	Civic Engagement (CE)	As Civic Engagement (CE) increases, intention to vote for Rural Broadband infrastructure taxation increases
H5	Trust in Government (TG)	As Trust in Government (TG) increases, intention to vote for Rural Broadband (RBB) infrastructure taxation increases.
H6	Perceived Usefulness of Broadband (PU)	As perceived Usefulness (PU) of Broadband increases, intention to vote for Rural Broadband (RBB) infrastructure taxation increases
H7	Locus Of Control (LOC), CE, and intention to vote (INV) for RBB	Locus of control (LOC) moderates the relationship between Civic Engagement (CE) and the intention to vote for taxation for Rural Broadband (RBB) infrastructure; individuals with a higher internal locus of control will show a stronger positive relationship between Civic Engagement (CE) and intention to vote for taxation for Rural Broadband (RBB) infrastructure
H8	LOC, TG, and INV	Locus of control (LOC) moderates the relationship between Trust in Government (TG) and the intention to vote for taxation for Rural Broadband (RBB) infrastructure; individuals with a higher internal locus of control will show a stronger positive relationship between Trust in Government (TG) and intention to vote for taxation for Rural Broadband (RBB) infrastructure
H9	LOC, SN, and INV	Locus of control (LOC) moderates the relationship between Social Norms (SN) and the intention to vote for taxation for Rural Broadband (RBB) infrastructure; individuals with a higher external locus of control will show a stronger positive relationship between Social Norms (SN) and intention to vote for taxation for Rural Broadband (RBB) infrastructure
H10	LOC and INV	As an individual's internal Locus of Control increases, their intention to vote for taxation for Rural Broadband infrastructure increases

Table 1. Summary of Hypotheses

As posited by the VBN framework the moral aspect of a person's attitude toward action\support of a policy that may not benefit them directly but is good for the community. Values of individuals, or Personal Values are "broad desirable goals that motivate people's action and serve as guiding principles in the lives" (Sagiv et al., 2017). (Schwartz, (1992) defines values as "(1) concepts or beliefs, (2) pertaining to desirable end states or behaviors, (3) transcending specific situations, (4) guiding the selection or evaluation of behavior and events, and (5) ordered by relative importance. Values, understood this way, differ from attitudes primarily in their generality or abstractness (feature 3) and in their hierarchical ordering by importance (feature 5). The norm-activation model (NAM; Schwartz, 1977) suggests that people feel moral obligation to act in support of the common good when an individual's held norms and values are activated. The relationship between values and behavior can also be mediated by specific beliefs. Nordlund and Garvill, (2003) showed that specific awareness of the negative environmental consequence of using one's automobile mediated personal values and directly influence personal norms and willingness to cooperate. In the context of examining acceptance of environmental policies (a good-for-the-community goal) Steg et al. (2005) – based on Schwartz (1992) identify two general value orientations applicable to this study: an egotistic orientation, that is when people concentrate on prioritizing their individual, personal benefits; an altruistic orientation, that is when people are motivated by concern for the wellbeing of the community. Schwartz and Howard, (1984) define altruism as "self-sacrificial acts intended to benefit other regardless of material or social outcomes for the actor". It is therefore anticipated that people who are more concerned about the common good than their own individual interest and benefits will be more likely to support a hypothecated sales tax that aims to bridge the Broadband inequality divide.

- ***Hypothesis 1 (H1):*** *As Personal Values (PV) (egotistical vs. altruistic) trend toward supporting action for the collective benefit, intention to vote for taxation for Rural Broadband (RBB) infrastructure increases.*

Social norms are typically thought of as customary rules that constrain behavior by eliciting conformity (Bicchieri & Mercier, 2014). In a study and meta-analysis of 83 studies, Oyserman et al., (2002) examined whether Americans are more individualistic vs. collectivistic, highlighting the core element of collectivism as the assumption that "groups bind and mutually obligate individuals" (Oyserman et al., 2002). People who identify themselves as a member of a group are more likely to internalize the group's beliefs and goals (Shulruf et al., 2007). Collectivism implies that group membership is a central part of a person identity (Hofstede, 1980). Moreover, Marcus and Kitayama, (1991), and Gudykunst, (1997) showed that individuals who feel part of a social group desire to save face and keep harmony within the group and that their behavior reflects the group's goals and needs (such as acting for the common good). According to Schwartz, (1990) such communal societies are characterized by mutual obligations and expectations of their members (based on status), and in these societies individuals are simply a component of group. This description focuses on collectivism as a social way of being, oriented toward in-groups and away from out-groups (Oyserman, 1993). In this way the collective group can inform the behavior of the individual on matters such as voting in support of rural Broadband infrastructure investment. In the context of this study, individuals who are part of a group that supports voting for taxation for rural Broadband are expected to align their behavior with that of their peers; and vice versa: if the social group(s) they belong to oppose such taxation, the individual members will too, oppose such taxation.

- ***Hypothesis 2 (H2): As Social Norms (SN) increasingly trend toward supporting action for the collective benefit, intention to vote for Rural Broadband (RBB) infrastructure taxation increases.***

Research suggests that people get accustomed to economic inequalities and develop indifference toward policies that aim to reduce such inequality (García-Castro et al., 2020). Gimpelson and Treisman, (2018) observe that there is a strong link between high income inequality and demand for redistribution in democracies. They continue to argue that we should not expect to see such a strong correlation between inaccurate "perceptions of inequality and support for government redistribution." There can be misconceptions that affect how people respond to perceived inequality, similar to inflation, unemployment, etc. (Gimpelson & Oshchepkov, 2012). People can often misperceive facts about social phenomena (Hochschild, 2001). Sands, (2017) showed that exposure to socioeconomic inequality in an everyday setting negatively affects willingness to publicly support a redistributive economic policy. Brown-Iannuzzi et al., (2021) found evidence that beliefs about the fairness of inequality and redistribution mediated the relationship between inequality and support for redistribution, suggesting that perceptions of inequality and socioeconomic rank each have a unique impact on support for redistribution because they heighten concerns about fairness and deservingness. Hypothesis 3 intends to assess the impact of perceived economic inequality in support for Broadband infrastructure taxation.

- ***Hypothesis 3 (H3): As Perceived Economic Inequality (EI) increases, intention to vote for Rural Broadband (RBB) infrastructure taxation increases.***

Civic engagement has been defined as the process of believing that one can and should contribute to the betterment of his or her community. Higher civic engagement results in civic-minded behaviors which are actions people take to make a difference in their community (Ehrlich, 1997). Individuals who engage in their communities develop social relationships, networks, and norms that build social trust (Putnam, 1995). Moreover, by engaging within the structures of social and political institutions citizens can participate and influence the process and decisions pertaining to taxation. In an experimental study (Lamberton et al., 2018) found that when tax payers were given the opportunity to express preference their tax compliance experience changed. Smith and Stalans, (1991) suggest that providing taxpayers the opportunity to express their preferences can be a way to encourage tax compliance with positive incentives. When people feel that their opinions are considered and their voices are heard, they are more inclined to accept and support taxation proposals that they perceive as fair and beneficial for society. Hypothesis 4 will test the concept that the more engaged in her community a person is, the more likely she is to support action toward the collective good such as a Broadband infrastructure tax.

- ***Hypothesis 4 (H4):*** *As Civic Engagement (CE) increases, intention to vote for Rural Broadband (RBB) infrastructure taxation increases.*

Trust in government is the confidence of the citizens in the actions of government to do what is right for the people. Public trust enables acceptance of public institutions and policies, such as law enforcement, regulations, and taxation. Trust in government can be influenced by financial transparency, effective communications, and perceptions of competency and performance of the government agencies responsible for utilizing public funds. Trust in government fosters political participation, strengthening institutional legitimacy and social cohesion. Support for new taxes is implicitly predicated on the competence, benevolence, and integrity to those who manage the funds (Grimmelikhuijsen & Knies, 2017). Jimenez and Iyer, (2016) found that trust in government is related to fairness perception which in turn is related to compliance intentions; and that trust in government has a significant influence on both perceived fairness of the tax system. Birskyte, (2014) states that "when honored, trust promotes feelings of goodwill between individuals, it strengthens democracy, and reduces transaction costs in economic exchange and compliance decisions. Trust in government therefore is expected to significantly affect Broadband infrastructure investment; the construct will be explored in below hypothesis.

- ***Hypothesis 5 (H5): As Trust in Government (TG) increases, intention to vote for Rural Broadband (RBB) infrastructure taxation increases.***

Perceived usefulness refers to the perception that a technology or service can improve the life and economic opportunity of an individual (Davis, 1989). A person who believes that Broadband internet offers tangible benefits and positively impacts her life in meaningful ways, will likely support Rural Broadband infrastructure taxation. Moreover, positive experiences with Broadband usage such as easy use, product features, rich content, etc., reinforce the perception of usefulness and foster adoption. (S. Chen et al., 2020) found that perceived usefulness, perceived ease of use, social norms and network externality are external variables that have significant positive influence on behavioral intention to adopt Broadband by senior citizens. Broadband internet perceived usefulness has been widely researched. Here it is added as an additional determinant of the intention to accept taxation for Broadband infrastructure.

- ***Hypothesis 6 (H6): As perceived Usefulness (PU) of Broadband increases, intention to vote for Rural Broadband (RBB) infrastructure taxation increases.***

Locus of control has been shown to have a moderating role in various behavioral intentions, such as health behaviors and scholastic achievement. Mautner et al., (2017), concluded that LOC, and internal LOC in particular, impacts self-rated health and can predict the rate of emergency room visits. Self-efficacy, suggesting strong internal LOC, has also been established as a strong predictor of academic performance (Nowicki et al., 2004; Oshakuade et al., 2023). Individuals with a high internal LOC are likely to see voting as a direct and effective means of influencing political discourse. This suggests that, similarly, LOC may affect the extent to which civic engagement - such as participating in community activities, staying informed about political issues, or volunteering - translates into the intention to vote, particularly in support of initiatives that benefit society, such as earmarked taxation for Broadband.

- ***Hypothesis 7 (H7): Locus of control (LOC) moderates the relationship between Civic Engagement (CE) and the intention to vote for taxation for Rural Broadband (RBB) infrastructure; individuals with a higher internal locus of control will show a stronger positive relationship between Civic Engagement (CE) and intention to vote for taxation for Rural Broadband (RBB) infrastructure.***

In a recent study, Pauer et al., (2024) found that personal control has a significant moderating effect on the trust individuals bestow on powerful or authoritative others.

Although political trust tends to be viewed as a heuristic, emerging from mental cues by which individuals form opinions about government (Lim & Moon, 2020), internal political self-efficacy has been shown to lead in trust in government (Parent et al., 2005). Wallrich et al., (2021) found that civic understanding, which is closely linked to civic engagement, is conceptually associated with an internal LOC. It is then hypothesized that individuals with a high internal LOC are likely to perceive the government as a trustworthy entity, deserving their vote to achieve beneficial outcomes. Hence, individuals with a high internal LOC, who trust the government, are more likely to see proposed hypothecated taxation for Broadband as an opportunity where their vote can contribute to a positive societal outcome.

- ***Hypothesis 8 (H8): Locus of control (LOC) moderates the relationship between Trust in Government (TG) and the intention to vote for taxation for Rural Broadband (RBB) infrastructure; individuals with a higher internal locus of control will show a stronger positive relationship between Trust in Government (TG) and intention to vote for taxation for Rural Broadband (RBB) infrastructure.***

Locus of control is associated with higher political efficacy and greater participation in civic activities, including voting (A. Cohen et al., 2001; Solhaug, 2006; Van Stekelenburg et al., 2016). Studies have shown that individuals with an internal locus of control are more likely to feel responsible for societal outcomes (Ajzen, 2002, 2011; Cleveland et al., 2005; Ng et al., 2006). It is hypothesized, therefore, that those with an external LOC can be expected to be more influenced by social norms, showing a stronger intention to vote in favor of taxation when they perceive that others in their community support it. This effect is expected to be particularly significant for initiative-specific hypothecated taxation as perceived, broad social support for the initiative itself – or lack of it, could strongly sway the intention of individuals with external LOC to support investment for it overall.

- ***Hypothesis 9 (H9): Locus of control (LOC) moderates the relationship between Social Norms (SN) and the intention to vote for taxation for Rural Broadband (RBB) infrastructure; individuals with a higher external locus of control will show a stronger positive relationship between Social Norms (SN) and intention to vote for taxation for Rural Broadband (RBB) infrastructure.***

Individuals with high internal LOC tend to be involved in the political process. Deutchman, (1985), found significant relationship between internal control and voting behavior. Andor, M. A et al., (2022) propose that "locus of control beliefs provide a psychological underpinning for the two most commonly studied motives for giving – pure and impure altruism." Andreoni, (1989) posits a general model of giving that includes a "warm glow", proposing that contributing to public good for simply altruistic reasons or because they get some benefit from giving, a more selfish motivation, or "impure altruism". Individuals' beliefs and perceptions about their locus of control, in part, determines their attitude toward contributing to the public good. Exploring the role of social influence on political participation across various countries
Bimber and Gil De Zúñiga, (2022) demonstrated that social norms significantly affect voting behavior, particularly among individuals who perceive lower personal efficacy, aligning with the characteristics of an external LOC. These studies collectively suggest that individuals with a higher external LOC are more susceptible to social norms when

forming behavioral intentions, such as voting for taxation policies. While developing promotional policies for proposed hypothecated taxation recognizing the heterogeneity of LOC can serve as an insight in developing effective messaging strategies. For members of the public with an internal locus, emphasizing benefits of their contribution might be effective. Conversely, for those with an external locus, providing strong evidence of past successes and strict accountability measures could be best way to promote proposed hypothecated taxation. Individuals perceiving tangible social benefits from hypothecated taxations would experience a sense of agency and responsibility that would increase support for hypothecated taxation. Individuals with doubts about the appropriate use of earmarked funds or believing that such measures are just another way for the government to impose taxes would have reduced support for hypothecated taxes. Policy makers can affect such attitude with effective, customized messaging, demonstrating transparency so that individuals with an external LOC can come to support hypothecated taxes by reducing their skepticism and increase their trust in the process.

- ***Hypothesis 10 (H10): As internal Locus of Control (LOC) increases, so does the intention to vote for taxation for Rural Broadband infrastructure.***

The intention to vote is influenced by multiple factors, including how much individuals believe that their vote can make a difference (Beck et al., 2002). Understanding individual differences in locus of control (LOC) can provide valuable insights into why some people are more likely to vote than others, even when they are similarly civically engaged. Blanchard and Scarboro, (1972) examined the predictive value of LOC concerning voting behavior among college students. Although their study did not find a significant correlation between LOC and voting behavior, it highlights the complexity of factors influencing political participation and suggests that LOC may interact with other variables. Gootnick, (1974) compared unidimensional and multidimensional approaches to LOC in relation to political participation among college students. The study found that certain dimensions of LOC are significantly correlated with political engagement, indicating that individuals who perceive control over political outcomes are more likely to participate in political processes. The proposed research hypothesis provides for additional opportunities to deepen our understanding of the role of LOC within the Elaboration Likelihood Model (ELM), particularly as it pertains to the choice of persuasion routes. By examining how individuals with different LOC dispositions engage with the central and the peripheral route, this study can shed light on the mechanisms that drive support for policies like hypothecated taxation for rural Broadband infrastructure. This approach would further add to extant theory by offering new ways to explore the role of the locus of control in constructing persuasive communication strategies.

4. METHODOLOGY

Participants and Procedure

The population of interest of this study, i.e. the group about which we want to draw conclusions (Babbie, 2020) is the voting population of the United States – those eligible and able to assess and participate in sociopolitical issues. These individuals will also be the unit of observation, that is the level at which data will be recorded and analyzed. Hence, the unit of analysis and interpretation of the data would be individuals living in the United States, older than 18 years of age, that is all adults of voting age. The respondents were recruited through a Cloud Research online survey which included qualifying questions to ensure that they belong to the population of interest. Using a confidence level of 95%, 0.5 for standard deviation, and a margin of error (confidence interval) of +/- 5%, the size of the sample required for this study was calculated to be 385 respondents. However, to enable a robust and nuanced multi-group analysis, using techniques such as multiple-group regression and structural equation modeling with partial least squares (SEM-PLS), the sample size was increased to 450 participants. CloudResearch (CloudResearch, n.d.) was set to poll participants evenly across rural, urban, and suburban geographic settings, with 150 respondents in each group. This sampling strategy was designed to ensure sufficient representation within each subgroup, enhance the stability and reliability of model estimation, and support generalizable inferences across diverse segments of the population, while also promoting good model fit and analytical rigor in the multivariate framework. Overall, calculating the appropriate sample size for the study was based on balancing statistical, logistical, and practical considerations such as managing costs and resources.

Area of habitation and zip code information of the respondents will be used to designate their place of habitation as living in urban, suburban, or rural areas per the classification provided by the United States Census Bureau (US Census Bureau, 2020). The data for the study was collected by a quantitative internet-based survey, constructed in Qualtrics, and administered through Cloud Research. Participants were nominally compensated for the involvement and time commitment. Respondents were asked to indicate their level of agreement with a series of statements on a 7-point Likert scale, ranging from "strongly disagree" to "strongly agree.", selected for effectively capturing the complexity of respondent attitudes, resulting in a methodologically robust instrument that enabled rigorous analysis.

Measurements

Concerns about the reliability of a study rise when the data collection method employed allows for ambiguities in interpretation that in turn do not generate consistent results (Babbie, 2020). The study is using an appropriately constructed and validated survey instrument that is expected to produce the same, or very similar results every time we applied it to the study subjects. The survey items were adopted by existing and validated scales (see APPENDIX A) and were further vetted to ensure that they are clear, unambiguous, concise, and within the ability of the respondents to comprehend and answer, thus allowing for very little subjectivity and greatly alleviating any concern about varying interpretations by the respondents. The survey instrument also included a set of control variables such as gender, employment status, and geographic classification (urban, suburban, rural) which were used to categorize respondents and facilitate subgroup comparisons in the analysis. Moreover, several socioeconomic control variables were collected using ratio or ordinal-level measurements. These included indicators such as education level, household income, and age. Finally, since the nature of the topic requires self-reporting on a socially and politically sensitive matter, additional questions were included to control for social desirability (SD) bias. Social desirability reflects the tendency of individuals to respond to questions in a way they believe will make them be viewed favorably by others, as opposed to being truthful of their real attitudes and opinions (Edwards, 1957). The Brief Social Desirability Scale (BSDS), (Haghighat, 2007) was used to control for SD, a condensed, 4-item scale that has been used in similarly sensitive studies (Burns et al., 2019; Owens, 2023; Torstein et al., 2016). The instrument was validated following the procedure established by Straub, (1989) which outlines a systematic sequence of steps (pretest, technical validation, pilot test, and then full implementation). Though this study does not directly include behavioral follow-up, the inclusion of well-theorized and previously validated constructs reinforces its methodological soundness. The survey instrument can be found in Appendix C.

Research Considerations

Participation to the study was completely voluntary. Given the relevance of the research topic, it is anticipated that interest in participation will be strong, as most individuals will have a natural interest to share their views and express their opinions. The questions used in the survey instrument are not of a sensitive or controversial nature, making this a low-risk research subject for the study subjects, in line with standard ethical research protocols. There was no foreseen, or anticipated reason that the study would cause any harm to any participants. Regardless, all efforts were made to ensure confidentiality to further promote voluntary participation (Babbie, 2020). Participants were informed that their responses would be treated with strict confidentiality, and no data was collected that could lead to identification of individual responses, guaranteeing anonymity. There was no reason to collect\retain any personal identification data after the survey data is collected, as all correlations were made based on what zip code respondents live in – not who they are.

The straightforward nature of the proposed topic also serves to mitigate any concerns about the validity of the study, i.e. how well will the measurements capture the essential components of the topic being examined (Babbie, 2020). The survey questions proposed for the study were leveraged from existing, previously validated scales and contain no ambiguity that may cause face validity (e.g., asking how we feel about paying additional taxes for better internet is a subject all of us can readily grasp and opine upon). The topic of the study contains no 'shade' of anything that could be construed as controversial, socially offensive, or undesirable. Therefore, individuals were expected to openly express their opinions, ergo there was no reason to examine other specific behaviors that may point toward what they believe. Also, since the overall concept presented to the subjects of the study is specific and limited in range and the survey items are closely aligned with the operational definitions of the variables the researcher expects no issue with content validity. Some possible validators for the study could be considered around the logical relationships of the variables and how they related to any external criteria we may consider. For example, we would expect a relationship between age and income level and being willing to pay a tax for Broadband. This would be a test of predictive validity. Similarly, we can reasonably conclude that an individual with a family including school-age children who lives in a rural area would be strongly inclined to support Broadband taxation. Such consistency in the expected direction and strength of relationships across subgroups (e.g., political orientation, geographic setting, etc.) can be used to validate the underlying framework and would be a test of the construct validity of the study.

5. DATA COLLECTION AND ANALYSIS

Informed Pilot

An informed pilot trial run was conducted to evaluate the survey instrument by a panel of experts and stakeholders in the research in order to help ensure that the questions are effective in gathering reliable and valid data from the respondents. Four FIU DBA students were recruited, along with one professor from a business department of a major university, and two members of the general public. As a first step, the participants were advised in person of the scope and intent of the informed pilot. Subsequently, they received emails with a cover letter providing an overview of the study, the theoretical model, and the constructs, as well as detailed instructions as to how to evaluate the fitness of the survey questionnaire. A link to a version of the survey instrument in Qualtrics intended for the informed pilot effort was also included. The researcher held in person, and\or over the telephone meetings with each participant prior to their review to clarify expectations; and pursuant to their review to discuss their input.

The panel was asked to assess the survey for clarity, appropriateness for the target audience, and accurate measuring of the intended variables. The questions were checked for being double-barreled, loaded, or leading as these could introduce bias or confusion. Emphasis was placed on checking for ambiguities and critiquing the structure to ensure that the survey is constructed in a way that is easy for respondents to understand and answer. After gathering insights and feedback, several minor revisions were made based on the input of the panel, such as making grammatical adjustments to ostensibly awkward translations (from Spanish to English) involving the PEIEL scale (García-Castro et al., 2020), correcting typos, fine-tuning the income level scale, and overall improving the questionnaire flow as built in Qualtrics. Additionally, the informed pilot allowed the researcher to gauge a range of time required to complete the survey which averaged between 3 and 7 minutes.

Pilot

Data Cleaning

Once these minor adjustments were made to the survey instrument as a result of the informed pilot, the data survey was launched on the Cloud Research Connect platform. The data collection proceeded at a brisk pace and in short order 142 responses were collected out of a target of 150. The platform paused the collection automatically at 142 because the average duration recorded by the participants was 10:16 minutes which was higher that the estimated 6 minutes (participant compensation was based on a 6 minute duration for the survey). This was an important finding which resulted in an adjustment of the allotted time during the full study. Regardless, 142 participants was still adequate for the purposes of the pilot. Once acquired, the data was screened systematically to identify issues pertaining to missing and incomplete responses, speeding through the survey, not successfully answering the attention questions, and detecting any outliers. All respondents consented to participate, and all were US Citizens of voting age. The Cloud Research Connect platform reported the IP addresses of the respondent so as an additional precaution these IP addresses were checked and confirmed to have originated in the United States.

Speeding and Missing Data

Of the 142 respondents who engaged in the survey, 140 completed it successfully. During initial validation runs by the researcher, it became obvious that the minimum amount of time possible to complete the survey when all the questions were thoroughly read and carefully examined was around 3 minutes. Accordingly, 3 participants were excluded because they finished the survey under 3 minutes. The longest it took a participant to complete the survey was 23 minutes, which was considered reasonable. The resulting set of 137 responses were not missing any of the data.

Attention Check Questions

The survey contains 4 attention check questions interspersed throughout the body of the instrument. Out of the 137 that made it to this stage, 3 responders failed to correctly answer one or more of these and were therefore discarded bringing the working dataset down to 134.

Three (3) additional participants were excluded because their CAPTCHA score was <0.5. This score was captured by Qualtrics who analyzes collected data to identify possible fraud attempts. The Qualtrics CAPTCHA guidelines state that a score less than 0.5 suggests that the respondent is likely a bot and it is therefore best to discard the corresponding data (Qualtrics, n.d.). The removal of the 3 response that failed this check brought the number of screened responses down to 131.

The below table shows the distribution of the time elapsed in taking the survey for the remaining 131 responses:

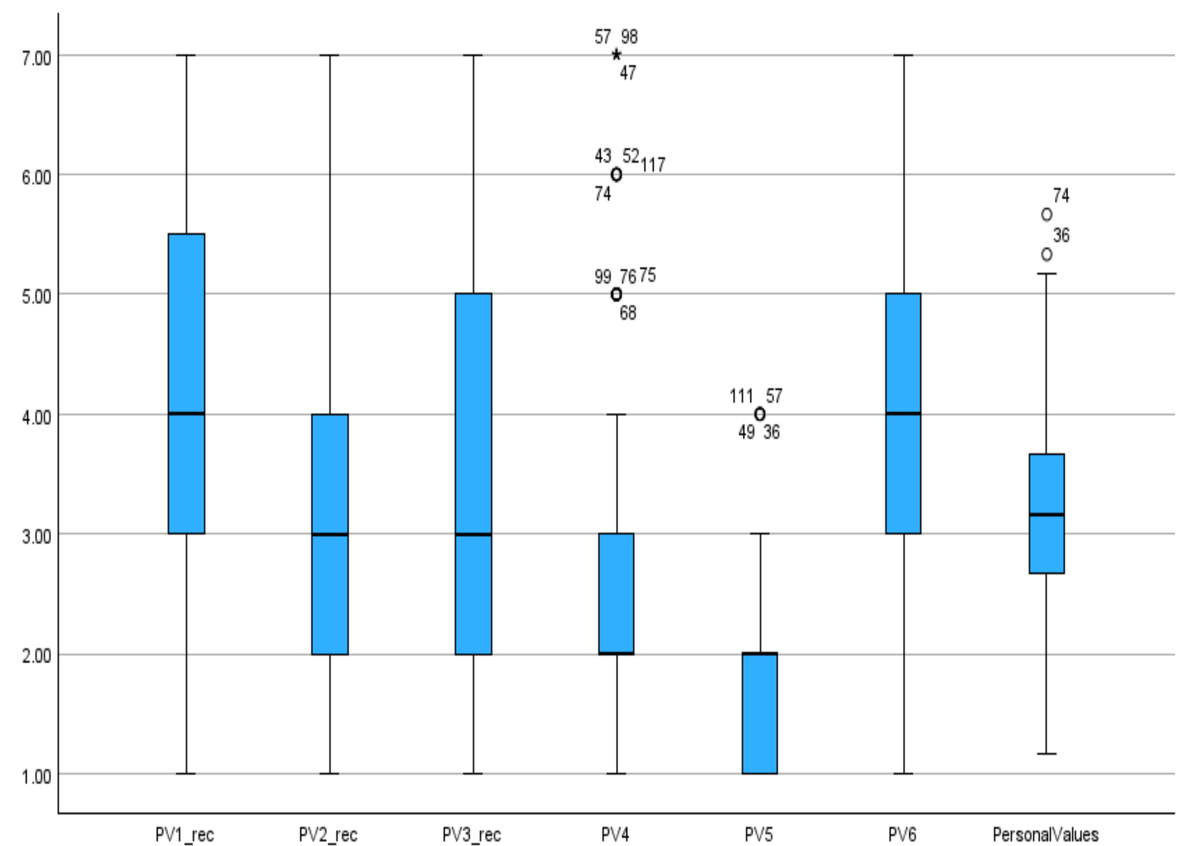
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Duration	131	216	1381	551.24	251.448
Valid N (listwise)	131				

Table 2. Pilot Completion Time (in seconds)

Outliers

The dataset of these 131 responses was further examined to identify any extreme values that could have an adverse effect to further data analysis. The data analysis was conducted the SPSS software suite (IBM Corp., 2025). Boxplots for the indicators of each variable were created. The below depicts the distribution of the data for the Personal Values (PV) indicators. Indicators PV1, PV2, and PV3 were recoded to align their respective data representations. Indicator PV4 has 11 extreme values. Indicator PV5 has 4 extreme values. The aggregate PV variable demonstrates a largely normal distribution with 2 extreme values.

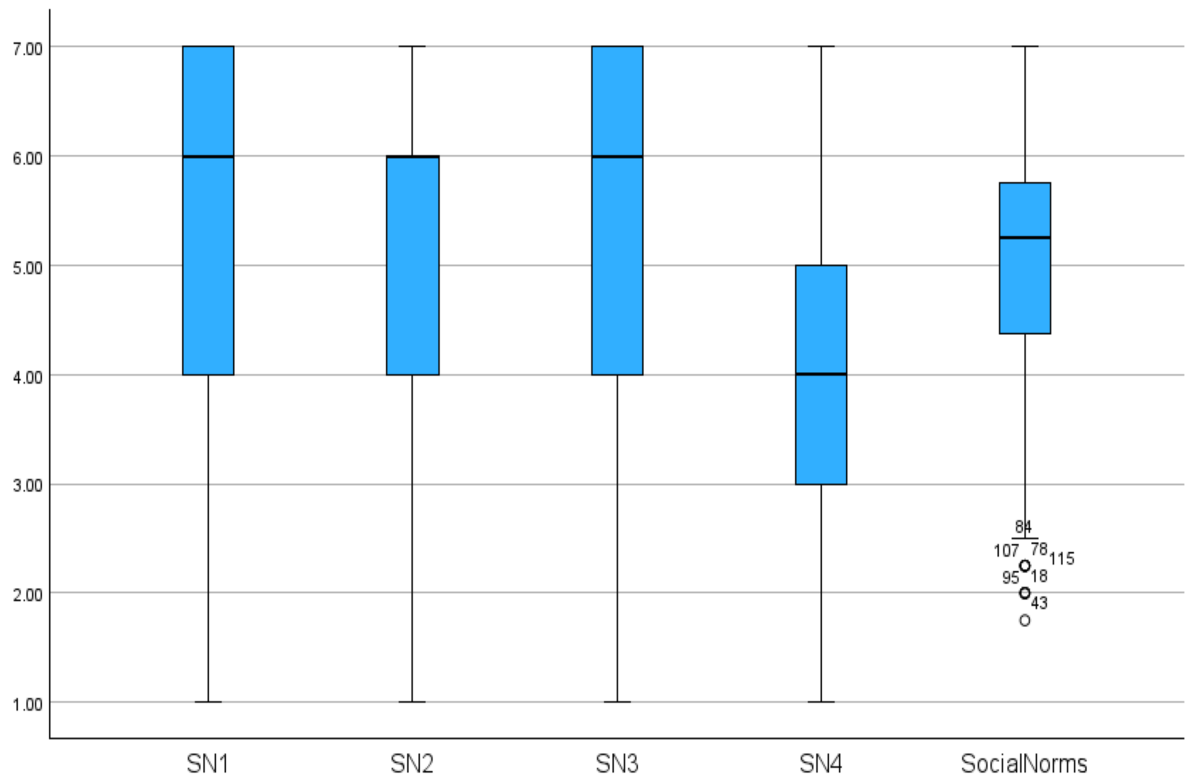


Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
PV1_rec	131	6.00	1.00	7.00	4.2672	1.53334	2.351
PV2_rec	131	6.00	1.00	7.00	2.9313	1.35414	1.834
PV3_rec	131	6.00	1.00	7.00	3.5878	1.61660	2.613
PV4	131	6.00	1.00	7.00	2.6412	1.42001	2.016
PV5	131	3.00	1.00	4.00	1.9389	.75198	.565
PV6	131	6.00	1.00	7.00	4.0305	1.53392	2.353
Valid N (listwise)	131						

Table 3. Pilot Personal Values (PV)

The Social Norms(SN) indicators have no extreme values and moderate variability. However, the aggregate SN variable shows 7 extreme values distribution.

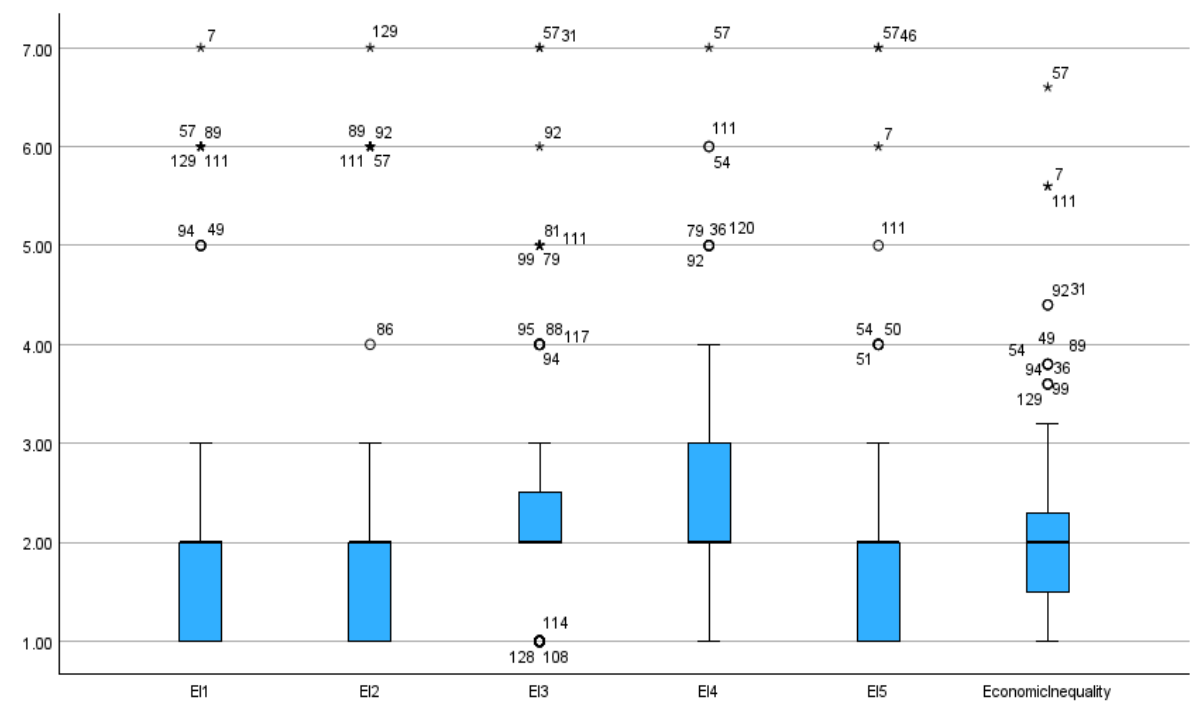


Descriptive Statistics

	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation	Variance
SocialNorms	131	5.25	1.75	7.00	647.75	4.9447	1.24587	1.552
SN1	131	6.00	1.00	7.00	690.00	5.2672	1.69081	2.859
SN2	131	6.00	1.00	7.00	669.00	5.1069	1.62316	2.635
SN3	131	6.00	1.00	7.00	715.00	5.4580	1.54053	2.373
SN4	131	6.00	1.00	7.00	517.00	3.9466	1.35484	1.836
Valid N (listwise)	131							

Table 4. Pilot Social Norms (SN)

All of the Perceived Economic Inequality (EI) indicators have many extreme data >5. The aggregate EI variable also has many extreme values, although its distribution is substantially normal.

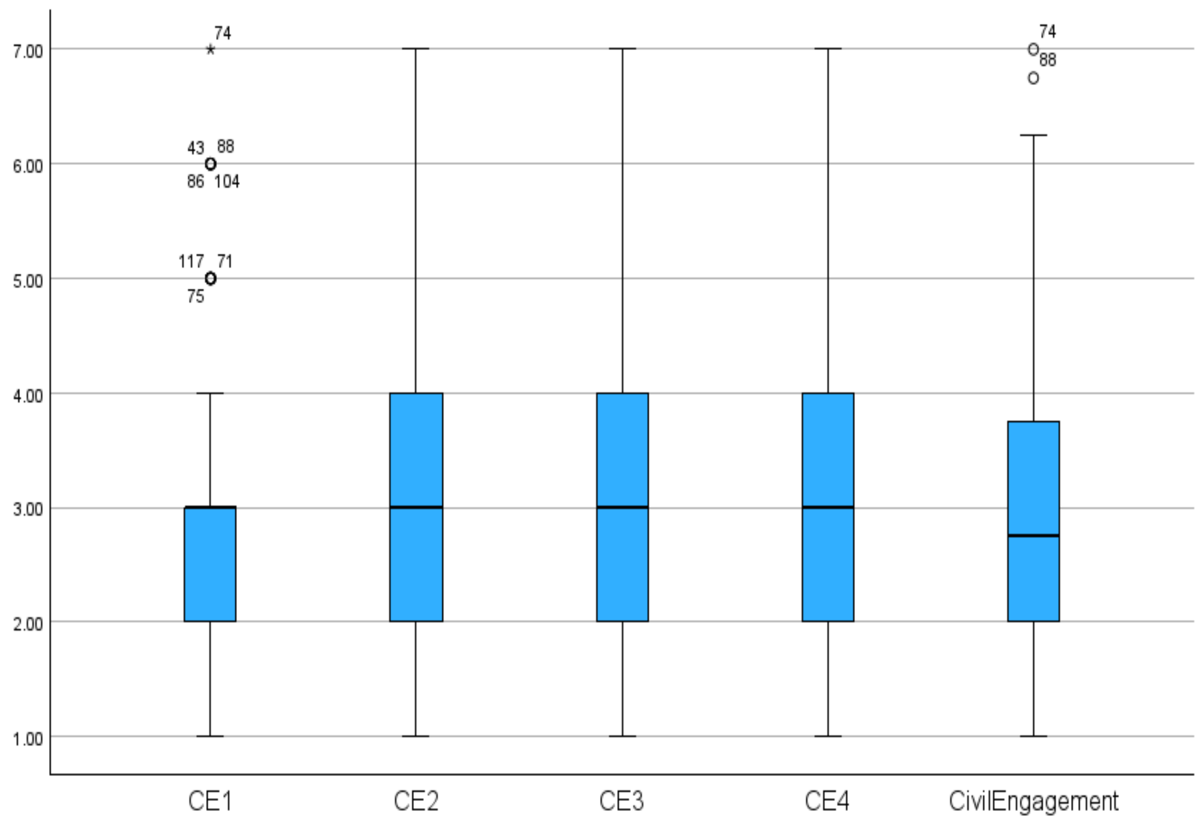


Descriptive Statistics

	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation	Variance
EconomicInequality	131	5.60	1.00	6.60	274.20	2.0931	.92464	.855
EI1	131	6.00	1.00	7.00	264.00	2.0153	1.20884	1.461
EI2	131	6.00	1.00	7.00	269.00	2.0534	1.24846	1.559
EI3	131	6.00	1.00	7.00	295.00	2.2519	1.23003	1.513
EI4	131	6.00	1.00	7.00	291.00	2.2214	1.14549	1.312
EI5	131	6.00	1.00	7.00	252.00	1.9237	1.14770	1.317
Valid N (listwise)	131							

Table 5. Pilot Perceived Economic Inequality(EI)

In the Civic Engagement (CE) variable only CE1 has extreme values (>5) as shown in the below table. With the exception of CE1 the distributions are fairly symmetric.

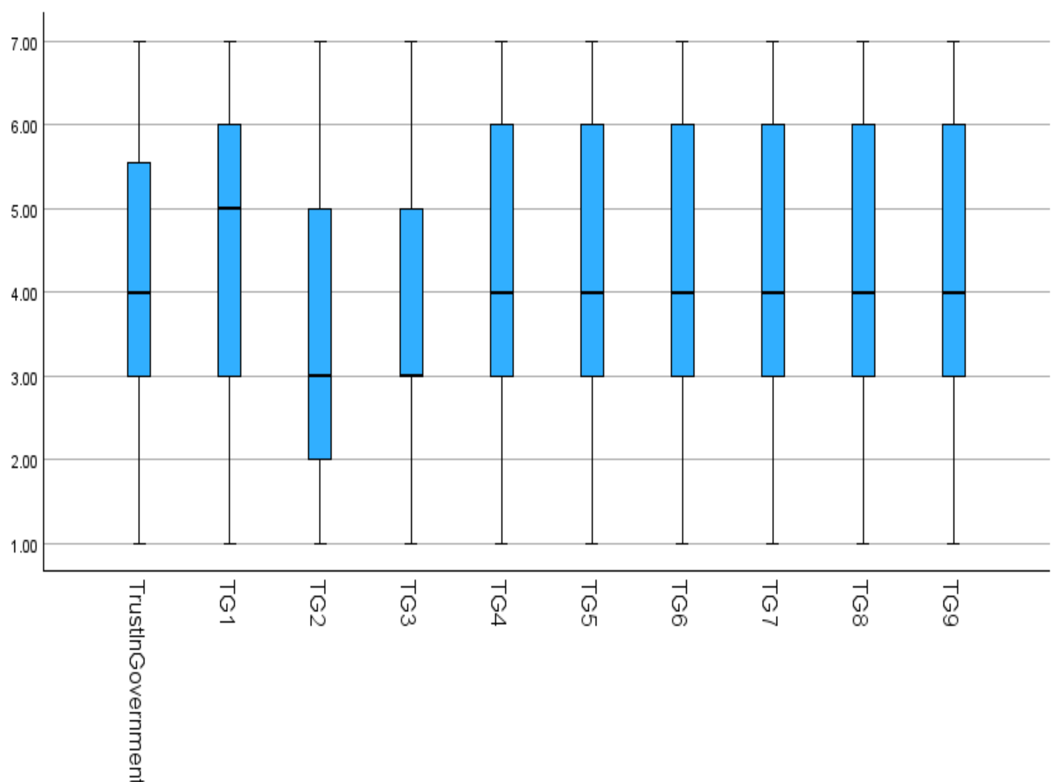


Descriptive Statistics

	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation	Variance
CivilEngagement	131	6.00	1.00	7.00	391.25	2.9866	1.37152	1.881
CE1	131	6.00	1.00	7.00	364.00	2.7786	1.31436	1.728
CE2	131	6.00	1.00	7.00	409.00	3.1221	1.53434	2.354
CE3	131	6.00	1.00	7.00	396.00	3.0229	1.51640	2.299
CE4	131	6.00	1.00	7.00	396.00	3.0229	1.57121	2.469
Valid N (listwise)	131							

Table 6. Pilot Civic Engagement (CE)

The indicators of the Trust in Government (TG) variable show no extreme values:

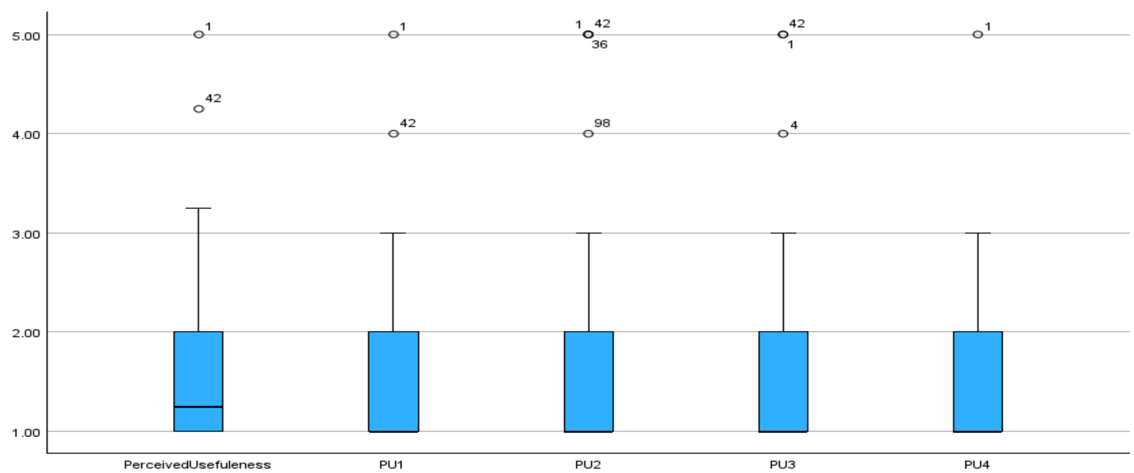


Descriptive Statistics

	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation	Variance
TrustInGovernment	131	6.00	1.00	7.00	545.44	4.1637	1.56731	2.456
TG1	131	6.00	1.00	7.00	608.00	4.6412	1.86493	3.478
TG2	131	6.00	1.00	7.00	469.00	3.5802	1.57360	2.476
TG3	131	6.00	1.00	7.00	508.00	3.8779	1.63624	2.677
TG4	131	6.00	1.00	7.00	565.00	4.3130	1.80207	3.247
TG5	131	6.00	1.00	7.00	557.00	4.2519	1.79890	3.236
TG6	131	6.00	1.00	7.00	539.00	4.1145	1.78300	3.179
TG7	131	6.00	1.00	7.00	566.00	4.3206	1.82406	3.327
TG8	131	6.00	1.00	7.00	545.00	4.1603	1.74452	3.043
TG9	131	6.00	1.00	7.00	552.00	4.2137	1.80601	3.262
Valid N (listwise)	131							

able 7. Pilot Trust in Government (TG)

The indicators of the Perceived Usefulness (PV) variable have <5 extreme values:

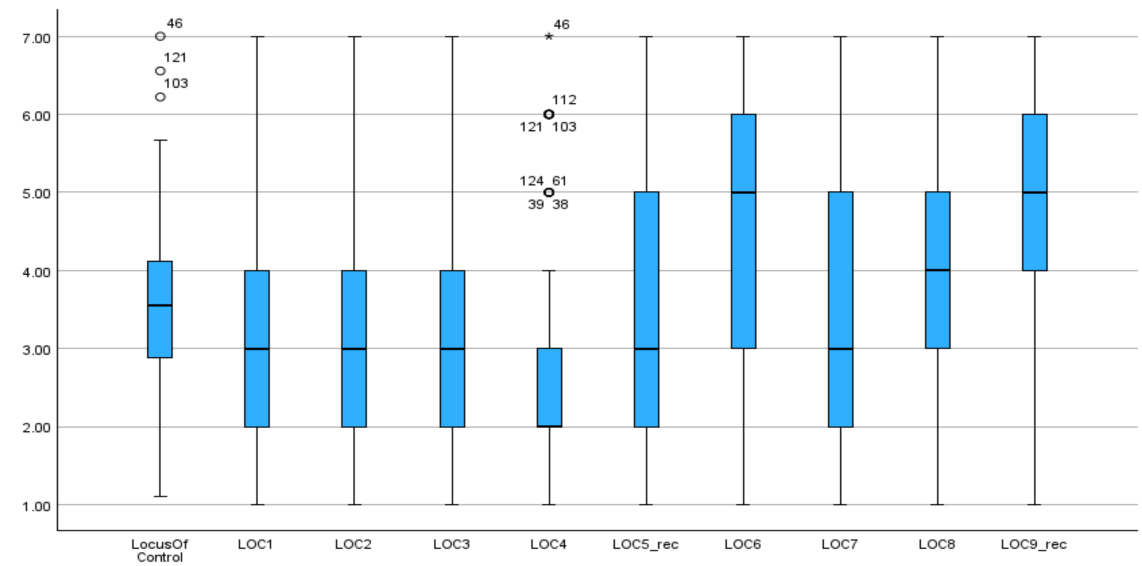


Descriptive Statistics

	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation	Variance
PerceivedUsefuleness	131	4.00	1.00	5.00	197.25	1.5057	.65153	.424
PU1	131	4.00	1.00	5.00	198.00	1.5115	.68350	.467
PU2	131	4.00	1.00	5.00	204.00	1.5573	.81486	.664
PU3	131	4.00	1.00	5.00	198.00	1.5115	.75820	.575
PU4	131	4.00	1.00	5.00	189.00	1.4427	.63440	.402
Valid N (listwise)	131							

Table 8. Pilot Perceived Usefulness (PU)

The below depicts the distribution of the data for the Locus of Control (PV) indicators. Indicators LOC5 and LOC9 were recoded to align their respective data representations. Indicator PV4 has 11 extreme values. Indicator LOC4 has extreme values >5. The aggregate PV variable demonstrates a largely normal distribution with extreme values <5.



Descriptive Statistics

	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation	Variance
LocusOfControl	131	4.22	1.44	5.67	446.78	3.4105	.83329	.694
LOC1	131	6.00	1.00	7.00	413.00	3.1527	1.52655	2.330
LOC2	131	6.00	1.00	7.00	391.00	2.9847	1.65010	2.723
LOC3	131	6.00	1.00	7.00	378.00	2.8855	1.44457	2.087
LOC4	131	6.00	1.00	7.00	343.00	2.6183	1.44360	2.084
LOC5_rec	131	6.00	1.00	7.00	473.00	3.6107	1.66212	2.763
LOC6	131	6.00	1.00	7.00	582.00	4.4427	1.66021	2.756
LOC7	131	6.00	1.00	7.00	433.00	3.3053	1.65898	2.752
LOC8	131	6.00	1.00	7.00	502.00	3.8321	1.59881	2.556
LOC9_rec	131	6.00	1.00	7.00	644.00	4.9160	1.48861	2.216
Valid N (listwise)	131							

Table 9. Pilot Locus of control (LOC)

Descriptive Statistics

	N	Minimum	Maximum
Zscore(PersonalValues)	131	-2.49815	2.94271
Zscore(PV1_rec)	131	-2.13075	1.78226
Zscore(PV2_rec)	131	-1.42621	3.00463
Zscore(PV3_rec)	131	-1.60076	2.11074
Zscore(PV4)	131	-1.15578	3.06953
Zscore(PV5)	131	-1.24861	2.74086
Zscore(PV6)	131	-1.97568	1.93587
Zscore(SN1)	131	-2.52375	1.02485
Zscore(SN2)	131	-2.53017	1.16632
Zscore(SN3)	131	-2.89382	1.00095
Zscore(SN4)	131	-2.17485	2.25373
Zscore(EI1)	131	-.83987	4.12355
Zscore(EI2)	131	-.84379	3.96212
Zscore(EI3)	131	-1.01779	3.86014
Zscore(EI4)	131	-1.06624	4.17167
Zscore(EI5)	131	-.80480	4.42307
Zscore(CE1)	131	-1.35323	3.21174
Zscore(CE2)	131	-1.38309	2.52738
Zscore(CE3)	131	-1.33401	2.62272
Zscore(CE4)	131	-1.28748	2.53123
Zscore(TG1)	131	-1.95247	1.26481
Zscore(TG2)	131	-1.63965	2.17326
Zscore(TG3)	131	-1.75883	1.90812
Zscore(TG4)	131	-1.83843	1.49108
Zscore(TG5)	131	-1.80772	1.52765
Zscore(TG6)	131	-1.74678	1.61834
Zscore(TG7)	131	-1.82045	1.46892
Zscore(TG8)	131	-1.81157	1.62778
Zscore(TG9)	131	-1.77947	1.54277
Zscore(PU1)	131	-.74828	5.10393
Zscore(PU2)	131	-.68386	4.22493
Zscore(PU3)	131	-.67456	4.60109
Zscore(PU4)	131	-.69790	5.60725
Zscore(LOC1)	131	-1.41015	2.52027
Zscore(LOC2)	131	-1.20279	2.43334
Zscore(LOC3)	131	-1.30523	2.84825
Zscore(LOC4)	131	-1.12103	3.03525
Zscore(LOC5_rec)	131	-1.57069	2.03915
Zscore(LOC6)	131	-2.07368	1.54031
Zscore(LOC7)	131	-1.38962	2.22707
Zscore(LOC8)	131	-1.77136	1.98143
Zscore(LOC9_rec)	131	-2.63066	1.39994
Zscore(INV1)	131	-1.66023	1.69437
Zscore(INV2)	131	-1.71057	1.63397
Valid N (listwise)	131		

Table 10. Pilot z-scores of Variables

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PV1_rec	.180	131	<.001	.935	131	<.001
PV2_rec	.213	131	<.001	.893	131	<.001
PV3_rec	.192	131	<.001	.924	131	<.001
PV3	.192	131	<.001	.924	131	<.001
PV4	.262	131	<.001	.846	131	<.001
PV5	.277	131	<.001	.822	131	<.001
PV6	.149	131	<.001	.944	131	<.001
SN1	.263	131	<.001	.848	131	<.001
SN2	.213	131	<.001	.889	131	<.001
SN3	.286	131	<.001	.842	131	<.001
SN4	.187	131	<.001	.938	131	<.001
EI1	.337	131	<.001	.692	131	<.001
EI2	.319	131	<.001	.702	131	<.001
EI3	.329	131	<.001	.778	131	<.001
EI4	.309	131	<.001	.801	131	<.001
EI5	.252	131	<.001	.744	131	<.001
CE1	.189	131	<.001	.906	131	<.001
CE2	.195	131	<.001	.909	131	<.001
CE3	.208	131	<.001	.898	131	<.001
CE4	.231	131	<.001	.876	131	<.001
TG1	.194	131	<.001	.903	131	<.001
TG2	.224	131	<.001	.916	131	<.001
TG3	.216	131	<.001	.919	131	<.001
TG4	.149	131	<.001	.931	131	<.001
TG5	.184	131	<.001	.918	131	<.001
TG6	.230	131	<.001	.902	131	<.001
TG7	.208	131	<.001	.898	131	<.001
TG8	.197	131	<.001	.919	131	<.001
TG9	.146	131	<.001	.934	131	<.001
PU1	.338	131	<.001	.683	131	<.001
PU2	.325	131	<.001	.661	131	<.001
PU3	.345	131	<.001	.660	131	<.001
PU4	.368	131	<.001	.650	131	<.001
LOC1	.196	131	<.001	.913	131	<.001
LOC2	.198	131	<.001	.892	131	<.001
LOC3	.201	131	<.001	.895	131	<.001
LOC4	.223	131	<.001	.857	131	<.001
LOC5_rec	.185	131	<.001	.930	131	<.001
LOC6	.139	131	<.001	.940	131	<.001
LOC7	.214	131	<.001	.912	131	<.001
LOC8	.187	131	<.001	.940	131	<.001
LOC9_rec	.232	131	<.001	.880	131	<.001
INV1	.157	131	<.001	.932	131	<.001
INV2	.141	131	<.001	.936	131	<.001

a. Lilliefors Significance Correction

Table 11. Pilot Tests of Normality All Variables

Examining the Z-score of all variables (Table 11 above) we observe that the lower bound is -2.89382 and the upper bound is 5.60725. The upper bound z-scores exceed 3 standard deviations on 13 variables – for some significantly. However, the outliers in the data are spread across multiple variables and are not concentrated in a few indicators, indicating data variability versus data anomalies. The tests of normality show significance values for all variables that are <.001 indicating that none of the variables follows a normal distribution. After considering the overall number and spread of outliers per indicator, the nature of the study (we are examining behaviors that could naturally have a wider spread), and the sample size of this pilot (removing extreme cases would reduce statistical power – unnecessarily since we are not using the pilot data to draw inferences about the interactions between the variables), it appears unnecessary to exclude any extreme value cases from the dataset.

The below chart provides a summary overview of the survey data validation steps and data removal categories resulting to a final data set of 131 to further analyze.

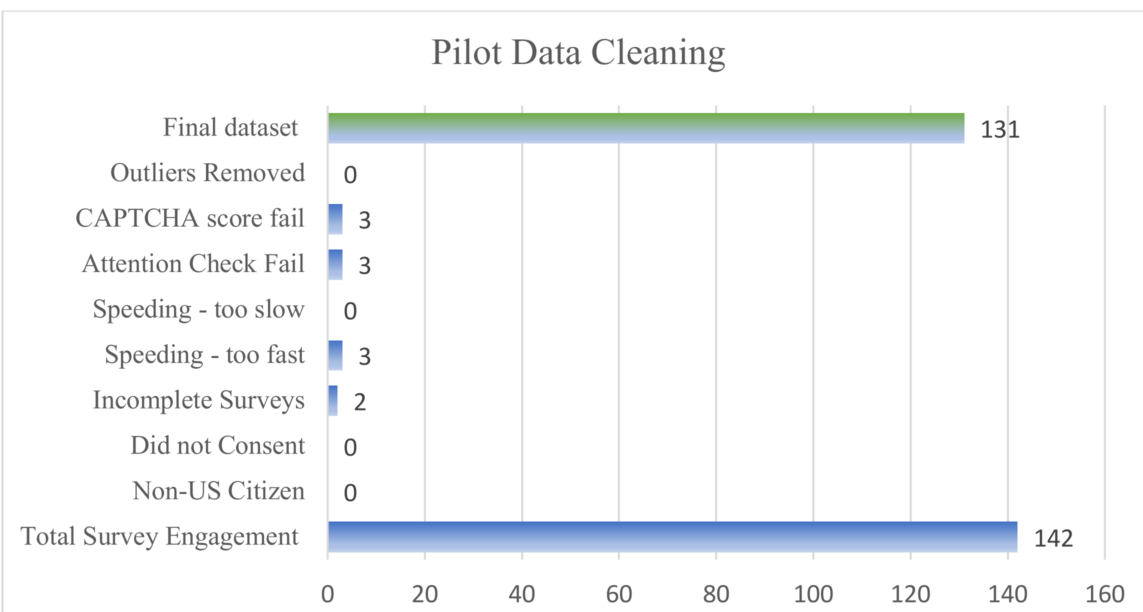
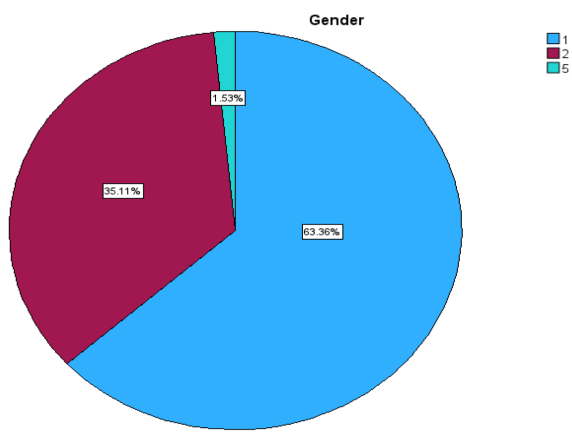


Table 12. Pilot Data Cleaning Summary

Descriptives and Demographics

Gender

The final dataset of 89 participants contained 83 males (or 63.%), 46 females (or 35%). Two (2) participants (or 0.2%) declined to answer (selected the "Prefer to not say" option). The sample is skewed toward male representation; however, there is support in research (Dwivedi & Lal, 2007) that gender is not a significant factor affecting attitudes toward Broadband. The predominance of male respondents is not considered to be a concern with the validity of the sample.



Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	83	63.4	63.4	63.4
	2	46	35.1	35.1	98.5
	5	2	1.5	1.5	100.0
	Total	131	100.0	100.0	

Table 13. Pilot - Gender

Age

The average age of the participants was 36.4 year (SD 11.6). The median age was 34 years. The average age for the men was 37.2 years (SD12.1); and for the women 34.6

years (SD 10.9). For both males and females, the Kolmogorov-Smirnov and Shapiro-Wilk tests indicate significant digression from normality with (p <0.05). However, the kurtosis and skewness are within the -2 to +2 and -7 to +7 thresholds respectively (Byrne, 2001).

The person who answered “would rather not say” on the gender question were 35 and 36 years old. The ages of the participants ranged from 18 year to 72 years of age. Overall, the age distribution of the sample is acceptable.

Tests of Normality

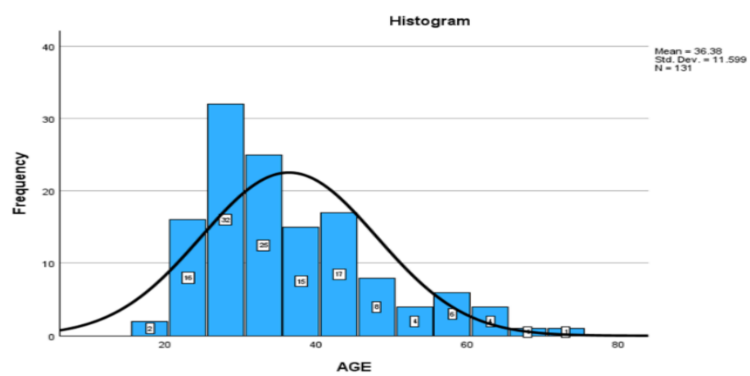
		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Gender	Statistic	df	Sig.	Statistic	df	Sig.
AGE	1	.133	83	<.001	.928	83	<.001
	2	.151	46	.011	.911	46	.002
	5	.260	2	.			

a. Lilliefors Significance Correction

Statistics

AGE

N	Valid	131
	Missing	0
Mean		36.38
Std. Deviation		11.599
Skewness		.972
Std. Error of Skewness		.212
Kurtosis		.520
Std. Error of Kurtosis		.420
Range		54
Minimum		18
Maximum		72
Percentiles	25	28.00
	50	34.00
	75	43.00



Descriptives

	Gender			Statistic	Std. Error
AGE	1	Mean		37.19	1.329
		95% Confidence Interval for Mean	Lower Bound	34.55	
			Upper Bound	39.84	
		5% Trimmed Mean		36.52	
		Median		35.00	
		Variance		146.499	
		Std. Deviation		12.104	
		Minimum		18	
		Maximum		70	
		Range		52	
		Interquartile Range		15	
		Skewness		.846	.264
		Kurtosis		.049	.523
	2	Mean		34.96	1.604
		95% Confidence Interval for Mean	Lower Bound	31.73	
			Upper Bound	38.19	
		5% Trimmed Mean		34.14	
		Median		32.00	
		Variance		118.398	
		Std. Deviation		10.881	
		Minimum		20	
		Maximum		72	
		Range		52	
		Interquartile Range		15	
		Skewness		1.222	.350
		Kurtosis		1.827	.688
	5	Mean		35.50	.500
		95% Confidence Interval for Mean	Lower Bound	29.15	
			Upper Bound	41.85	
		5% Trimmed Mean		.	
		Median		35.50	
		Variance		.500	
		Std. Deviation		.707	
		Minimum		35	
		Maximum		36	
		Range		1	
		Interquartile Range		.	
		Skewness		.	.
		Kurtosis		.	.

Table 14. Pilot - Age

Race

Ninety (93) of the participants, or 71% were white; 27, or 20.6% were black; 9, or 6.9% were of Asian descent; and 2 chose to answer "Other". Eleven (11), or 8.4% of the respondents reported that they are of Hispanic, or Latin descent.

Race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	93	71.0	71.0	71.0
	2.0	27	20.6	20.6	91.6
	4.0	9	6.9	6.9	98.5
	6.0	2	1.5	1.5	100.0
	Total	131	100.0	100.0	

Latino

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	11	8.4	8.4	8.4
	2	120	91.6	91.6	100.0
	Total	131	100.0	100.0	

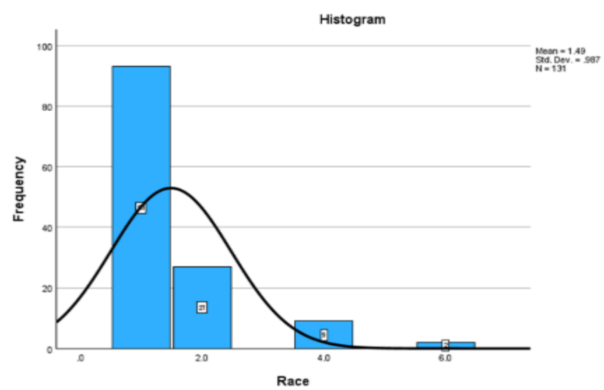


Table 15. Pilot - Race

Household type

The majority of the respondents live in family households (78%); 22.1 live in a single person household.

Household

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Family	102	77.9	77.9	77.9
	Non - family	29	22.1	22.1	100.0
	Total	131	100.0	100.0	

Table 16. Pilot - Household Type

Broadband Availability

Only 3 (2.3%) of the respondents did not have Broadband at the place of residence; 97.7% did.

HaveBroadband

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Have Broadband	128	97.7	97.7	97.7
	Do not have Broadband	3	2.3	2.3	100.0
	Total	131	100.0	100.0	

Table 17. Pilot - Broadband Availability

Income

The participants of the pilot were asked to indicate their income levels. Just over two thirds of the respondents (68.7%) earn between $35,000 and $150,000 annually. The Kolmogorov-Smirnov test indicate that the income data is not normally distributed, as they have a p-value of less than 0.05. The kurtosis value of .212 is acceptable; however, the skewness value of 1.495 suggests moderate to high positive skew. This is not considered as an issue for the purpose of this study and the income data is accepted as within a normal distribution.

Descriptives

			Statistic	Std. Error
Income	Mean		4.67	.228
	95% Confidence Interval for Mean	Lower Bound	4.22	
		Upper Bound	5.12	
	5% Trimmed Mean		4.41	
	Median		4.00	
	Variance		6.838	
	Std. Deviation		2.615	
	Minimum		1	
	Maximum		13	
	Range		12	
	Interquartile Range		3	
	Skewness		1.495	.212
	Kurtosis		3.221	.420

Income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< $20,000	8	6.1	6.1	6.1
	$20,000 to $34,999	16	12.2	12.2	18.3
	$35,000 to $49,999	23	17.6	17.6	35.9
	$50,000 to $74,999	22	16.8	16.8	52.7
	$75,000 to $99,999	16	12.2	12.2	64.9
	$100,000 to $149,999	29	22.1	22.1	87.0
	$150,000 to $199,999	10	7.6	7.6	94.7
	$200,000 or more	7	5.3	5.3	100.0
	Total	131	100.0	100.0	

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Income	.176	131	<.001	.844	131	<.001

a. Lilliefors Significance Correction

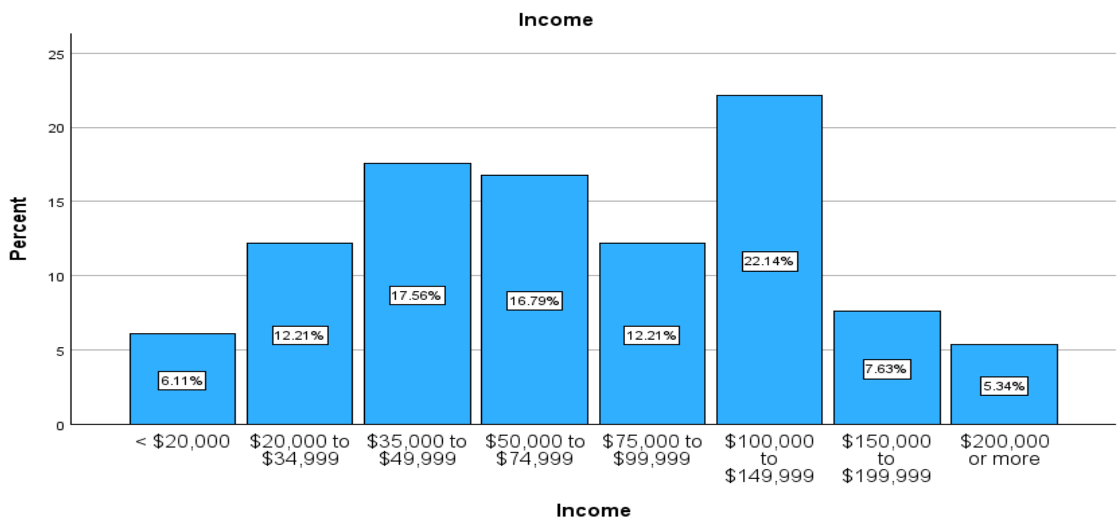


Table 18. Pilot - Income

Education

The vast majority (84%) of the respondents have some level of college education. The normality tests have both p values lower the 0.05 indicating a deviation from normal distribution. However, skewness (-.239) and kurtosis (-.511) are acceptable suggesting a distribution close to normal. Overall, the respondent's education levels demonstrates a mix of different schooling experiences suitable for the purposes of this study.

Descriptives

			Statistic	Std. Error
Education	Mean		4.36	.125
	95% Confidence Interval for Mean	Lower Bound	4.11	
		Upper Bound	4.61	
	5% Trimmed Mean		4.34	
	Median		5.00	
	Variance		2.047	
	Std. Deviation		1.431	
	Minimum		2	
	Maximum		8	
	Range		6	
	Interquartile Range		2	
	Skewness		-.239	.212
	Kurtosis		-.511	.420

Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High school graduate	21	16.0	16.0	16.0
	Some college but no degree	19	14.5	14.5	30.5
	Associate degree	10	7.6	7.6	38.2
	Bachelor's degree	61	46.6	46.6	84.7
	Master's degree	15	11.5	11.5	96.2
	Doctoral degree	3	2.3	2.3	98.5
	Professional degree (JD, MD)	2	1.5	1.5	100.0
	Total	131	100.0	100.0	

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Education	.291	131	<.001	.875	131	<.001

a. Lilliefors Significance Correction

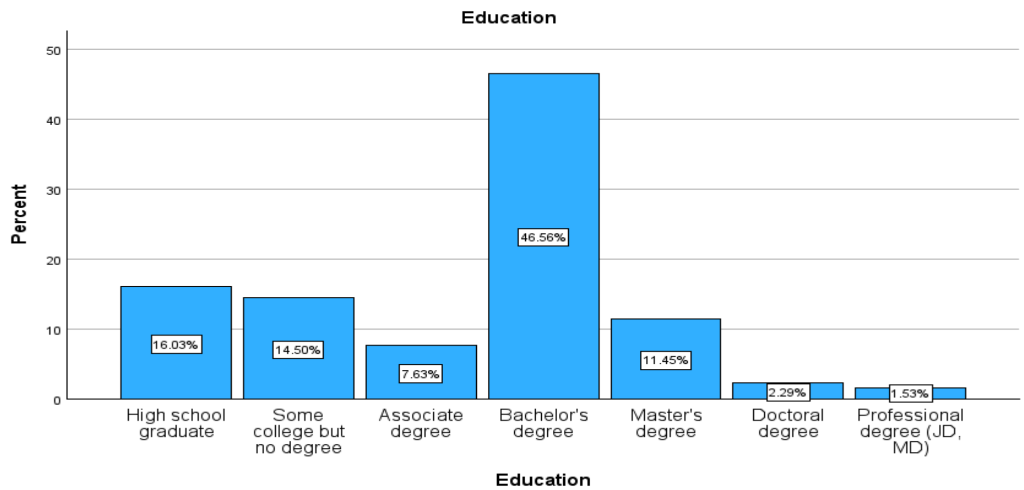


Table 19. Pilot - Education

Political views

The most common response in describing political orientation was "Other" (29.8%) suggesting that many respondents do not strictly align within the confines of the traditional Conservative-Moderate-Liberal categories. The distribution overall provides for a diversity of political views which is suitable for the purposes of the study.

Politicalviews

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very conservative	12	9.2	9.2	9.2
	Conservative	34	26.0	26.0	35.1
	Moderate	26	19.8	19.8	55.0
	Liberal	19	14.5	14.5	69.5
	Other	39	29.8	29.8	99.2
	Prefer not to say	1	.8	.8	100.0
	Total	131	100.0	100.0	

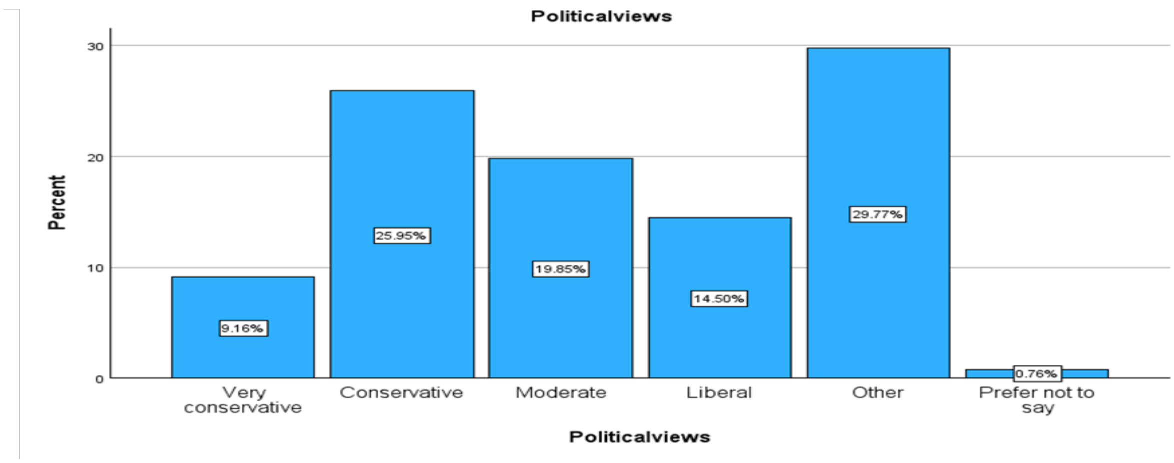


Table 20. Pilot - Political Views

Type of Area of Habitation

The main premise of the study is to examine the willingness of society across all types of communities to support expansion of Broadband in rural areas. Therefore, to ensure that the study has representation of people living in every type of setting, the population sample of the main study will need to be balanced and proportionate with participants distributed across rural, suburban, and urban types of communities. The majority of the respondents of the pilot (89%) live in urban or suburban areas, places where access to Broadband is typically ubiquitous. Accordingly, it will be necessary to apply percentage targets and quotas during the collection of the data for the main study to ensure equal representation of rural-suburban-urban area inhabitants in the main study sample. The below table summarizes the distribution of the respondents by community type (pre-data clean up).

Community Type	Count of Participants
Rural or sparsely populated, small town or village	16
Suburban or mainly residential, bordering a city or large town	77
Urban or densely populated, city or large town	49
Total	142

Table 21. Pilot - Area of Habitation

Pilot Factor Analysis and Reliability

Confirmatory Factor Analysis (CFA)

To further gain an understanding of the underlying relationships and interactions between the variables and gain insights in the structure of the data, a confirmatory factor analysis was conducted using the Jamovi open-source statistical software (*The Jamovi Project*, 2025).

The mean values and fit indexes of the initial model showed that the initial model required improvement. The Chi-Square (χ^2) values of 1541 with degrees of freedom (df) = 832, $p < 0.00$ suggested that the model did not perfectly fit the data. The CFI value of .832 and the TLI value of .817 were below the .90 threshold suggesting a poor fit. The SRMR value of .103 exceeded the .08 threshold for good fit, while the RMSEA value of .0813 indicated a reasonable fit. Overall, there was need to refine the model structure and remove poorly fitting indicators in an effort to improve the CFI and TLI values.

Model Fit

Test for Exact Fit

χ^2	df	p
1541	832	< .001

Fit Measures

				RMSEA 90% CI	
CFI	TLI	SRMR	RMSEA	Lower	Upper
0.832	0.817	0.103	0.0813	0.0750	0.0876

Factor Loadings

Factor	Indicator	Estimate	SE	Z	p
Personal Values	PV1_rec	0.153	0.1554	0.985	0.324
	PV2_rec	0.501	0.1311	3.819	<.001
	PV3_rec	0.391	0.1608	2.432	0.015
	PV4	1.034	0.1208	8.561	<.001
	PV5	0.521	0.0647	8.054	<.001
	PV6	0.668	0.1406	4.752	<.001
Social Norms	SN1	1.465	0.1235	11.861	<.001
	SN2	1.453	0.1149	12.646	<.001
	SN3	1.296	0.1137	11.395	<.001
	SN4	0.423	0.1217	3.478	<.001
Perceived Economic Inequality	EI1	1.106	0.0864	12.792	<.001
	EI2	1.079	0.0913	11.815	<.001
	EI3	0.805	0.1022	7.871	<.001
	EI4	0.584	0.1015	5.758	<.001
	EI5	0.581	0.0996	5.829	<.001
Civil Engagement	CE1	1.205	0.0894	13.485	<.001
	CE2	1.426	0.1034	13.786	<.001
	CE3	1.358	0.1049	12.950	<.001
	CE4	1.362	0.1113	12.237	<.001
Trust in Government	TG1	1.612	0.1299	12.409	<.001
	TG2	1.239	0.1167	10.614	<.001
	TG3	1.488	0.1112	13.381	<.001
	TG4	1.482	0.1304	11.372	<.001
	TG5	1.701	0.1187	14.333	<.001
	TG6	1.584	0.1234	12.837	<.001
	TG7	1.642	0.1245	13.187	<.001
	TG8	1.564	0.1201	13.014	<.001
	TG9	1.619	0.1241	13.045	<.001
Perceived Usefulness	PU1	0.550	0.0432	12.743	<.001
	PU2	0.617	0.0566	10.896	<.001
	PU3	0.600	0.0503	11.933	<.001
	PU4	0.416	0.0426	9.773	<.001
Locus of Control	LOC1	0.842	0.1329	6.335	<.001
	LOC2	1.246	0.1299	9.593	<.001
	LOC3	1.079	0.1143	9.444	<.001
	LOC4	1.020	0.1131	9.017	<.001
	LOC5_rec	0.456	0.1542	2.959	0.003
	LOC6	0.944	0.1450	6.510	<.001
	LOC7	1.307	0.1267	10.317	<.001
	LOC8	0.633	0.1456	4.349	<.001
	LOC9_rec	0.500	0.1373	3.646	<.001
Intention to Vote in Support of Broadband	INV1	1.715	0.1221	14.049	<.001
	INV2	1.773	0.1201	14.758	<.001

Table 22. Pilot Initial CFA

Several indicators were excluded from the model based on their low factor loadings and Z-scores. After several reiterations, we arrived at a model that demonstrates an acceptable fit, requiring no further modifications, as shown in Table 18. The Chi-Square (χ^2) values of 694 with degrees of freedom (df) = 406, $p < 0.00$ suggests that the model still does not perfectly fit the data; however, it does represent an improvement in fit quality from the initial view. Furthermore, Chi-Square (χ^2) is more likely to be significant in a larger sample instead of the smaller one that is being used for the purposes of this pilot. The CFI value of .916 and the TLI value of .904 meet the acceptable threshold of being above 0.90. The SRMR value of .604 is below the .08 threshold, as is the RMSEA value of .0742 which supports the model's fit. Overall, this model fits the data according to the fit indices. The removed indicators are being shown in the table below:

Factor Loadings of Removed Indicators

Factor	Indicator	Estimate	SE	Z	p
Personal Values	PV1_rec	0.153	0.1554	0.985	0.324
	PV2_rec	0.501	0.1311	3.819	<.001
	PV3_rec	0.391	0.1608	2.432	0.015
Social Norms	SN4	0.423	0.1217	3.478	<.001
Perceived Economic Inequality	EI2	1.079	0.0913	11.815	<.001
	EI5	0.581	0.0996	5.829	<.001
Perceived Usefulness	PU4	0.416	0.0426	9.773	<.001
Locus of Control	LOC1	0.842	0.1329	6.335	<.001
	LOC5_rec	0.456	0.1542	2.959	0.003
	LOC6	0.944	0.145	6.51	<.001
	LOC8	0.633	0.1456	4.349	<.001
	LOC9_rec	0.5	0.1373	3.646	<.001

Table 23. Pilot CFA Removed Indicators

Model Fit

Test for Exact Fit

χ^2	df	p
694	406	< .001

Fit Measures

				RMSEA 90% CI	
CFI	TLI	SRMR	RMSEA	Lower	Upper
0.916	0.904	0.0604	0.0742	0.0647	0.0835

Factor Loadings

Factor	Indicator	Estimate	SE	Z	p
Personal Values	PV4	0.992	0.1235	8.03	<.001
	PV5	0.521	0.0654	7.97	<.001
	PV6	0.661	0.1396	4.74	<.001
Social Norms	SN1	1.472	0.1236	11.92	<.001
	SN2	1.442	0.1155	12.48	<.001
	SN3	1.297	0.1141	11.37	<.001
Perceived Economic Inequality	EI1	0.777	0.1054	7.37	<.001
	EI3	1.056	0.1065	9.92	<.001
	EI4	0.833	0.1002	8.32	<.001
Civil Engagement	CE1	1.204	0.0894	13.47	<.001
	CE2	1.428	0.1033	13.82	<.001
	CE3	1.357	0.1049	12.93	<.001
	CE4	1.361	0.1113	12.23	<.001
Trust in Government	TG1	1.611	0.1299	12.40	<.001
	TG2	1.239	0.1167	10.62	<.001
	TG3	1.489	0.1112	13.39	<.001
	TG4	1.484	0.1303	11.39	<.001
	TG5	1.701	0.1187	14.33	<.001
	TG6	1.584	0.1233	12.84	<.001
	TG7	1.641	0.1246	13.17	<.001
	TG8	1.564	0.1201	13.01	<.001
	TG9	1.618	0.1241	13.04	<.001
Perceived Usefulness	PU1	0.537	0.0445	12.07	<.001
	PU2	0.620	0.0568	10.92	<.001
	PU3	0.614	0.0504	12.19	<.001
Locus of Control	LOC2	1.317	0.1269	10.38	<.001
	LOC3	0.981	0.1185	8.28	<.001
	LOC4	1.104	0.1104	9.99	<.001
	LOC7	1.322	0.1282	10.31	<.001
Intention to Vote in Support of Broadband	INV1	1.716	0.1220	14.07	<.001
	INV2	1.772	0.1201	14.75	<.001

Table 24. Pilot Final CFA Run

Reliability Analysis

The reliability and validity of final model scales were further analyzed to ensure the consistency and stability of the measurement instrument that has emerged.

Personal Values

Prior to the optimization of the model the Personal Values (PV) scale included 6 indicators with an acceptable Cronbach's alpha (α) of .629 (Cronbach, 1951).

Scale Reliability Statistics

	Mean	SD	Cronbach's α
scale	3.23	0.831	0.629

[4]

Item Reliability Statistics

				If item dropped
	Mean	SD	Item-rest correlation	Cronbach's α
PV4	2.65	1.429	0.363	0.584
PV5	1.94	0.758	0.386	0.598
PV6	4.05	1.535	0.297	0.613
PV1_rec	4.25	1.536	0.360	0.586
PV2_rec	2.93	1.359	0.363	0.585
PV3_rec	3.59	1.628	0.461	0.541

Table 25. Pilot Personal Values (PV) Scale Reliability Pre-Optimization

During the model fit streaming reiterations indicators PV1_rec, PV2_rec, and PV3_rec were removed. The reliability of the PV scale suffered accordingly, sliding to Cronbach's α of .571 below the 0.6 threshold (see Table 20 below). Although the removal of the indicators enhanced the statistical fit of the overall model there is now a risk that scale is no longer supporting the theoretical construct. It is possible that important aspects of PV are being overlooked by the remaining 3 indicators. To mitigate this issue the researcher will revise the scale for the main study, re-writing the questions of the 3 removed indictors and perhaps adding to the scale additional ones that will assist in better representing the construct.

Scale Reliability Statistics

	Mean	SD	Cronbach's α
scale	2.88	0.945	0.571

[4]

Item Reliability Statistics

	Mean	SD	Item-rest correlation
PV4	2.65	1.429	0.442
PV5	1.94	0.758	0.471
PV6	4.05	1.535	0.341

Table 26. Pilot Personal Values (PV) Scale Reliability Post-Optimization

Social Norms

The Social Norms (SN) scale had 1 indicator removed (SN4) and still demonstrates acceptable reliability with a Cronbach's α of .899.

Scale Reliability Statistics

	Mean	SD	Cronbach's α
scale	5.28	1.48	0.899

[4]

Item Reliability Statistics

	Mean	SD	Item-rest correlation
SN1	5.26	1.70	0.783
SN2	5.12	1.63	0.837
SN3	5.46	1.55	0.784

Table 27. Pilot Social Norms (SN) Scale Reliability Post-Optimization

Perceived Economic Inequality

The Perceived Economic Inequality (EI) scale had 2 indicators removed (EI2 and EI5). It demonstrates acceptable reliability with a Cronbach's α of .775.

Scale Reliability Statistics

	Mean	SD	Cronbach's α
scale	2.17	1.00	0.775

[4]

Item Reliability Statistics

	Mean	SD	Item-rest correlation
EI1	2.02	1.22	0.544
EI3	2.26	1.24	0.709
EI4	2.22	1.15	0.586

Table 28. Pilot Perceived Economic Inequality (EI) Scale Reliability Post-Optimization

Civic Engagement

The Civic Engagement (CV) scale had no indicators removed. It demonstrates excellent reliability with a Cronbach's α of .943.

Scale Reliability Statistics

	Mean	SD	Cronbach's α
scale	2.99	1.38	0.943

[4]

Item Reliability Statistics

	Mean	SD	Item-rest correlation
CE1	2.79	1.32	0.876
CE2	3.13	1.54	0.891
CE3	3.01	1.52	0.865
CE4	3.03	1.58	0.837

Table 29. Pilot Civic Engagement (CE) Scale Reliability Post-Optimization

Trust in Government

The Trust in Government (TG) scale also had no indicator removals. It demonstrates excellent reliability (Cronbach's α .968). The scale has 9 items all of which perform very well and appears to be somewhat of an "overkill". Accordingly, the researcher will remove some of the indicators in order to reduce the length of the measuring instrument, retaining the strongest items which should still allow the scale to maintain a high Cronbach's α score.

Scale Reliability Statistics

	Mean	SD	Cronbach's α
scale	4.17	1.58	0.968

[4]

Item Reliability Statistics

	Mean	SD	Item-rest correlation
TG1	4.67	1.86	0.851
TG2	3.58	1.58	0.763
TG3	3.89	1.65	0.900
TG4	4.32	1.81	0.801
TG5	4.26	1.81	0.932
TG6	4.12	1.79	0.868
TG7	4.34	1.83	0.881
TG8	4.16	1.76	0.876
TG9	4.22	1.82	0.881

Table 30. Pilot Trust in Government (TG) Scale Post-Optimization

Perceived Usefulness

The Perceived Usefulness (PU) scale had 1 indicator removed (PU4). It demonstrates good reliability with a Cronbach's α of .891.

Scale Reliability Statistics

	Mean	SD	Cronbach's α
scale	1.50	0.628	0.891

[4]

Item Reliability Statistics

				If item dropped
	Mean	SD	Item-rest correlation	Cronbach's α
PU1	1.48	0.614	0.804	0.839
PU2	1.53	0.761	0.771	0.867
PU3	1.48	0.697	0.803	0.829

Table 31. Pilot Perceived Usefulness (PU) Scale Post-Optimization

Locus of Control

The Locus of Control (LOC) scale had 5 indicators removed (LOC1, LOC5-rec, LOC6, LOC8, and LOC9_rec). The remaining items demonstrate good reliability with a Cronbach's α of 0.853.

Scale Reliability Statistics

	Mean	SD	Cronbach's α
scale	2.91	1.28	0.853

[4]

Item Reliability Statistics

				If item dropped
	Mean	SD	Item-rest correlation	Cronbach's α
LOC2	2.95	1.64	0.714	0.805
LOC3	2.86	1.44	0.637	0.836
LOC4	2.57	1.41	0.712	0.808
LOC7	3.27	1.65	0.724	0.801

Table 32. Pilot Locus of Control (LOC) Scale Post-Optimization

Intention to Vote in Support of Broadband

The Intention to Vote in Support of Broadband (INV) scale demonstrates excellent reliability with a Cronbach's α of .970. This scale directly measures the dependent variable and only has to items. The researcher will add some more items to this scale in an effort to enhance the robustness of the measurement while balancing participant burden.

Scale Reliability Statistics

	Mean	SD	Cronbach's α
scale	4.02	1.78	0.970

[4]

Item Reliability Statistics

	Mean	SD	Item-rest correlation	If item dropped Cronbach's α
INV2	4.07	1.81	0.942	0.946
INV1	3.96	1.80	0.942	0.938

Table 33. Pilot Intention to Vote for of Broadband (INV) Scale Post-Optimization

The below table summarizes the reliability results of all the scales:

Scale	Number of Items	Cronbach's Alpha	Mean	SD
Personal Values (PV)	3	0.571	2.88	0.945
Social Norms (SN)	3	0.899	5.28	1.48
Perceived Economic Inequality (EI)	3	0.775	2.17	1.00
Civic Engagement (CE)	4	0.943	2.99	1.38
Trust in Government (TG)	9	0.968	4.17	1.58
Perceived Usefulness (PU)	3	0.891	1.50	0.628
Locus of Control (LOC)	4	0.853	2.91	1.28
Intention to Vote in Support of Broadband (INV)	2	0.97	4.02	1.78
	31			

Table 34. Pilot Summary Reliability and Scale Statistics

Pilot Discussion: Outcomes and Takeaways

The pilot phase of the study was intended to test the efficacy and validity of the survey instrument and the polling procedure, as well as to identify any potential challenges before conducting the main study. The pilot survey was launched on the Cloud Research Connect platform with 142 responses collected. The survey was well-received, and the responses were collected quickly. Here are the key takeaways:

Survey length: The average length time needed to complete the survey was closer to 10 minutes vs. the estimated 6 minutes (the mode was right at 5 minutes and the median at 8 minutes). An adjustment of the expected time to 10 minutes was necessary for the main study to ensure fairness of the offered compensation and participant satisfaction and engagement.

Area of habitation: Predictably, most of the respondents of the pilot do not live in rural areas. In order to ensure sufficient participation of people from urban, suburban, and rural areas it will be necessary to establish quotas in the data collection of the main study (this can be set up on the Cloude research Connect platform).

Personal Values scale: The personal values scale demonstrated poor model fit and when its indicators were reduced from 6 to 3, its Cronbach's α dropped below the 0.6 threshold. As a result of that during the main study the researcher will re-write the questions of the 3 removed indicators. The goal was to avoid language that may cause wide dispersion in the participants responses, suggesting significant differences in perspectives and interpretations of the questions. Additionally, 3 more indicators were added to the scale, adopted from Schwartz's Portrait Valeus Questionnaire (PVQ) (Schwartz et al., 2001) which correspond to the "Benevolence" construct of the PVQ and align theoretically with the Personal Values construct in this research (Schwartz defines benevolence as the "preservation and enhancement of the welfare of people with whom one is in frequent personal contact"). This will bring during the main study the number of indicators of the Personal Values scale to 9 which is expected to properly explore and describe all the dimensions of the construct.

Trust in Government scale: This scale has 9 indicators all of which make strong contributions to its overall performance. In an attempt to ameliorate the task of the respondents and reduce the length of the survey some indicators can be excluded for the final study. Indicators TG2, TG4, TG6, and TG8 will be excluded as they had the lowest correlation and weakest contributions to the scale. With this, during the final study the number of indicators for the Trust in Government scale will be 5. A reliability analysis of this scale of 5 indicators produced a Cronbach's α score of 0.956, a marginal decline from the Cronbach's α score of 0.968 the original 9 indicators demonstrated.

Scale Reliability Statistics

	Cronbach's α
scale	0.956

[4]

Item Reliability Statistics

	If item dropped
	Cronbach's α
TG1	0.949
TG3	0.948
TG5	0.941
TG7	0.945
TG9	0.946

Table 35. Post-Pilot Reduced Trust in Government (TG) scale

Intention to Vote in Support of Broadband Scale: Three (3) additional indicators will be added to this scale bringing the total number to 4. The new indicators are self-developed; they add dimensionality and reflectivity to the measurement of the construct.

The addition of these indicators is expected to improve the scale's measuring properties and robustness, particularly with regard to its content validity and structural integrity during the confirmatory analysis.

Category	Indicator	Cronbach's α
Original	In the future, it is likely that I will vote for taxation intended for Rural Broadband infrastructure investment.	0.970
	I would recommend to others to vote for taxation intended for Rural Broadband infrastructure investment.	
Added	I am willing to encourage others to vote for Rural Broadband infrastructure investment taxation initiatives	
	I am willing to advocate to others the benefits of voting for Rural Broadband infrastructure investment taxation initiatives.	
	I am committed to voting in support of policies that promote Rural Broadband infrastructure investment.	

Table 36. Post-Pilot Intention to Vote in Support of Broadband Scale (INV)

A summary of these revisions is presented in Table 37, which outlines the scale name, the specific actions taken, and the number of items affected in each case.

Construct revisions resulting from the pilot phase

Scale	Action	Number of Items
Personal Values (PV)	Reworded 3 indicators and added 3 new ones	9
Social Norms (SN)	Removed 1 indicator	3
Perceived Economic Inequality (EI)	Removed 2 indicators	3
Civic Engagement (CE)	No change	4
Trust in Government (TG)	Reduced by 4 indicators	5
Perceived Usefulness (PU)	Removed 1 indicator	3
Locus of Control (LOC)	Removed 5 indicators	4
Intention to Vote in Support of Broadband (INV)	Added 3 indicators	5
		36

Table 37. Post-Pilot Summary of Scale Revisions

Main Study

Data Collection and Cleaning

After completing the pilot phase, data for the main study was gathered using the CloudResearch Connect platform. The target sample size target was 450 participants, with the Cloud Research Connect platform set to poll 150 respondents of each of the urban, suburban, and rural categories to allow meaningful multi-group analysis (Aguirre-Urreta & Rönkkö, 2015). The platform was also set to exclude anyone who had participated in the pilot phase so as to ensure data integrity. Once acquired, the data was screened systematically to identify missing and incomplete responses, instances of speeding through the survey, failures on attention questions, and to detect outliers. All respondents consented to participate in the study and met the requirement of being of voting age. As an added precaution, the IP addresses of the respondents which the Cloud Research Connect platform reported were verified to ensure they originated within the United States. The subsequent data cleaning analysis was conducted in SPSS (IBM Corp., 2025)

Speeding and Missing Data

Out of the 450 respondents who participated 8 were not able to complete the survey because they were not US Citizens. Four (4) additional respondents were excluded because their CAPTCHA score was <0.5. This score, captured by Qualtrics, helps in identifying possible fraudulent attempts. The Qualtrics CAPTCHA guidelines state that a score less than 0.5 suggests that the respondent is likely a bot and it is therefore best to discard the corresponding data (Qualtrics, n.d.). The removal of the 4 responses that failed this check brought the number of screened responses down to 438. These 438 respondents completed the survey successfully, with no missing data for duration. The average completion time was 8.48 minutes (SD = 4.66), with a median of 7.28 minutes. Completion times ranged from a minimum of 1.92 minutes to a maximum of 48.0 minutes. However, these speeding outliers demonstrate no other data issues or concerns, hence the researcher decided to include them in the data set.

	N	Missing	Mean	Median	SD	Minimum	Maximum
Duration (Min)	438	0	8.48	7.28	4.66	1.92	48.0

Table 38. Survey Completion Time (in minutes)

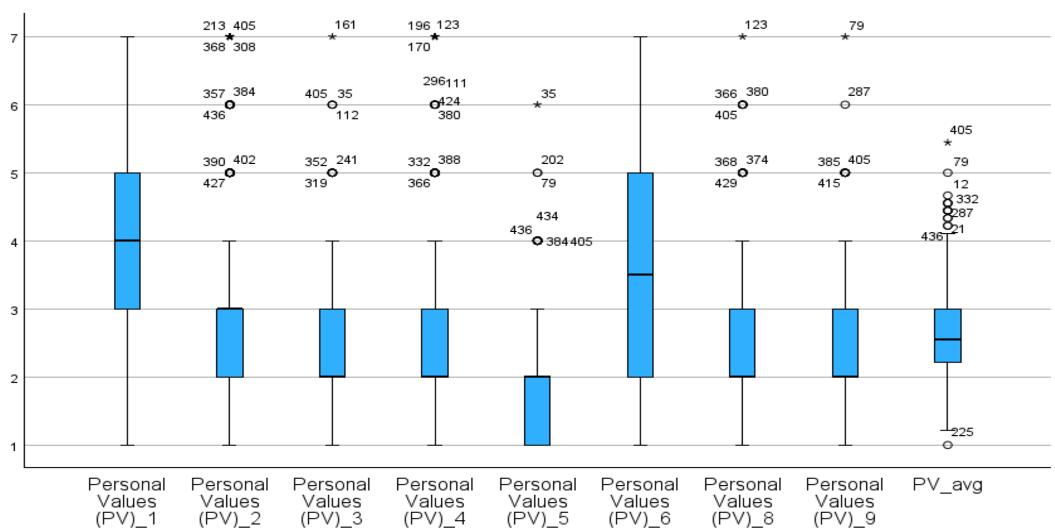
Attention Check Questions

The survey includes 4 attention check questions interspersed throughout the instrument. Of these, PV_7, EI_3, and LOC_4 were numbered variable indicators and will be excluded from the analysis. One respondent failed the first attention check, another failed the second, ten different respondents failed the third, and no one failed the fourth. Importantly, none of these respondents failed more than one attention check question. All respondents who failed an attention check question spent a reasonable amount of time completing the survey, with completion times ranging from 5.72 to 16.28 minutes. This suggests that the failures were likely due to random missed "clicks" rather than signs of carelessness or rushing through the survey. As a result of the above, the researcher opted to retain all respondents who failed only one attention check question.

Outliers and Tests of Normality

The dataset comprising 438 responses was further examined to identify any extreme values that could have an adverse effect to further data analysis. Data analysis was conducted using the SPSS software suite. Boxplots were generated for the indicators of each variable, and tests of normality were conducted to assess the distribution of the data.

The boxplot for the Personal Values (PV) variable shows several mild outliers in most indicators, as well as some extreme ones. PV_1 and PV_6 display the greater variability in responses with higher standard deviation observed for PV_1 (SD = 1.706) and PV_6 (SD = 1.564). The Kolmogorov-Smirnov and Shapiro-Wilk tests for all indicators indicate significant departure from normality ($p < 0.001$). However, closer inspection of the distribution of the data in the Q-Q plot for the PV_avg aggregate shows that he central portion of the data is reasonably approximating normality, implying that the Kolmogorov-Smirnov and Shapiro-Wilk test results are likely influenced by the presence of the outliers in the tails. Furthermore, the Shapiro-Wilk statistic results are close to 1 (W values ranging from 0.821 to 0.976) indicating that the data is likely normally distributed. Regardless, the deviation in the tails is a limitation in the data, suggesting some degree of non-normality, particularly in the distribution's extremes.



Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Personal Values (PV)_1	438	6	1	7	3.90	1.706
Personal Values (PV)_2	438	6	1	7	2.87	1.442
Personal Values (PV)_3	438	6	1	7	2.41	1.001
Personal Values (PV)_4	438	6	1	7	2.46	1.293
Personal Values (PV)_5	438	5	1	6	1.90	.902
Personal Values (PV)_6	438	6	1	7	3.63	1.564
Personal Values (PV)_8	438	6	1	7	2.31	1.130
Personal Values (PV)_9	438	6	1	7	2.39	1.055
Personal Values (PV)_10	438	5	1	6	2.16	.951
PV_avg	438	4.44	1.00	5.44	2.6695	.68877
Valid N (listwise)	438					

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Personal Values (PV)_1	.187	438	<.001	.930	438	<.001
Personal Values (PV)_2	.232	438	<.001	.885	438	<.001
Personal Values (PV)_3	.250	438	<.001	.873	438	<.001
Personal Values (PV)_4	.224	438	<.001	.871	438	<.001
Personal Values (PV)_5	.239	438	<.001	.821	438	<.001
Personal Values (PV)_6	.156	438	<.001	.946	438	<.001
Personal Values (PV)_8	.246	438	<.001	.864	438	<.001
Personal Values (PV)_9	.223	438	<.001	.889	438	<.001
PV_avg	.079	438	<.001	.976	438	<.001

a. Lilliefors Significance Correction

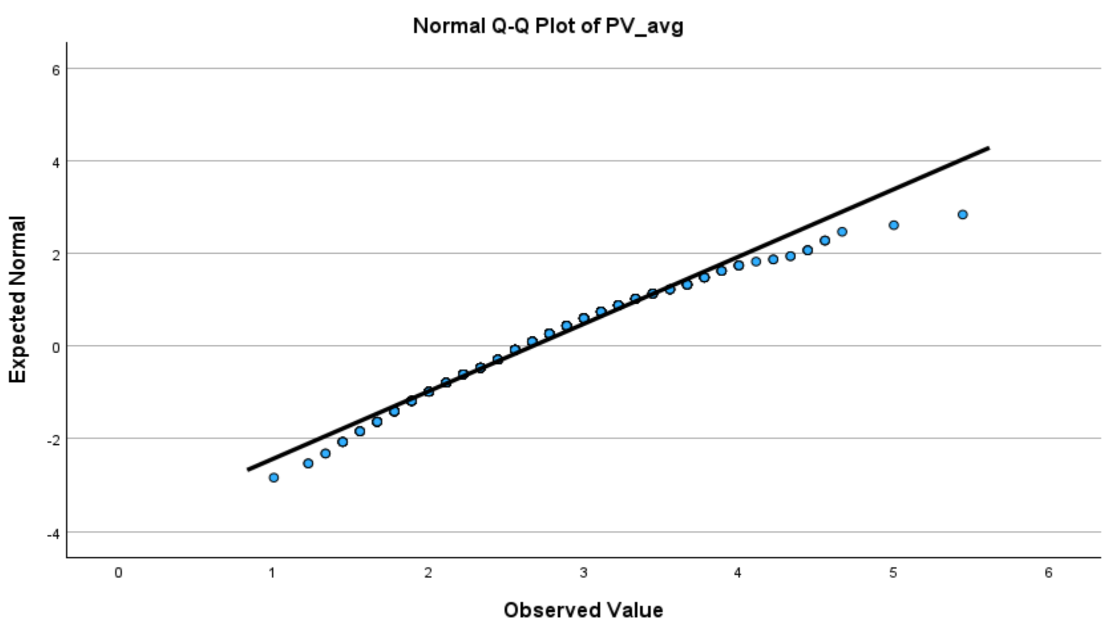
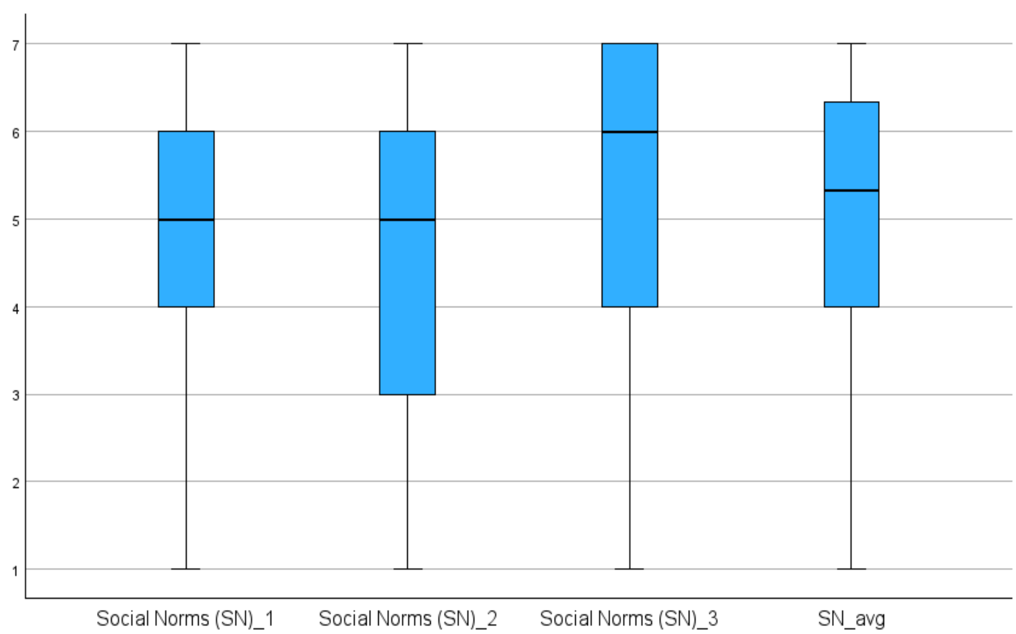


Table 39. Personal Values (PV) Outliers and Normality Tests

The boxplot of the Social Norms (SN) variable shows no marked outliers. The descriptive statistics indicate that all the indicators are well-distributed. Both the Kolmogorov-Smirnov and Shapiro-Wilk tests indicate significant deviations from normality ($p < 0.001$). However, the Shapiro-Wilk statistic results are close to 1 (W values ≥ 0.907) indicating that the data is likely normally distributed. Moreover, the Q-Q plot for SN_avg shows deviations from normality mainly in the tails. The absence of outliers and the moderate alignment with normality in the Q-Q plot imply that any deviation from normality may have minimal impact on further analysis.



Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Social Norms (SN)_1	438	6	1	7	4.91	1.715
Social Norms (SN)_2	438	6	1	7	4.87	1.716
Social Norms (SN)_3	438	6	1	7	5.37	1.569
SN_avg	438	6.00	1.00	7.00	5.0518	1.50526
Valid N (listwise)	438					

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Social Norms (SN)_1	.191	438	<.001	.907	438	<.001
Social Norms (SN)_2	.194	438	<.001	.908	438	<.001
Social Norms (SN)_3	.248	438	<.001	.862	438	<.001
SN_avg	.115	438	<.001	.941	438	<.001

a. Lilliefors Significance Correction

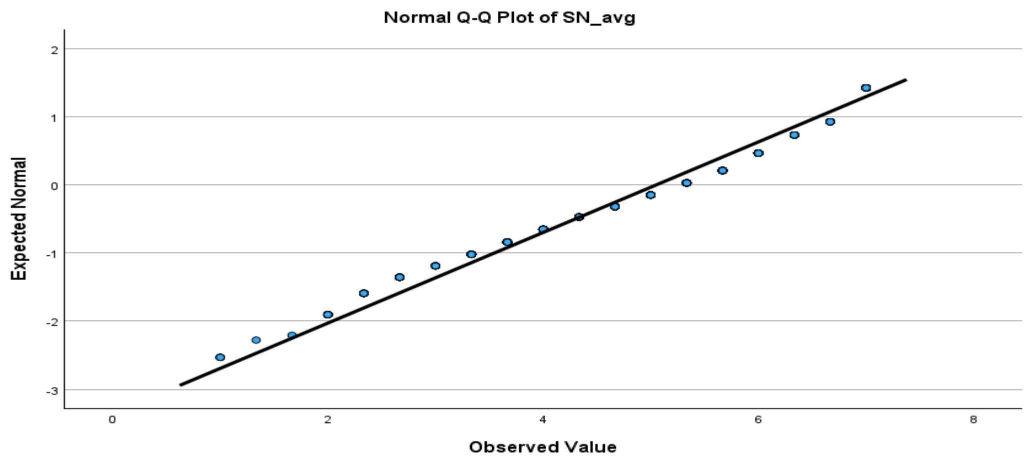
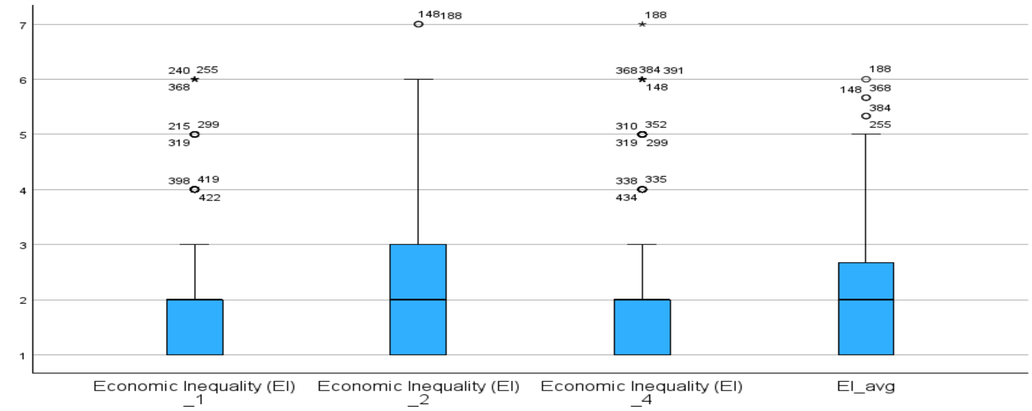


Table 40. Social Norms (SN) Outliers and Normality Tests

The Perceived Economic Inequality (EI) indicators display significant deviations from normality, particularly due to tail effects and outliers. The boxplot shows several mild outliers across all the indicators. Standard deviations range from 1.026 (EI_1) to 1.174 (EI_4), showing moderate variability in responses. Both the Kolmogorov-Smirnov and Shapiro-Wilk tests indicate significant digressions from normality ($p < 0.001$) for all indicators. The Shapiro-Wilk statistic results are close to 1 (W values ranging from 0.782 to 0.880) indicating that the data is largely normally distributed. Similarly, the Q-Q plot for EI_avg shows the central portion of the data aligning reasonably well with the diagonal, while some outlying data points in the upper tail are displaying skewness.



Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Economic Inequality (EI)_1	438	5	1	6	2.00	1.026
Economic Inequality (EI)_2	438	6	1	7	2.09	1.165
Economic Inequality (EI)_4	438	6	1	7	2.03	1.174
EI_avg	438	5.00	1.00	6.00	2.0373	.97483
Valid N (listwise)	438					

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Economic Inequality (EI)_1	.261	438	<.001	.816	438	<.001
Economic Inequality (EI)_2	.274	438	<.001	.804	438	<.001
Economic Inequality (EI)_4	.270	438	<.001	.782	438	<.001
EI_avg	.161	438	<.001	.880	438	<.001

a. Lilliefors Significance Correction

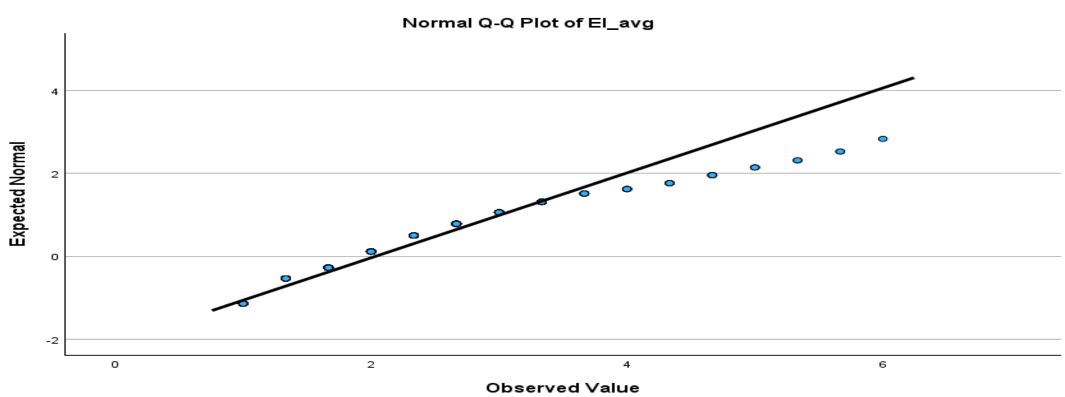
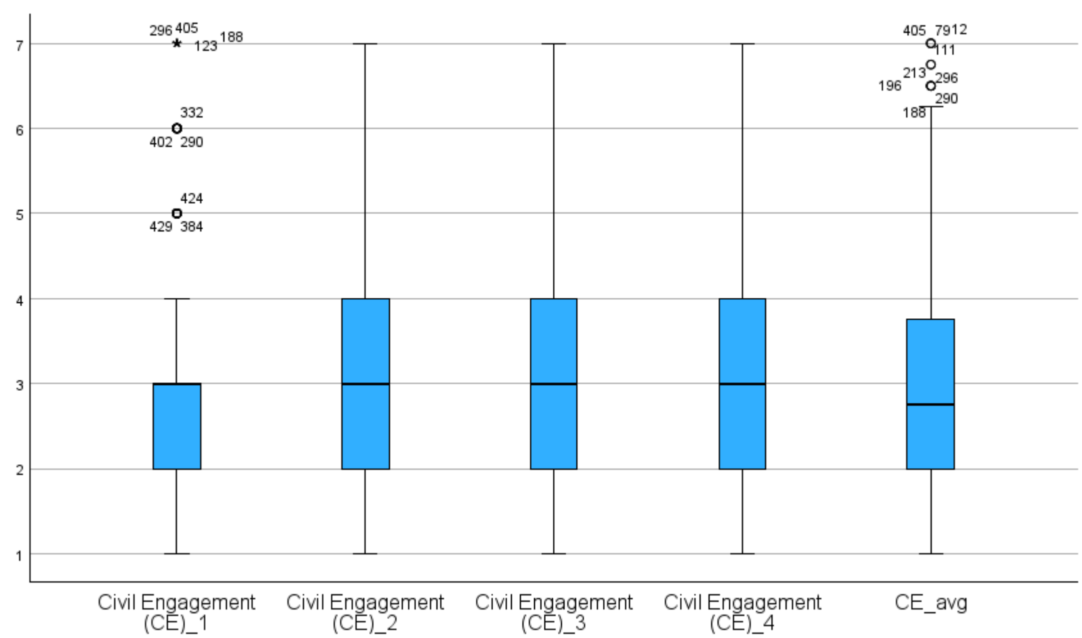


Table 41. Perceived Economic Inequality (EI) Outliers and Normality Tests

The Civil Engagement (CE) indicators display central alignment but deviate in the tails due to several outliers, leading to some non-normality. Accordingly, both the Kolmogorov-Smirnov and Shapiro-Wilk tests indicate significant digressions from normality ($p < 0.001$) for all indicators. However, the Shapiro-Wilk statistic results are close to 1 (W values ≥0.893) indicating that the data is likely normally distributed. The descriptive statistics show relatively consistent standard deviations suggesting that the responses are moderately dispersed around the mean for all indicators, with no extreme variability. The Q-Q plot for CE_avg demonstrates central alignment with deviations in the tails but overall suggesting fair approximation of normality.



Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Civil Engagement (CE)_1	438	6	1	7	2.74	1.335
Civil Engagement (CE)_2	438	6	1	7	3.13	1.519
Civil Engagement (CE)_3	438	6	1	7	3.04	1.479
Civil Engagement (CE)_4	438	6	1	7	2.98	1.445
CE_avg	438	6.00	1.00	7.00	2.9709	1.32272
Valid N (listwise)	438					

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Civil Engagement (CE)_1	.196	438	<.001	.893	438	<.001
Civil Engagement (CE)_2	.181	438	<.001	.921	438	<.001
Civil Engagement (CE)_3	.179	438	<.001	.918	438	<.001
Civil Engagement (CE)_4	.196	438	<.001	.907	438	<.001
CE_avg	.115	438	<.001	.953	438	<.001

Tests of Normality

a. Lilliefors Significance Correction

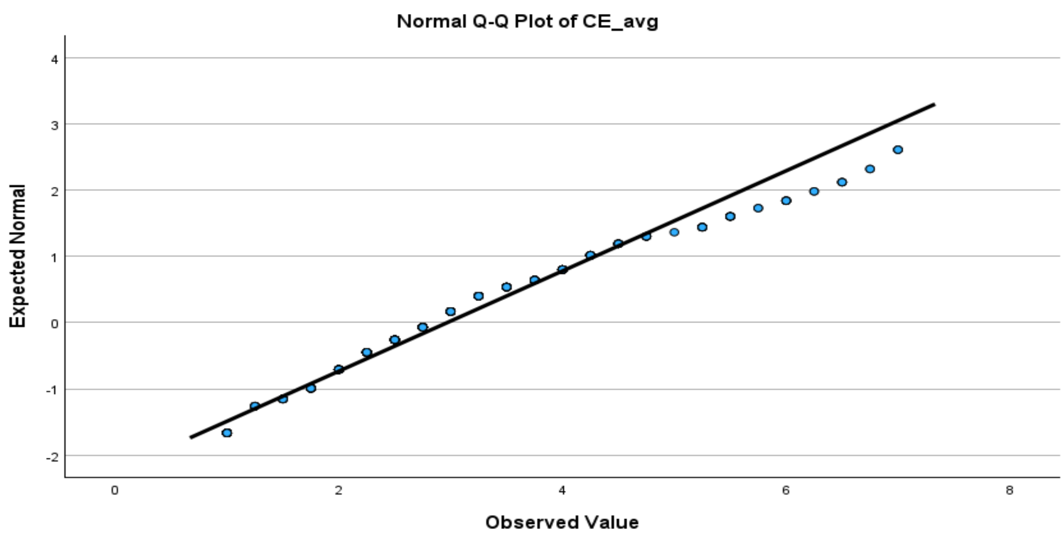
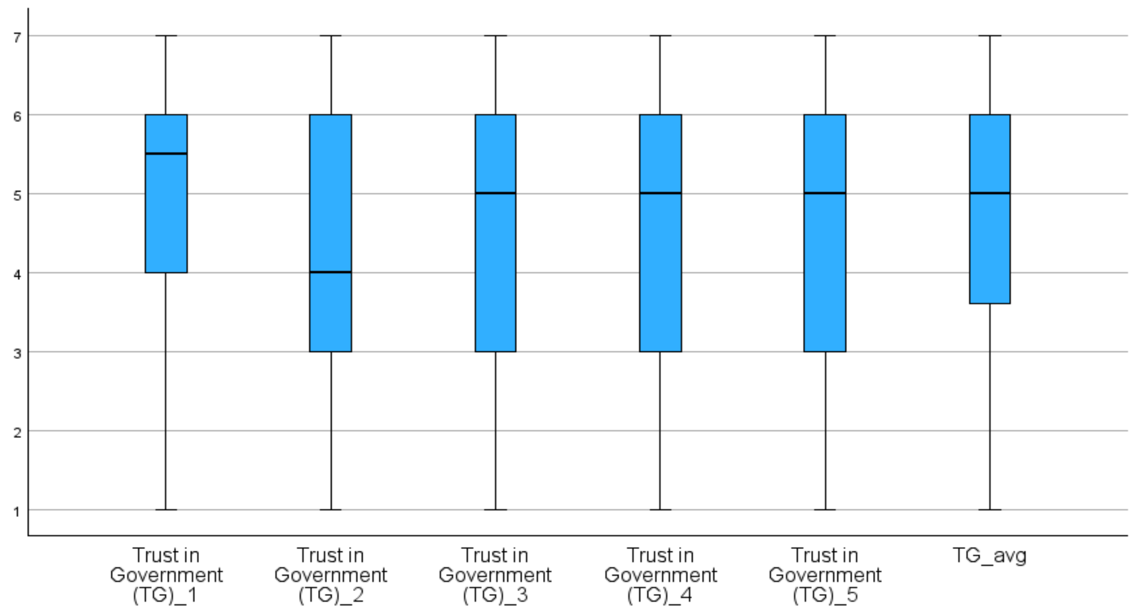


Table 42. Civil Engagement (CE) Outliers and Normality Tests

The boxplots for the Trust in Government (TG) variable do not indicate extreme suggesting data consistency. SDs range from 1.598 (TG_2) to 1.748 (TG_1), showing moderate variability in responses. Both the Kolmogorov-Smirnov and Shapiro-Wilk tests indicate significant digressions from normality ($p < 0.001$) for all indicators. However, the Shapiro-Wilk statistic results are close to 1 (W values ≥0.882) indicating that the data is likely normally distributed. The Q-Q plot for TG_avg shows strong alignment with the diagonal line in the central region, indicating normality for most of the data.



Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Trust in Government (TG)_1	438	6	1	7	5.05	1.748
Trust in Government (TG)_2	438	6	1	7	4.43	1.598
Trust in Government (TG)_3	438	6	1	7	4.84	1.728
Trust in Government (TG)_4	438	6	1	7	4.94	1.706
Trust in Government (TG)_5	438	6	1	7	4.67	1.692
TG_avg	438	6.00	1.00	7.00	4.7868	1.54158
Valid N (listwise)	438					

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Trust in Government (TG)_1	.207	438	<.001	.882	438	<.001
Trust in Government (TG)_2	.141	438	<.001	.941	438	<.001
Trust in Government (TG)_3	.185	438	<.001	.908	438	<.001
Trust in Government (TG)_4	.189	438	<.001	.904	438	<.001
Trust in Government (TG)_5	.154	438	<.001	.923	438	<.001
TG_avg	.087	438	<.001	.955	438	<.001

a. Lilliefors Significance Correction

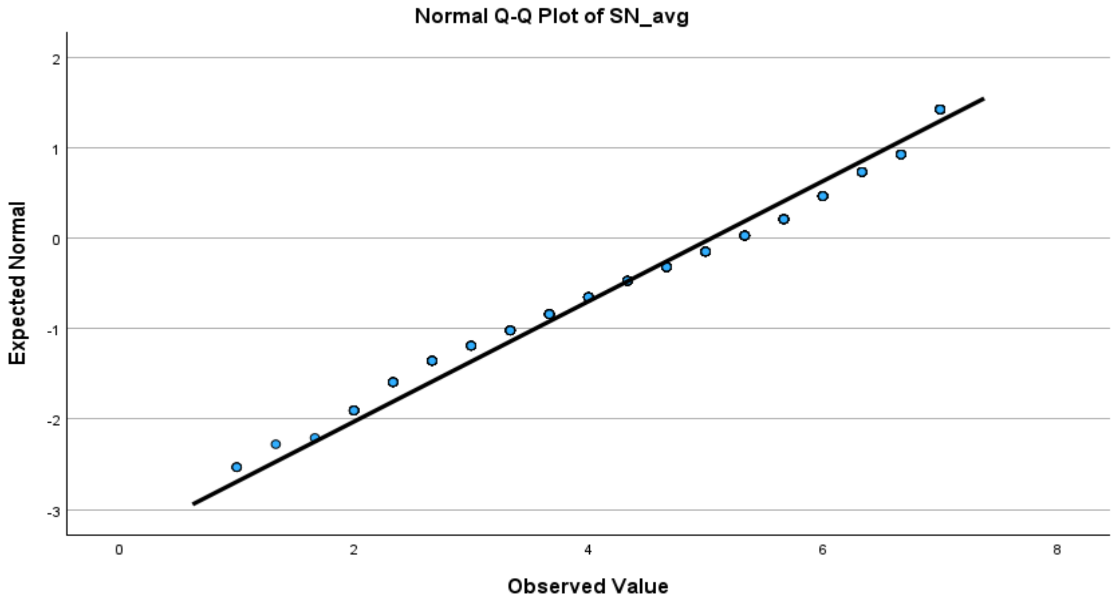
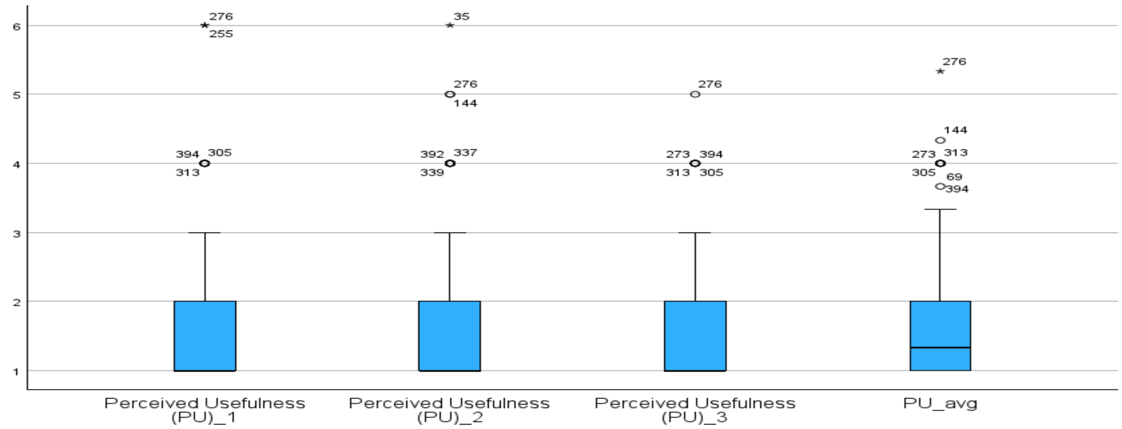


Table 43. Trust in Government (TG) Outliers and Normality Tests

The boxplots of the Perceived Usefulness (PU) variable show all three indicators (PU_1 to PU_3), and the average (PV_avg) clustered around median values of 1.5 to 2, indicating low perceived usefulness. Outliers are present across all indicators. Standard deviations are consistently low across indicators, ranging from 0.740 (PU_3) to 0.842 (PU_2), indicating minimal variability. The Kolmogorov-Smirnov and Shapiro-Wilk tests indicate significant departure from normality ($p < 0.001$) for all indicators. The Shapiro-Wilk statistic results are relatively close to 1 (W values 0.672≥0.788) indicating that the data is moderately normally distributed. The central portion of the Q-Q plot also aligns moderately well with the diagonal line, suggesting approximate normality for t of the data points, although notable outliers in the upper tail skew the distribution.



Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Perceived Usefulness (PU)_1	438	5	1	6	1.64	.799
Perceived Usefulness (PU)_2	438	5	1	6	1.65	.842
Perceived Usefulness (PU)_3	438	4	1	5	1.49	.740
PU_avg	438	4.33	1.00	5.33	1.5898	.72648
Valid N (listwise)	438					

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Perceived Usefulness (PU)_1	.299	438	<.001	.730	438	<.001
Perceived Usefulness (PU)_2	.313	438	<.001	.737	438	<.001
Perceived Usefulness (PU)_3	.375	438	<.001	.672	438	<.001
PU_avg	.253	438	<.001	.788	438	<.001

a. Lilliefors Significance Correction

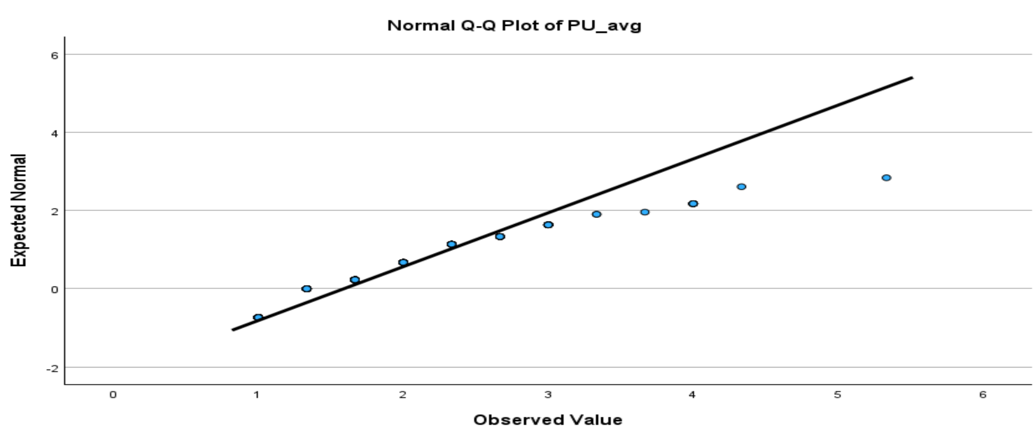
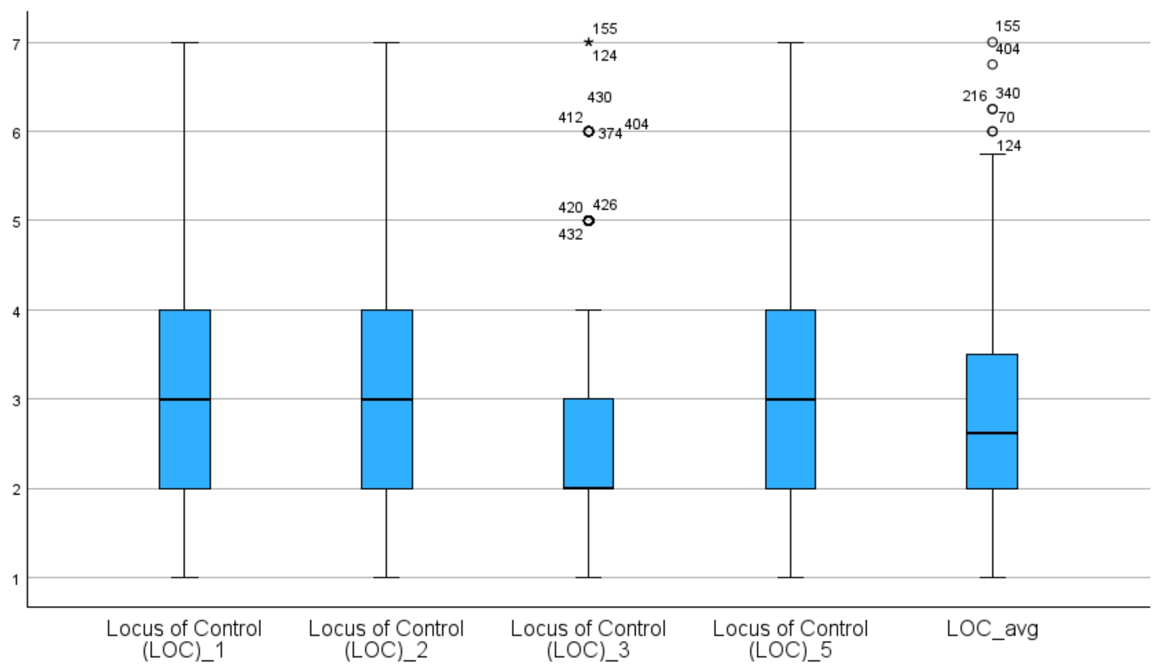


Table 44. Perceived Usefulness (PU) Outliers and Normality Tests

The boxplots of the Locus of Control (LOC) variable show ranges consistent across the indicator suggesting balanced responses. LOC_3 has a narrower range and displays some outliers. Standard deviations range from 1.301 (LOC_3) to 1.544 (LOC_5), showing moderate variability. The Kolmogorov-Smirnov and Shapiro-Wilk tests indicate significant departure from normality ($p < 0.001$) for all indicators. However, the Shapiro-Wilk statistic results are close to 1 (W values ≥ 0.902) indicating that the data is likely normally distributed. The Q-Q plot for LOC_avg shows good alignment with the diagonal line in the central portion, suggesting approximate normality for the majority of data points.



Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Locus of Control (LOC)_1	.189	438	<.001	.902	438	<.001
Locus of Control (LOC)_2	.188	438	<.001	.909	438	<.001
Locus of Control (LOC)_3	.243	438	<.001	.861	438	<.001
Locus of Control (LOC)_5	.194	438	<.001	.916	438	<.001
LOC_avg	.104	438	<.001	.960	438	<.001

a. Lilliefors Significance Correction

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Locus of Control (LOC)_1	438	6	1	7	2.89	1.520
Locus of Control (LOC)_2	438	6	1	7	2.81	1.368
Locus of Control (LOC)_3	438	6	1	7	2.50	1.301
Locus of Control (LOC)_5	438	6	1	7	3.05	1.544
LOC_avg	438	6.00	1.00	7.00	2.8116	1.17913
Valid N (listwise)	438					

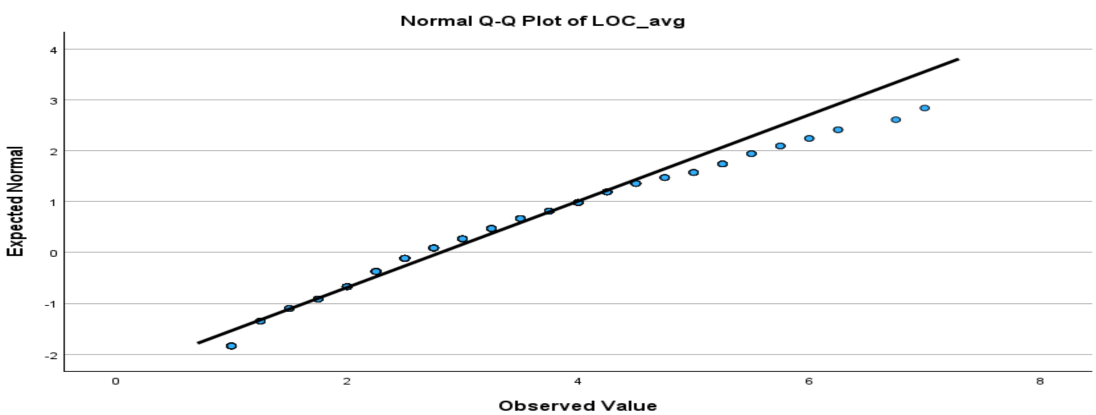
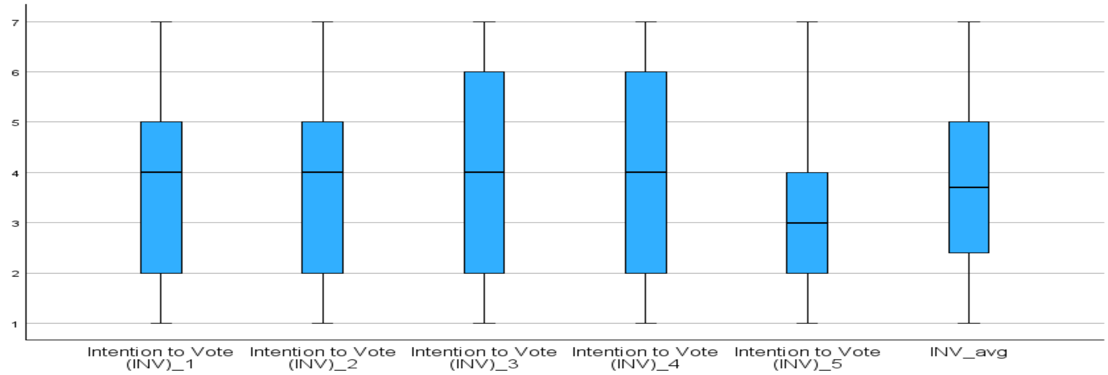


Table 45. Locus of Control (LOC) Outliers and Normality Tests

The boxplots for the dependent variable Intention to Vote for taxation for Rural Broadband infrastructure (INV) show outliers indicating a consistent data distribution. Standard deviations range from 1.769 (INV_5) to 1.856 (INV_4), indicating moderate variability in responses. The Kolmogorov-Smirnov and Shapiro-Wilk tests indicate significant deviations from normality ($p < 0.001$) for all indicators. However, the Shapiro-Wilk statistic results are close to 1 (W values ≥0.919) indicating that the data is likely normally distributed. The Q-Q plot for INV_avg shows strong alignment with the diagonal line for the majority of the data points, suggesting approximate normality.



Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Intention to Vote (INV)_1	.162	438	<.001	.919	438	<.001
Intention to Vote (INV)_2	.152	438	<.001	.928	438	<.001
Intention to Vote (INV)_3	.157	438	<.001	.925	438	<.001
Intention to Vote (INV)_4	.147	438	<.001	.924	438	<.001
Intention to Vote (INV)_5	.161	438	<.001	.916	438	<.001
INV_avg	.108	438	<.001	.957	438	<.001

a. Lilliefors Significance Correction

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Intention to Vote (INV)_1	438	6	1	7	3.81	1.827
Intention to Vote (INV)_2	438	6	1	7	3.89	1.840
Intention to Vote (INV)_3	438	6	1	7	3.91	1.843
Intention to Vote (INV)_4	438	6	1	7	3.91	1.856
Intention to Vote (INV)_5	438	6	1	7	3.52	1.769
INV_avg	438	6.00	1.00	7.00	3.8082	1.68893
Valid N (listwise)	438					

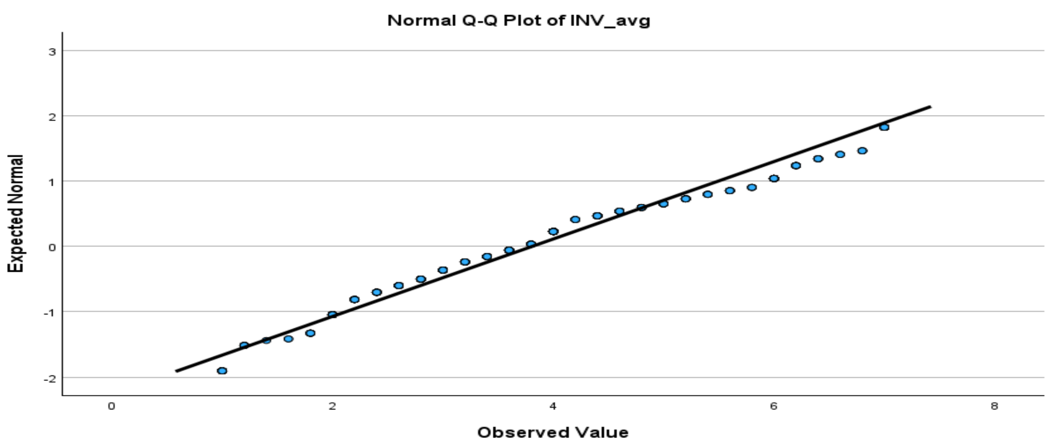


Table 46. Intention to Vote (INV) Outliers and Normality Tests

Furthermore, outliers were identified by means of a Mahalanobis distance analysis (Mahalanobis, 2018), as follows. First, the squared Mahalanobis distance for the multivariate responses of each participant in the survey (considering only the questions measuring the constructs of interest and excluding others, such as demographics, attention checks, etc.) was calculated. Second, a cutoff was determined, based on the appropriate degrees of freedom for the number of variables involved, with probability of 0.999. Third, the squared Mahalanobis distance for each row of data was compared to the cutoff to identify which observations lay outside of the specified limits. The below tables summarize the normality test results and the mean and standard deviations of the variables. The results from multivariate and univariate normality tests suggest that the dataset significantly deviates from normality. Some of the variables demonstrate high kurtosis could indicate outliers that may impact model performance. The Q-Q plot confirms deviation from multivariate normality. Overall, the analysis flagged as outliers 26 responses that were removed from the dataset for subsequent analyses.

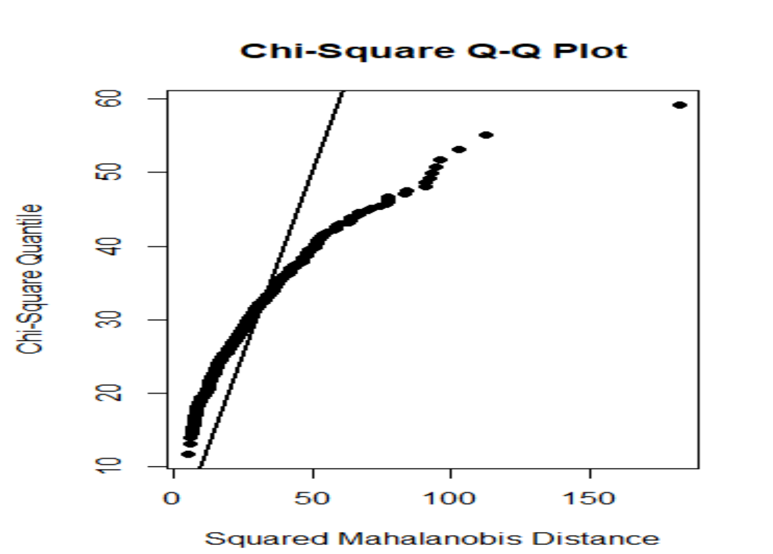


Figure 5. Mahalanobis Distance – Q-Q Plot

multivariateNormality

	Test	HZ	p value	MVN
1	Henze-Zirkler	1.035749	0	NO

$univariateNormality

	Test	Variable	Statistic	p value	Normality
1	Anderson-Darling	PV_4	17.9852	<0.001	NO
2	Anderson-Darling	PV_5	29.7411	<0.001	NO
3	Anderson-Darling	PV_8	20.6881	<0.001	NO
4	Anderson-Darling	PV_10	24.8950	<0.001	NO
5	Anderson-Darling	SN_1	13.4444	<0.001	NO
6	Anderson-Darling	SN_2	13.7367	<0.001	NO
7	Anderson-Darling	SN_3	21.3389	<0.001	NO
8	Anderson-Darling	EI_1	28.1658	<0.001	NO
9	Anderson-Darling	EI_2	29.3235	<0.001	NO
10	Anderson-Darling	EI_4	31.3667	<0.001	NO
11	Anderson-Darling	CE_1	15.5048	<0.001	NO
12	Anderson-Darling	CE_2	11.6245	<0.001	NO
13	Anderson-Darling	CE_3	12.2096	<0.001	NO
14	Anderson-Darling	CE_4	14.2732	<0.001	NO
15	Anderson-Darling	TG_1	17.7448	<0.001	NO
16	Anderson-Darling	TG_2	9.1333	<0.001	NO
17	Anderson-Darling	TG_3	13.6624	<0.001	NO
18	Anderson-Darling	TG_4	14.3993	<0.001	NO
19	Anderson-Darling	TG_5	11.0981	<0.001	NO
20	Anderson-Darling	PU_1	43.2014	<0.001	NO
21	Anderson-Darling	PU_2	44.1773	<0.001	NO
22	Anderson-Darling	PU_3	59.4533	<0.001	NO
23	Anderson-Darling	LOC_1	14.6231	<0.001	NO
24	Anderson-Darling	LOC_2	13.8500	<0.001	NO
25	Anderson-Darling	LOC_3	21.9125	<0.001	NO
26	Anderson-Darling	LOC_5	12.1996	<0.001	NO
27	Anderson-Darling	INV_1	11.8127	<0.001	NO
28	Anderson-Darling	INV_2	9.8183	<0.001	NO
29	Anderson-Darling	INV_3	10.5834	<0.001	NO
30	Anderson-Darling	INV_4	10.5643	<0.001	NO

$Descriptives

	n	Mean	Std.Dev	Median	Min	Max	25th	75th	Skew	Kurtosis
PV_4	438	2.461187	1.2932143	2.0	1	7	2	3.00	1.03227894	1.13334794
PV_5	438	1.899543	0.9020443	2.0	1	6	1	2.00	0.94438978	0.82225297
PV_8	438	2.312785	1.1301449	2.0	1	7	2	3.00	0.99940313	1.14076036
PV_10	438	2.162100	0.9513219	2.0	1	6	2	3.00	0.89845274	1.12735431
SN_1	438	4.913242	1.7145916	5.0	1	7	4	6.00	-0.50699718	-0.79325518
SN_2	438	4.874429	1.7155192	5.0	1	7	3	6.00	-0.40773216	-0.94436744
SN_3	438	5.367580	1.5690219	6.0	1	7	4	7.00	-0.90971720	-0.05342384
EI_1	438	1.995434	1.0259682	2.0	1	6	1	2.00	1.21412673	1.65368902
EI_2	438	2.086758	1.1646030	2.0	1	7	1	3.00	1.37523699	1.94341659
EI_4	438	2.029680	1.1742997	2.0	1	7	1	2.00	1.54149018	2.53493114
CE_1	438	2.737443	1.3349774	3.0	1	7	2	3.00	0.89473161	0.80407893
CE_2	438	3.125571	1.5188319	3.0	1	7	2	4.00	0.61276817	-0.14644636
CE_3	438	3.038813	1.4793314	3.0	1	7	2	4.00	0.63161594	-0.11426263
CE_4	438	2.981735	1.4445145	3.0	1	7	2	4.00	0.75440617	0.13937453
TG_1	438	5.050228	1.7477642	5.5	1	7	4	6.00	-0.70526412	-0.57985826
TG_2	438	4.429224	1.5975567	4.0	1	7	3	6.00	-0.04299551	-0.89830366
TG_3	438	4.842466	1.7275067	5.0	1	7	3	6.00	-0.44771047	-0.91952550
TG_4	438	4.942922	1.7058072	5.0	1	7	3	6.00	-0.46604103	-0.88461669
TG_5	438	4.668950	1.6919501	5.0	1	7	3	6.00	-0.19075440	-1.09572318
PU_1	438	1.636986	0.7994289	1.0	1	6	1	2.00	1.60026565	4.00170482
PU_2	438	1.646119	0.8424498	1.0	1	6	1	2.00	1.47271495	2.54351169
PU_3	438	1.486301	0.7401803	1.0	1	5	1	2.00	1.65152432	2.72132981
LOC_1	438	2.885845	1.5204873	3.0	1	7	2	4.00	0.73434926	-0.10843777
LOC_2	438	2.808219	1.3680653	3.0	1	7	2	4.00	0.71124845	0.13948689
LOC_3	438	2.500000	1.3008534	2.0	1	7	2	3.00	1.01744229	0.65025974
LOC_5	438	3.052511	1.5440090	3.0	1	7	2	4.00	0.63441727	-0.16748359
INV_1	438	3.810502	1.8273737	4.0	1	7	2	5.00	0.33432639	-0.94325174
INV_2	438	3.888128	1.8400069	4.0	1	7	2	5.00	0.18623931	-0.98404268
INV_3	438	3.913242	1.8432282	4.0	1	7	2	5.75	0.22338167	-1.01069255
INV_4	438	3.906393	1.8558844	4.0	1	7	2	6.00	0.21145866	-1.05863914

Table 47. Mahalanobis Distance - Multivariate Normality and Descriptives

Tests of Normality and Outliers Summary

Outliers are evident in some variables, as consistently reflected in the boxplots and Mahalanobis distance analysis, with these data points predominantly located at the upper end of the scale. The Chi-Square Q-Q plot for Mahalanobis distances further confirms the presence of multivariate outliers, as several points deviate significantly from the expected Chi-Square distribution. This suggests that the dataset contains high-leverage observations, that although likely genuine and not due to measurement error, distort the dataset. Both the Kolmogorov-Smirnov and Shapiro-Wilk tests indicate significant deviations from normality across all variables, aligning with the Henze-Zirkler test results, which rejected multivariate normality. Additionally, the Anderson-Darling test statistics for univariate normality consistently returned p-values below 0.001, confirming that normality assumptions do not hold for individual variables. However, the Q-Q plots reveal that the central portions of the distributions align reasonably well with normality, suggesting that the observed non-normality is primarily driven by deviations in the tails, which is further reinforced by the skewness and kurtosis measures. The Kolmogorov-Smirnov test, known for its sensitivity to extreme values—especially in large samples—can produce significant results even when deviations from normality are minor (Ghasemi & Zahediasl, 2012). Similarly, the Shapiro-Wilk test results for the data display statistics consistently close to 1, which typically suggests approximate normality in practical terms. However, the Mahalanobis distance analysis indicates that a small subset of observations disproportionately influences the dataset due to their extreme values. While the normality tests formally indicate non-normality, the actual deviations appear to be primarily due to tail distributions and multivariate outliers, rather than widespread non-normality across all data points. Given the relatively large sample size (N = 438), the dataset may be treated for the most part as approximately normal for practical purposes. However, to ensure greater adherence to normality assumptions and mitigate the impact of extreme values, the 26 multivariate high-leverage outliers identified through Mahalanobis distance testing were removed from the dataset in order to reduce potential distortions in subsequent analyses. This results to a final dataset of 412.

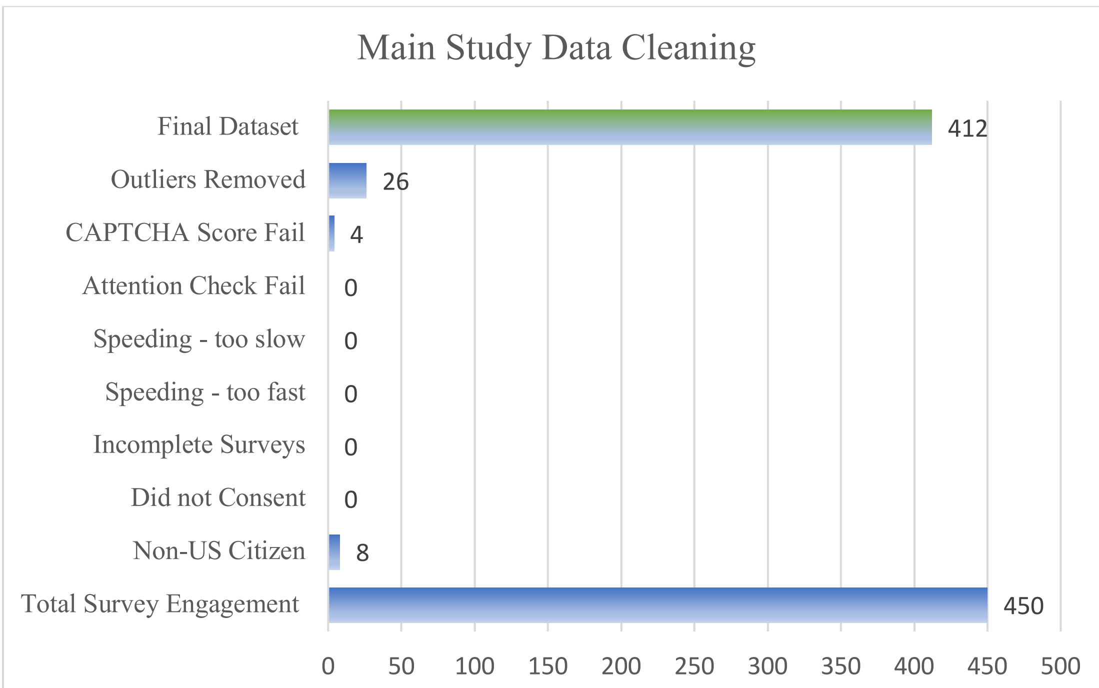
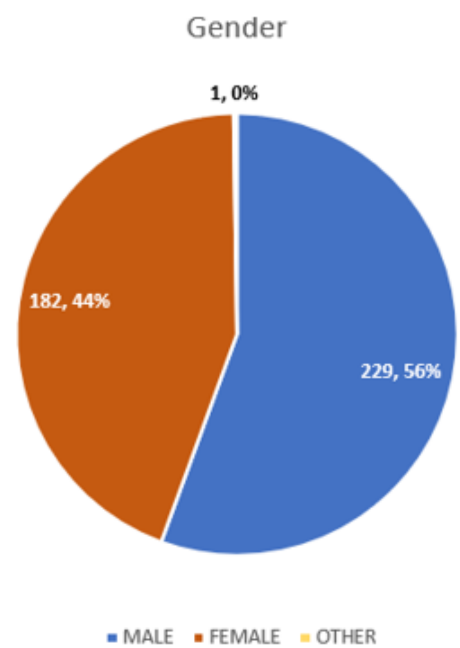


Table 48. Main Study Data Cleaning Summary

Descriptives and Demographics

Gender

The final dataset of 412 participants presents a gender distribution where males account for 56% (229 cases), females make up 44% (182 cases), and the "Other" category represents less than 1% (1 case). This distribution suggests a relatively balanced but slightly male-skewed sample, with limited gender diversity. As previously mentioned, there is support in research (Dwivedi & Lal, 2007) that gender is not a significant factor affecting attitudes toward Broadband.



		Cases					
		Valid		Missing		Total	
	GENDER	N	Percent	N	Percent	N	Percent
AGE	MALE	229	100.0%	0	0.0%	229	100.0%
	FEMALE	182	100.0%	0	0.0%	182	100.0%
	OTHER	1	100.0%	0	0.0%	1	100.0%

Table 49. Descriptives - Gender

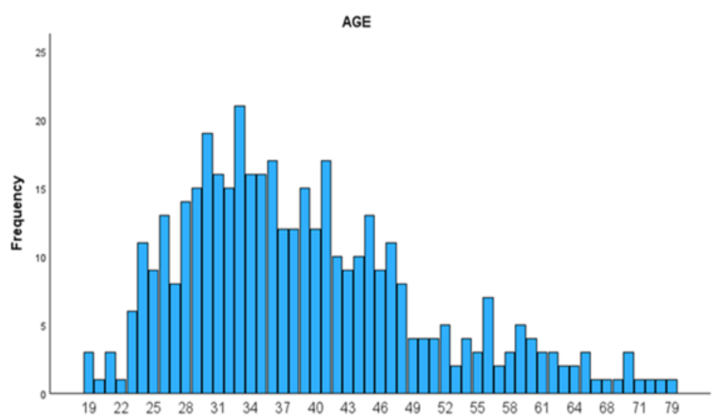
Age

The 412 participants demonstrate an age range from 19 to 79 years. The mean age is 38.90, with a median of 37 and a mode of 33, indicating a slightly right-skewed distribution (skewness = 0.861). The standard deviation is 11.32, reflecting moderate variability in age. The histogram depicts a positively skewed distribution, with more frequent occurrences around ages 30 to 40 and fewer older individuals. Normality tests (Kolmogorov-Smirnov and Shapiro-Wilk) yield significant p-values (< 0.001), indicating that age does not follow a normal distribution. The data distribution is slightly peaked (kurtosis = 0.470), further supporting non-normality. This can of course be largely attributed to the fact that the sample excludes anyone who is younger than 18 years old - which roughly accounts for a fifth of the US population as of the 2020 census (U.S. Census Bureau, 2025).

Statistics

AGE

N	Valid	412
	Missing	0
Mean		38.90
Median		37.00
Mode		33
Std. Deviation		11.320
Skewness		.861
Std. Error of Skewness		.120
Kurtosis		.470
Std. Error of Kurtosis		.240
Range		60
Minimum		19
Maximum		79



Tests of Normality[b]

	GENDER	Kolmogorov-Smirnov[a] Statistic	df	Sig.	Shapiro-Wilk Statistic	df	Sig.
AGE	1	.109	229	<.001	.950	229	<.001
	2	.116	182	<.001	.932	182	<.001

a. Lilliefors Significance Correction

b. AGE is constant when GENDER = 3. It has been omitted.

Table 50. Descriptives - Age

Examining the age distribution by gender we see that for males the mean age is 39.08 with a median of 37 and a standard deviation of 11.063, indicating moderate variation. The age range spans from 21 to 72, with a slight right skewness (0.730) and near-zero kurtosis (-0.031), suggesting a relatively normal but slightly right-tailed distribution. For Females, the mean age is slightly lower at 38.59, with the same median of 37 but a higher standard deviation of 11.651, reflecting slightly more variability. The age range is broader (19 to 79), and the skewness is more pronounced (1.033), suggesting a stronger right skew, with positive kurtosis (1.091) indicating a more peaked distribution. Overall, both gender groups exhibit similar central tendencies, but females show greater variability and a more skewed age distribution.

Descriptives[a]

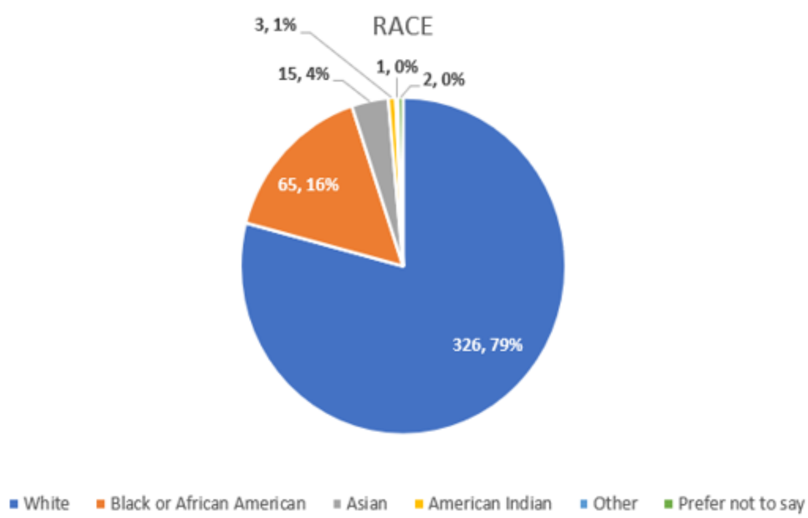
	GENDER			Statistic	Std. Error
AGE	MALE	Mean		39.08	.731
		95% Confidence Interval for Mean	Lower Bound	37.64	
			Upper Bound	40.52	
		5% Trimmed Mean		38.52	
		Median		37.00	
		Variance		122.380	
		Std. Deviation		11.063	
		Minimum		21	
		Maximum		72	
		Range		51	
		Interquartile Range		16	
		Skewness		.730	.161
		Kurtosis		-.031	.320
	FEMALE	Mean		38.59	.864
		95% Confidence Interval for Mean	Lower Bound	36.89	
			Upper Bound	40.30	
		5% Trimmed Mean		37.87	
		Median		37.00	
		Variance		135.756	
		Std. Deviation		11.651	
		Minimum		19	
		Maximum		79	
		Range		60	
		Interquartile Range		13	
		Skewness		1.033	.180
		Kurtosis		1.091	.358

a. AGE is constant when GENDER = 3. It has been omitted.

Table 51. Descriptives – Age by Gender

Race

The race distribution of the dataset shows that the majority of participants identify as White (79.1%), followed by Black or African American (15.8%), with smaller proportions identifying as Asian (3.6%), American Indian (0.7%), Other (0.2%), and those who prefer not to say (0.5%). The Hispanic ethnicity data indicates that 12.1% of respondents identify as Hispanic, while 87.9% do not. Hence, the data suggests that the sample is predominantly White and non-Hispanic.



RACE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	White	326	79.1	79.1	79.1
	Black or African American	65	15.8	15.8	94.9
	Asian	15	3.6	3.6	98.5
	American Indian	3	.7	.7	99.3
	Other	1	.2	.2	99.5
	Prefer not to say	2	.5	.5	100.0
	Total	412	100.0	100.0	

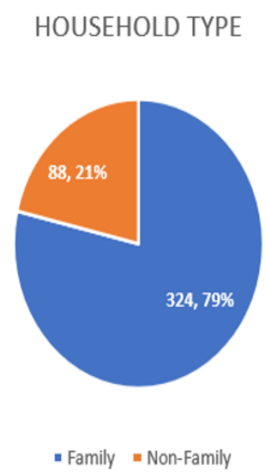
HISPANIC

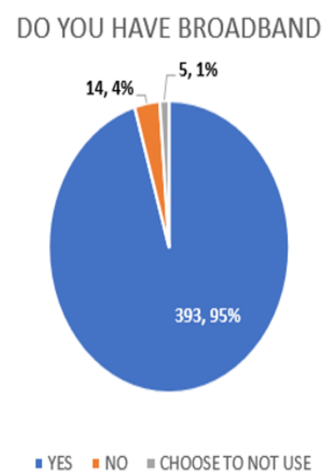
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	362	87.9	87.9	87.9
	Yes	50	12.1	12.1	100.0
	Total	412	100.0	100.0	

Table 52. Descriptives - Race

Household type

The majority of the partipants, 78.6% (324 cases), belong to Family households, while 21.4% (88 cases) are Non-Family households. This distribution highlights the prevalence of traditional family structures in the dataset.





HOUSEHOLD TYPE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Family	324	78.6	78.6	78.6
	Non-Family	88	21.4	21.4	100.0
	Total	412	100.0	100.0	

DO YOU HAVE BROADBAND

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	YES	393	95.4	95.4	95.4
	NO	14	3.4	3.4	98.8
	CHOOSE TO NOT USE	5	1.2	1.2	100.0
	Total	412	100.0	100.0	

Table 53. Descriptives – Household Type & Broadband Availability

Broadband Availability

The overwhelming majority of the participants, 95.4% (393), have broadband access, while 3.4% (14) do not, and 1.2% (5) have access to it but choose not to use it. This data suggests a high level of digital connectivity among respondents, with minimal exclusion.

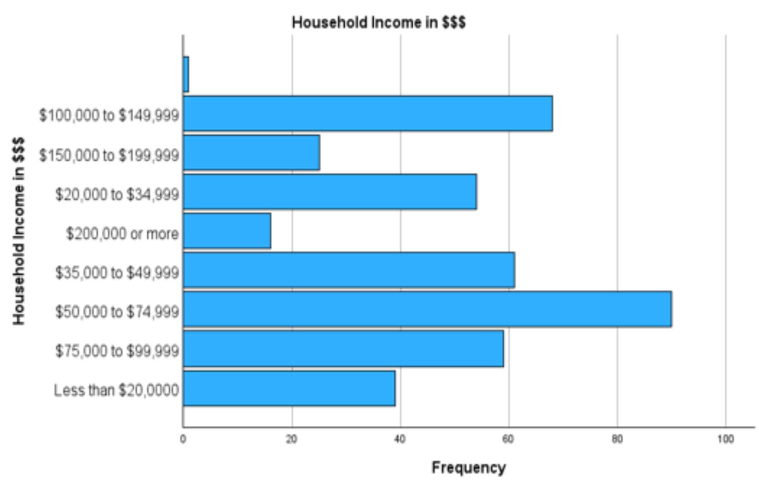
Income

The income distribution of the 412 respondents, shows a mean income category of 4.12 and a median of 4.00 (category 4 is $50,000 to $74,999 range), suggesting a relatively symmetrical distribution. The standard deviation of 1.868 indicates moderate variability. The skewness (0.095) and kurtosis (-0.769) values suggest a nearly normal distribution with a slightly flatter peak. The income breakdown reveals that the largest proportion of respondents (21.8%) fall within the $50,000-$74,999 range, followed by $100,000-$149,999 (16.5%). Only 3.9% of respondents earn $200,000 or more, while 9.5% earn below $20,000. This distribution highlights a predominantly middle-income sample, with relatively fewer individuals at the lower and higher ends of the spectrum.

Statistics

INCOME

N	Valid	412
	Missing	0
Mean		4.12
Std. Error of Mean		.092
Median		4.00
Std. Deviation		1.868
Variance		3.490
Skewness		.095
Std. Error of Skewness		.120
Kurtosis		-.769
Std. Error of Kurtosis		.240
Range		7
Minimum		1
Maximum		8



		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. <$20,000	39	9.5	9.5	9.5
	2. $20,000 to $34,999	54	13.1	13.1	22.6
	3. $35,000 to $49,999	61	14.8	14.8	37.4
	4. $50,000 to $74,999	90	21.8	21.8	59.2
	5. $75,000 to $99,999	59	14.3	14.3	73.5
	6. $100,000 to $149,999	68	16.5	16.5	90.0
	7. $150,000 to $199,999	25	6.1	6.1	96.1
	8. $200,000+	16	3.9	3.9	100.0
	Total	412	100.0	100.0	

Table 54. Descriptives - Income

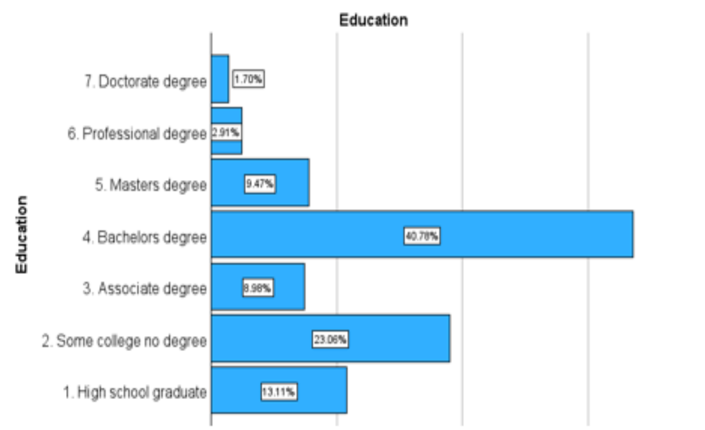
Education

The education level distribution of the 412 respondents, has a mean education level of 3.26 and a median of 4.00, indicating that the typical respondent has at least a bachelor's degree (category 4). The standard deviation of 1.419 suggests moderate variation in educational attainment. The skewness (0.063) and kurtosis (-0.522) values indicate a near-normal distribution. The histogram confirms this, showing a concentration of respondents around the bachelor's degree level. The largest group, 40.8%, holds a bachelor's degree, while 23.1% attended some college but did not earn a degree. Advanced degrees are less common, with 9.5% holding a master's, 2.9% a professional degree, and 1.7% a doctorate. This distribution suggests a highly educated sample, with a strong representation of college-educated individuals.

Statistics

EDUCATION

N	Valid	412
	Missing	0
Mean		3.26
Std. Error of Mean		.070
Median		4.00
Std. Deviation		1.419
Variance		2.013
Skewness		.063
Std. Error of Skewness		.120
Kurtosis		-.522
Std. Error of Kurtosis		.240
Range		6
Minimum		1
Maximum		7



EDUCATION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. High school graduate	54	13.1	13.1	13.1
	2. Some college no degree	95	23.1	23.1	36.2
	3. Associate degree	37	9.0	9.0	45.1
	4. Bachelors degree	168	40.8	40.8	85.9
	5. Masters degree	39	9.5	9.5	95.4
	6. Professional degree	12	2.9	2.9	98.3
	7. Doctorate degree	7	1.7	1.7	100.0
	Total	412	100.0	100.0	

Table 55. Descriptives - Education

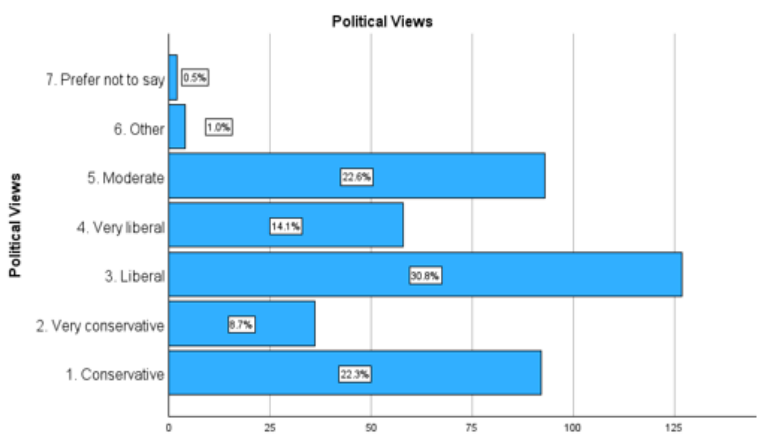
Political views

The respondents have a mean political stance of 3.11 and a median of 3.00, suggesting a slight leaning toward liberal views (category 3). The standard deviation of 1.478 indicates moderate variability. The skewness (-0.017) and kurtosis (-1.034) values suggest a fairly symmetrical but slightly flatter distribution than a normal curve. The histogram confirms this, showing a broad distribution of political views with peaks around liberal (30.8%) and moderate (22.6%) categories. Conservatives make up 22.3%, while very conservative (8.7%) and very liberal (14.1%) respondents represent smaller proportions. A small fraction (1.5%) identifies as Other or prefers not to say. The distribution over points to a balanced spread across political orientations, with a slight tilt toward liberal and moderate positions.

Statistics

POLITICAL VIEWS

N	Valid	412
	Missing	0
Mean		3.11
Std. Error of Mean		.073
Median		3.00
Std. Deviation		1.478
Variance		2.183
Skewness		-.017
Std. Error of Skewness		.120
Kurtosis		-1.034
Std. Error of Kurtosis		.240
Range		6
Minimum		1
Maximum		7



POLITICAL VIEWS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Conservative	92	22.3	22.3	22.3
	2. Very conservative	36	8.7	8.7	31.1
	3. Liberal	127	30.8	30.8	61.9
	4. Very liberal	58	14.1	14.1	76.0
	5. Moderate	93	22.6	22.6	98.5
	6. Other	4	1.0	1.0	99.5
	7. Prefer not to say	2	.5	.5	100.0
	Total	412	100.0	100.0	

Table 56. Descriptives – Political Views

Employment status

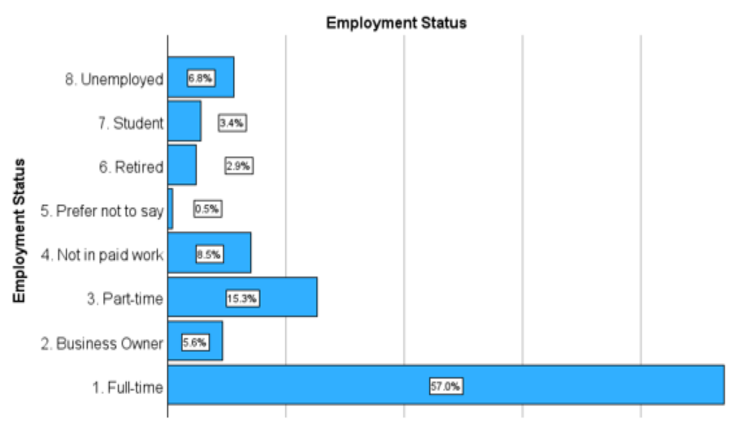
The respondents' employment status statistics demonstrate a mean of 2.46 and a median of 1.69, indicating that most respondents are closer to the full-time employment category (category 1). The standard deviation of 2.16 suggests significant variability in employment status. The skewness (1.463) and kurtosis (1.005) indicate a right-skewed distribution. The histogram confirms this, showing a high concentration of full-time workers (57%), followed by part-time workers (15.3%) and those not in paid work (8.5%). Smaller proportions of respondents are business owners (5.6%), unemployed (6.8%), students (3.4%), or retired (2.9%). This distribution suggests that the majority of respondents are actively employed with a smaller representation of business owners, retirees, and students.

Statistics

EMPLOYEMENT STATUS

N	Valid	412
	Missing	0
Mean		2.46
Std. Error of Mean		.106
Median		1.69[a]
Mode		1
Std. Deviation		2.160
Variance		4.668
Skewness		1.463
Std. Error of Skewness		.120
Kurtosis		1.005
Std. Error of Kurtosis		.240
Range		7
Minimum		1
Maximum		8

a. Calculated from grouped data.



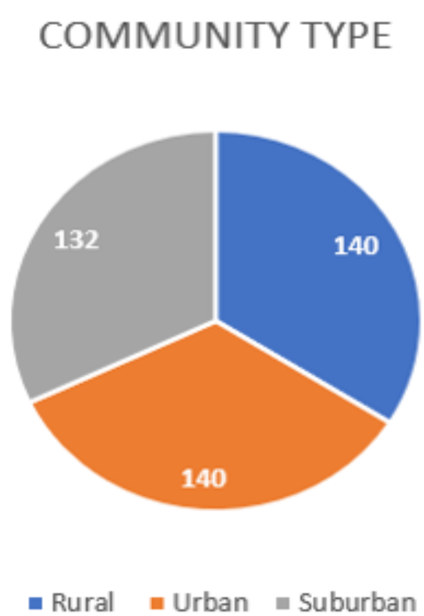
EMPLOYEMENT STATUS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Full-time	235	57.0	57.0	57.0
	2. Business Owner	23	5.6	5.6	62.6
	3. Part-time	63	15.3	15.3	77.9
	4. Not in paid work (homemaker or disabled)	35	8.5	8.5	86.4
	5. Prefer not to say	2	.5	.5	86.9
	6. Retired	12	2.9	2.9	89.8
	7. Student	14	3.4	3.4	93.2
	8. Unemployed	28	6.8	6.8	100.0
	Total	412	100.0	100.0	

Table 57. Descriptives – Employment Status

Type of Area of Habitation

Reflecting the design in the data collection stage the dataset is equally comprised of respondents from three community types: rural, urban, and suburban. Even after the data cleaning and the removal of troublesome cases the distribution by area of habitation is relatively balanced, with 34% (140 respondents) living in rural areas, 34% (140 respondents) in urban areas, and 32% (132 respondents) in suburban areas. This distribution suggests a diverse mix of living environments among respondents, with an almost equal representation of rural and urban residents, and a slightly smaller proportion of suburban dwellers.



COMMUNITY TYPE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	140	34.0	34.0	34.0
	2	140	34.0	34.0	68.0
	3	132	32.0	32.0	100.0
	Total	412	100.0	100.0	

Table 58. Descriptives – Community Type

Social Desirability (SDS) Scale

In an effort to proactively safeguard against bias in the responses that may compromise the validity of the data and measure the participants tendency to respond in a socially desirable manner the survey included the Brief Social Desirability Scale (BSDS) (Haghighat, 2007). The BSDS was developed as a concise, practical tool to measure the social desirability bias in survey responses. It is particularly useful for studies such as the present one which involves a sensitive topic, is measure subjectively, and the data is self-reported. The scale’s brevity addresses the limitations of longer inventories like the Marlowe-Crowne Social Desirability Scale by reducing respondent fatigue (Creswell & Chalder, 2001).

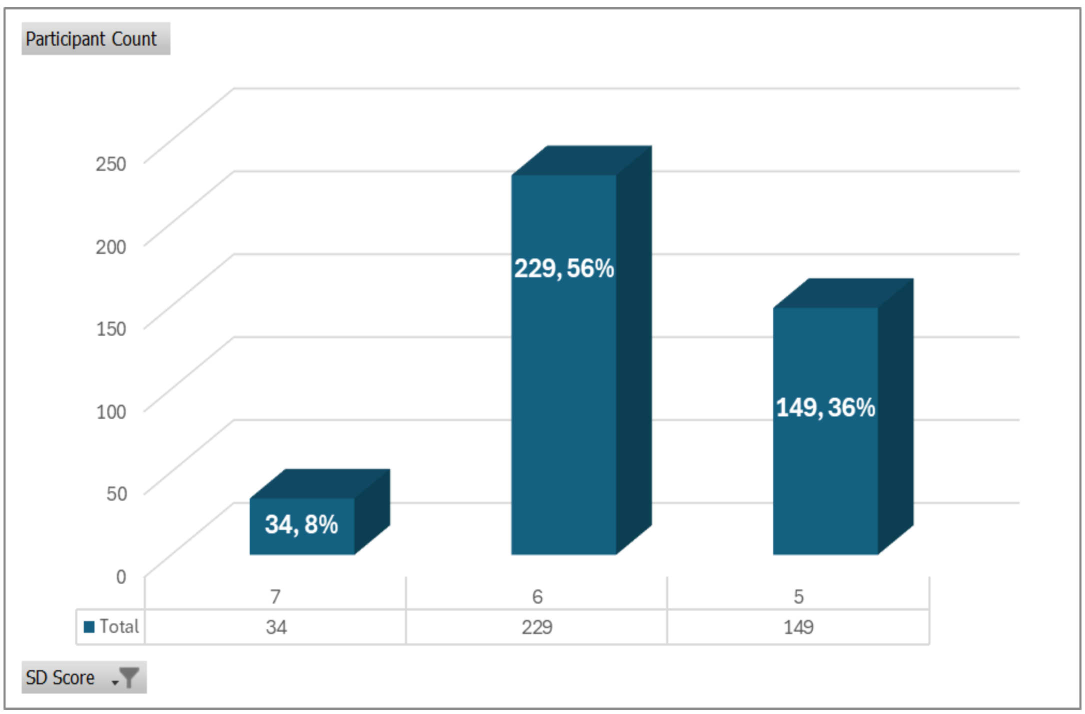
The BSDS consists of four items, each scored dichotomously (1 or 2), where a score of 1 represents the perceived socially desirable response, and a score of 2 indicates a potentially less socially desirable one. The mean values for the SD variables range from 1.35 to 1.54, with a total SD Score of 5.72. The skewness values indicate slight asymmetry in the data distribution, with SD_1 (0.611) and SD_4 (0.556) showing moderate right-skewness, while SD_2 (0.166) and SD_3 (-0.166) are closer to a normal distribution.

Descriptive Statistics

		SD_1	SD_2	SD_3	SD_4	SD Score
N	Statistic	412	412	412	412	412
Mean	Statistic	1.35	1.46	1.54	1.37	5.72
Skewness	Statistic	.611	.166	-.166	.556	.223
	Std. Error	.120	.120	.120	.120	.120
Kurtosis	Statistic	-1.634	-1.982	-1.982	-1.699	-.593
	Std. Error	.240	.240	.240	.240	.240

Table 59. BSDS Descriptives

The BSDS results of each participant were subsequently tabulated and summed up to generate an overall scale score for each participant. A score of 4 would reflect someone with high proclivity to provide socially favorable responses. Conversely, a score of 8 would indicate an individual with low sensitivity to social conformity. The majority of the respondents (229) scored a 6 (55.6%); another 149 respondents (36.2%) scored a 5; and 34 (8.3%) respondents scored a 7. Most participants exhibit a lower inclination toward socially desirable responses, with limited variability in responses across items, and with no extreme values (4s and 8s) being reported. Overall, the results indicate minimal response bias, reinforcing the reliability of self-reported data in the study.



SD Score	Participant Count	% of total
7	34	8.3%
6	229	55.6%
5	149	36.2%
Grand Total	**412**	**100.0%**

Table 60. BSDS Scoring

Factor Analysis and Reliability

Confirmatory Factor Analysis

A confirmatory factor analysis (CFA) was conducted to further examine the underlying structure and relationships between the measured variables by validating the hypothesized measurement model assess and the alignment between the observed data and the constructs. The analysis was performed using the open-source statistical software Jamovi (*The Jamovi Project*, 2025) , ensuring a rigorous and systematic evaluation of the data's structural properties.

The CFA analysis yielded a model fit that is in line with accepted thresholds, indicating a good fit between the data and the proposed measurement model. The chi-square test for exact fit produced a significant result, χ^2=1261, df=566, $p < 0.001$, which is typical for a large sample size (N = 412). The Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) are 0.943 and 0.936, respectively, both exceeding the commonly accepted threshold of 0.90, suggesting a good model fit. The Standardized Root Mean Square Residual (SRMR) is 0.057 which is close to the excellent fit range of ≤ 0.05. The Root Mean Square Error of Approximation (RMSEA) was 0.0545, with a 90% confidence interval ranging from 0.0505 to 0.0586. These values fall within the acceptable range (RMSEA ≤ 0.06), indicating a good fit.

Model Fit

Test for Exact Fit

χ^2	df	p
1261	566	< .001

Fit Measures

				RMSEA 90% CI	
CFI	TLI	SRMR	RMSEA	Lower	Upper
0.943	0.936	0.0570	0.0546	0.0505	0.0586

Table 61. Main Study Model Fit - Initial

Together, the above results provide evidence that the measurement model adequately captures the underlying structure of the data. Moreover, the factor loadings table displays strong values across almost all constructs suggesting that these latent variables are well measured and supporting the validity of subsequent structural modeling. Overall, this initial CFA run validates the hypothesized measurement model, demonstrating robust relationships between indicators and latent constructs.

Factor Loadings

Factor	Indicator	Estimate	SE	95% Confidence Interval Lower	95% Confidence Interval Upper	Z	p	Stand. Estimate
Personal Values	PV_1_rec	0.609	0.0836	0.445	0.773	7.29	<.001	**0.364**
	PV_2	0.869	0.0664	0.739	0.999	13.10	<.001	**0.609**
	PV_3	0.469	0.0477	0.376	0.563	9.85	<.001	**0.477**
	PV_4	0.925	0.0548	0.818	1.033	16.87	<.001	0.739
	PV_5	0.667	0.0378	0.593	0.741	17.65	<.001	0.761
	PV_6	0.802	0.0730	0.659	0.945	10.98	<.001	**0.526**
	PV_8	0.904	0.0455	0.815	0.994	19.90	<.001	0.826
	PV_9	0.637	0.0484	0.543	0.732	13.16	<.001	**0.611**
	PV_10	0.755	0.0384	0.680	0.831	19.69	<.001	0.821
Social Norms	SN_1	1.466	0.0671	1.335	1.598	21.86	<.001	0.879
	SN_2	1.488	0.0674	1.356	1.621	22.09	<.001	0.884
	SN_3	1.261	0.0631	1.138	1.385	19.99	<.001	0.829
	EI_1	0.705	0.0458	0.615	0.795	15.38	<.001	0.707
	EI_2	0.938	0.0484	0.843	1.032	19.38	<.001	0.844

Perceived Economic Inequality	**EI_4**	0.880	0.0460	0.790	0.970	19.12	<.001	0.835
Civic Engagement	**CE_1**	1.181	0.0495	1.084	1.279	23.85	<.001	0.910
	CE_2	1.354	0.0556	1.245	1.463	24.33	<.001	0.921
	CE_3	1.254	0.0576	1.141	1.367	21.79	<.001	0.863
	CE_4	1.299	0.0551	1.191	1.407	23.56	<.001	0.904
Trust in Government	**TG_1**	1.449	0.0669	1.318	1.580	21.66	<.001	0.857
	TG_2	1.399	0.0615	1.278	1.519	22.73	<.001	0.883
	TG_3	1.633	0.0638	1.508	1.758	25.58	<.001	0.945
	TG_4	1.531	0.0636	1.406	1.655	24.05	<.001	0.913
	TG_5	1.519	0.0643	1.393	1.645	23.64	<.001	0.904
Perceived Usefulness	**PU_1**	0.665	0.0286	0.609	0.721	23.27	<.001	0.907
	PU_2	0.710	0.0293	0.653	0.768	24.26	<.001	0.931
	PU_3	0.581	0.0287	0.525	0.638	20.26	<.001	0.829
Locus of Control	**LOC_1**	1.125	0.0665	0.995	1.256	16.91	<.001	0.752
	LOC_2	0.970	0.0594	0.854	1.087	16.34	<.001	0.734
	LOC_3	1.099	0.0541	0.993	1.205	20.30	<.001	0.857
	LOC_5	1.122	0.0671	0.990	1.253	16.71	<.001	0.747
Intention to Vote in Support of RBB	**INV_1**	1.631	0.0684	1.497	1.765	23.86	<.001	0.908
	INV_2	1.702	0.0674	1.570	1.834	25.24	<.001	0.937
	INV_3	1.771	0.0666	1.641	1.902	26.61	<.001	0.964
	INV_4	1.757	0.0669	1.625	1.888	26.26	<.001	0.957
	INV_5	1.440	0.0709	1.301	1.579	20.32	<.001	0.821

Table 62. Main Study Factor Loadings - Initial

While the majority of constructs display high loadings (above 0.7) with only slight variations, the Personal Values construct has 2 weak indicators with factor loadings below the 0.5 to 0.6 threshold (PV1_rec=0.364, PV_3=0.477) which obviously warrant removal. Upon further examination it was determined that the model fit would further improve by removing 3 more indicators with moderate loading (PV_2=0.609, PV_6=0.526), PV_9=0.611). Moreover, indicator INV_5 was also removed because doing so improves internal consistency of the INV scale as shown in the reliability analysis which is presented later in the paper. Removing INV_5 also improves (albeit marginally) the model fit, while simplifying the overall model.

Factor Loadings of Removed Indicators

				95% Confidence Interval				
Factor	Indicator	Estimate	SE	Lower	Upper	Z	p	Stand. Estimate
Personal Values	PV_1_rec	0.609	0.0836	0.445	0.773	7.29	<.001	0.364
	PV_2	0.869	0.0664	0.739	0.999	13.1	<.001	0.609
	PV_3	0.469	0.0477	0.376	0.563	9.85	<.001	0.477
	PV_6	0.802	0.073	0.659	0.945	10.98	<.001	0.526
	PV_9	0.637	0.0484	0.543	0.732	13.16	<.001	0.611
Intention to Vote in Support of RBB	INV_5	1.44	0.0709	1.301	1.579	20.32	<.001	0.821

Table 63. Main Study Removed Indicators

The subsequent CFA analysis improves the model fit achieving an excellent fit with the data. The Chi-square test result χ^2=868, df=337, p <. 0 001. The Comparative Fit

Index (CFI) is 0.955, which exceeds the recommended threshold of 0.95, indicating excellent fit. The Tucker-Lewis Index (TLI) is 0.948, also meeting the benchmark for a well-fitting model. The Standardized Root Mean Square Residual (SRMR) is 0.0418 which is ≤ 0.05 indicating excellent fit. Finally, the Root Mean Square Error of Approximation (RMSEA) is 0.0562, with a 90% confidence interval ranging from 0.0513 to 0.0611, which falls within the acceptable range of ≤ 0.06 for good fit. These results collectively indicate that the model provides a robust representation of the data, capturing the relationships between the variables effectively.

Model Fit

Test for Exact Fit

χ^2	df	p
868	377	< .001

Fit Measures

				RMSEA 90% CI	
CFI	TLI	SRMR	RMSEA	Lower	Upper
0.955	0.948	0.0418	0.0562	0.0513	0.0611

Factor Loadings

				95% Confidence Interval				
Factor	**Indicator**	**Estimate**	**SE**	**Lower**	**Upper**	**Z**	**p**	**Stand. Estim.**
Personal Values	**PV_4**	0.920	0.0559	0.811	1.030	16.5	<.001	0.736
	PV_5	0.675	0.0381	0.600	0.750	17.7	<.001	0.770
	PV_8	0.911	0.0461	0.820	1.001	19.8	<.001	0.832
	PV_10	0.753	0.0390	0.677	0.829	19.3	<.001	0.818
Social Norms	**SN_1**	1.466	0.0671	1.335	1.597	21.9	<.001	0.879
	SN_2	1.489	0.0674	1.357	1.621	22.1	<.001	0.884

	SN_3	1.261	0.0631	1.138	1.385	20.0	<.001	0.828
Perceived Economic Inequality	**EI_1**	0.706	0.0458	0.616	0.795	15.4	<.001	0.708
	EI_2	0.937	0.0484	0.842	1.032	19.4	<.001	0.843
	EI_4	0.880	0.0460	0.789	0.970	19.1	<.001	0.835
Civic Engag.	**CE_1**	1.181	0.0496	1.084	1.279	23.8	<.001	0.910
	CE_2	1.354	0.0556	1.245	1.463	24.3	<.001	0.921
	CE_3	1.253	0.0576	1.140	1.366	21.8	<.001	0.862
	CE_4	1.299	0.0551	1.191	1.407	23.6	<.001	0.905
Trust in Govern.	**TG_1**	1.449	0.0669	1.318	1.580	21.7	<.001	0.857
	TG_2	1.399	0.0615	1.278	1.519	22.7	<.001	0.883
	TG_3	1.633	0.0638	1.508	1.758	25.6	<.001	0.945
	TG_4	1.531	0.0637	1.406	1.655	24.0	<.001	0.913
	TG_5	1.519	0.0643	1.393	1.645	23.6	<.001	0.904
Perceived Usefuln.	**PU_1**	0.665	0.0285	0.609	0.721	23.3	<.001	0.908
	PU_2	0.710	0.0293	0.652	0.767	24.2	<.001	0.930
	PU_3	0.582	0.0287	0.525	0.638	20.3	<.001	0.829
Locus of Control	**LOC_1**	1.126	0.0665	0.995	1.256	16.9	<.001	0.752
	LOC_2	0.970	0.0594	0.854	1.086	16.3	<.001	0.734
	LOC_3	1.099	0.0541	0.993	1.205	20.3	<.001	0.857
	LOC_5	1.122	0.0671	0.990	1.253	16.7	<.001	0.747
Intention to Vote in Support of RBB	**INV_1**	1.630	0.0685	1.496	1.764	23.8	<.001	0.908
	INV_2	1.701	0.0675	1.568	1.833	25.2	<.001	0.937
	INV_3	1.773	0.0665	1.643	1.904	26.6	<.001	0.965
	INV_4	1.757	0.0669	1.626	1.888	26.2	<.001	0.957

Table 64. Main Study Model Fit & Factor Loadings – Final

Reliability Analysis

Personal Values

The results for the Personal Values (PV) scale show good internal consistency and reliability, with Cronbach's Alpha (a) at 0.875 and McDonald's Omega at 0.855, (Cronbach, 1951). This suggests that the scale reliably measures the intended construct. All items make meaningful contributions to the scale and will be retained.

Scale Reliability Statistics

	Mean	SD	Cronbach's α	McDonald's ω
scale	2.19	0.875	0.855	0.867

Item Reliability Statistics

				If item dropped	
	Mean	SD	Item-rest correlation	Cronbach's α	McDonald's ω
PV_4	2.43	1.253	0.648	0.852	0.858
PV_5	1.88	0.877	0.706	0.820	0.839
PV_8	2.29	1.097	0.763	0.788	0.807
PV_10	2.15	0.921	0.732	0.807	0.820

Table 65. Personal Values (PV) Reliability

Social Norms

The Social Norms (SN) scale reliability analysis yields excellent internal consistency, as indicated by a Cronbach's Alpha (α) of 0.897 and McDonald's Omega (ω) of 0.899. Both values demonstrating that the scale reliably measures the intended construct. All items make meaningful contributions to the scale and will be retained.

Scale Reliability Statistics

	Mean	SD	Cronbach's α	McDonald's ω
scale	5.08	1.48	0.897	0.899

Item Reliability Statistics

	Mean	SD	Item-rest correlation	If item dropped Cronbach's α	McDonald's ω
SN_1	4.95	1.67	0.797	0.854	0.857
SN_2	4.89	1.69	0.824	0.830	0.832
SN_3	5.40	1.52	0.776	0.874	0.874

Table 66. Social Norms(SN) Reliability

Perceived Economic Inequality

The reliability analysis for the Economic Inequality (EI) scale indicates good internal consistency, with Cronbach's Alpha (α) of 0.836 and McDonald's Omega (ω) of 0.839. Both values surpass the commonly accepted threshold of 0.70, confirming the scale's reliability in measuring the construct. All items make meaningful contributions to the scale and will be retained.

Scale Reliability Statistics

	Mean	SD	Cronbach's α	McDonald's ω
scale	1.99	0.916	0.836	0.839

Item Reliability Statistics

	Mean	SD	Item-rest correlation	If item dropped Cronbach's α	McDonald's ω
EI_1	1.97	0.998	0.635	0.830	0.831
EI_2	2.05	1.113	0.735	0.734	0.735
EI_4	1.96	1.055	0.728	0.742	0.744

Table 67. Perceived Economic Inequality (EI) Reliability

Civic Engagement

The reliability analysis for the Civic Engagement (CE) scale demonstrates excellent internal consistency, with Cronbach's Alpha (α) of 0.943 and McDonald's Omega (ω) of 0.944. These values exceed the widely accepted threshold of 0.70, confirming the scale's robustness in measuring the construct. All items make meaningful contributions to the scale and will be retained.

Scale Reliability Statistics

	Mean	SD	Cronbach's α	McDonald's ω
scale	2.95	1.31	0.943	0.944

Item Reliability Statistics

				If item dropped	
	Mean	SD	Item-rest correlation	Cronbach's α	McDonald's ω
CE_1	2.72	1.30	0.876	0.924	0.924
CE_2	3.09	1.47	0.882	0.920	0.922
CE_3	3.00	1.45	0.831	0.936	0.938
CE_4	2.98	1.44	0.873	0.923	0.925

Table 68.Civic Engagement (CE) Reliability

Trust In Government

The reliability analysis for the Trust in Government (TG) scale indicates excellent internal consistency, with Cronbach's Alpha (α) of 0.948 and McDonald's Omega (ω) of 0.949. All items make meaningful contributions to the scale and will be retained.

Scale Reliability Statistics

	Mean	SD	Cronbach's α	McDonald's ω
scale	4.81	1.54	0.955	0.956

Item Reliability Statistics

	Mean	SD	Item-rest correlation	If item dropped	
				Cronbach's α	McDonald's ω
TG_1	5.11	1.69	0.832	0.952	0.952
TG_2	4.44	1.59	0.862	0.947	0.947
TG_3	4.84	1.73	0.917	0.937	0.938
TG_4	4.96	1.68	0.884	0.943	0.944
TG_5	4.69	1.68	0.881	0.944	0.944

Table 69. Trust in Government (TG) Reliability

Perceived Usefulness

The reliability analysis for the Perceived Usefulness (PU) scale demonstrates excellent internal consistency, with a Cronbach's Alpha (α) of 0.918 and McDonald's Omega (ω) of 0.918. All items make meaningful contributions to the scale and will be retained.

Scale Reliability Statistics

	Mean	SD	Cronbach's α	McDonald's ω
scale	1.56	0.680	0.918	0.919

Item Reliability Statistics

	Mean	SD	Item-rest correlation	If item dropped	
				Cronbach's α	McDonald's ω
PU_1	1.62	0.734	0.850	0.869	0.871
PU_2	1.61	0.764	0.864	0.858	0.858
PU_3	1.47	0.702	0.793	0.915	0.916

Table 70. Perceived Usefulness (PU) Reliability

Locus of Control

The reliability analysis for the Locus of Control (LOC) scale indicates good internal consistency, with a Cronbach's Alpha (α) of 0.852 and McDonald's Omega (ω) of 0.856. Both reliability coefficients surpass accepted threshold of 0.70, demonstrating that the LOC scale exhibits strong internal consistency. Furthermore, each individual item within the scale contributes meaningfully to the overall construct and will be retained.

Scale Reliability Statistics

	Mean	SD	Cronbach's α	McDonald's ω
scale	2.79	1.17	0.852	0.856

Item Reliability Statistics

				If item dropped	
	Mean	**SD**	**Item-rest correlation**	**Cronbach's α**	**McDonald's ω**
LOC_1	2.89	1.50	0.689	0.814	0.820
LOC_2	2.78	1.32	0.663	0.824	0.831
LOC_3	2.49	1.28	0.762	0.786	0.788
LOC_5	3.01	1.50	0.670	0.823	0.828

Table 71. Locus of Control (LOC) Reliability

Intention to vote in support of Rural Broadband Taxation

The reliability analysis for the Intention to Vote (INV) scale demonstrates excellent internal consistency, with a Cronbach's Alpha (α) of 0.964 and McDonald's Omega (ω) of 0.965, both well above the 0.90 threshold. INV_5 displays a weaker contribution to the scale and will be removed to both improve the metric and further simplify the model.

This improves both the Cronbach's Alpha (α) and McDonald's Omega (ω) values to 0.970.

Scale Reliability Statistics

	Mean	SD	Cronbach's α	McDonald's ω
scale	3.82	1.69	0.964	0.965

Item Reliability Statistics

				If item dropped	
	Mean	**SD**	**Item-rest correlation**	**Cronbach's α**	**McDonald's ω**
INV_1	3.83	1.80	0.896	0.956	0.957
INV_2	3.92	1.82	0.927	0.951	0.952
INV_3	3.90	1.84	0.933	0.950	0.951
INV_4	3.88	1.84	0.926	0.951	0.952
INV_5	3.55	1.76	0.807	0.970	0.970

Table 72. Intention to Vote (INV) Reliability

Correlations

The correlation matrix below highlights the significant relationships between the constructs. Some notable correlation include Personal Values (PV) are positively linked to Civic Engagement CE (0.67). Social Norms (SN) shows a moderate to strong correlation (0.56) with Intention to Vote (INV). Trust in Government (TG) is positively related to SN (0.57) but negatively associated with Perceived Economic Inequality (EI) (-0.18). While CE strongly correlates with INV (0.43), Locus of Control (LOC) shows a near-zero correlation (-0.005).

Factor	Personal Values	Social Norms	Perceived Economic Inequality	Civic Engagement	Trust in Government	Perceived Usefulness	Locus of Control	Intention to Vote in Support of RBB
Personal Values	1							
Social Norms	0.17539	1						
Perceived Economic Inequality	0.37158	-0.07206	1					
Civic Engagement	0.67056	0.41791	0.18969	1				
Trust in Government	0.11846	0.56709	-0.17858	0.35921	1			
Perceived Usefulness	0.37276	-0.14213	0.34143	0.14121	-0.10108	1		
Locus of Control	0.09715	-0.03373	0.28494	-0.06034	-0.33273	0.13704	1	
Intention to Vote in Support of RBB	0.2963	0.56178	0.11107	0.42628	0.34712	0.04405	-0.00547	1

Table 73. Construct Correlation Matrix

Summary

The reliability and validity of final model scales were rigorously analyzed to ensure the internal consistency and reliability of the measurement scales that have emerged. All reported Cronbach's alpha values are above the empirically acceptable threshold for reliability (e.g., $\alpha \geq 0.70$). The findings indicate that all scales exhibit strong internal consistency, as evidenced by high Cronbach's alpha scores (α = 0.836-0.970). Complementing Cronbach's alpha and providing a more robust assessment of scale reliability, McDonald's Omega (ω) is also reported (ω = 0.839–0.970). The close alignment of α and ω values across scales (e.g., SN: α = 0.897, ω = 0.899; CE: α = 0.943, ω = 0.944) reinforces the conclusion that the constructs are well-measured. Consequently, the model is supported by reliable measurement scales that effectively capture the intended constructs. Ensuring such measurement reliability allows us to confidently proceed with draw valid conclusions about relationships between variables in the subsequent SEM-PLS analysis.

Summary Reliability and Scale Statistics

Scale	Number of Items	Cronbach's Alpha	McDonald's ω	Mean	SD
Personal Values (PV)	4	0.855	0.867	2.190	0.875
Social Norms (SN)	3	0.897	0.899	5.080	1.480
Perceived Economic Inequality (EI)	3	0.836	0.839	1.990	0.916
Civic Engagement (CE)	4	0.943	0.944	2.950	1.310
Trust in Government (TG)	5	0.955	0.956	4.810	1.540
Perceived Usefulness (PU)	3	0.918	0.919	1.560	0.680
Locus of Control (LOC)	4	0.852	0.856	2.790	1.170
Intention to Vote in Support of Broadband (INV)	4	0.970	0.970	2.820	1.690
	30				

Table 74. Main Study Summary Reliability and Scale Statistics Summary

SEM-PLS Analysis and Hypotheses Testing

The use of Structural Equation Modeling - Partial Least Squares (SEM-PLS) was selected as the best suited statistical approach for analyzing the complex relationships between the latent constructs examined in this study. SEM-PLS allows simultaneous estimations of measurement and structural models, providing a more holistic view of the behavior being examined. A key benefit is its ability to accommodate diverse sample sizes and non-normally distributed data. SmartPLS (Ringle et al., 2024) was used in this analysis due to its user-friendly interface and functionality. Here is an overview of the original model and hypotheses as depicted in SmartPLS:

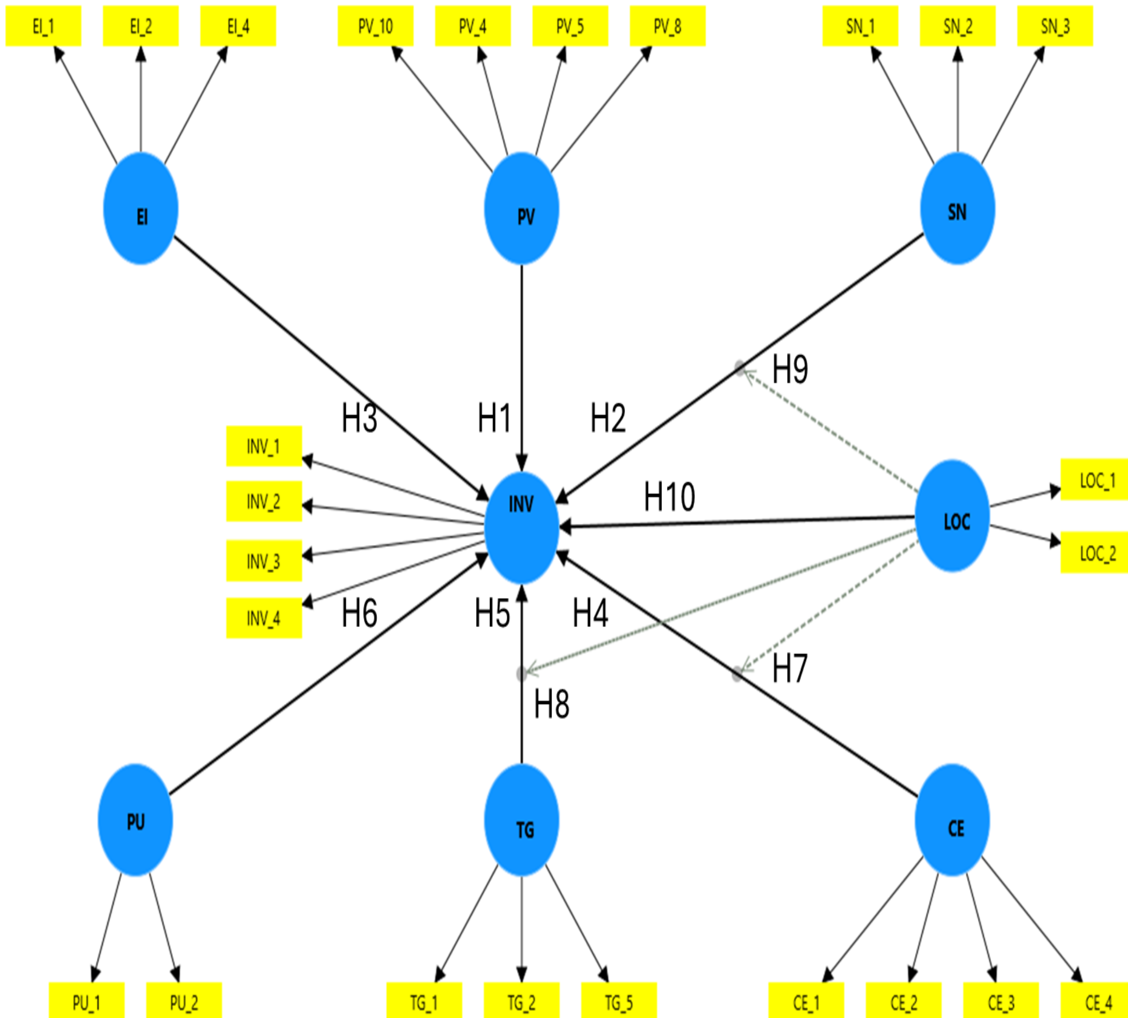


Figure 6. Constructs, Indicators, and Hypotheses in SmartPLS

Initial PLS_SEM results

The PLS-SEM algorithm calculation in SmartPLS generated the loadings and path coefficients depicted in the below Figure 7.

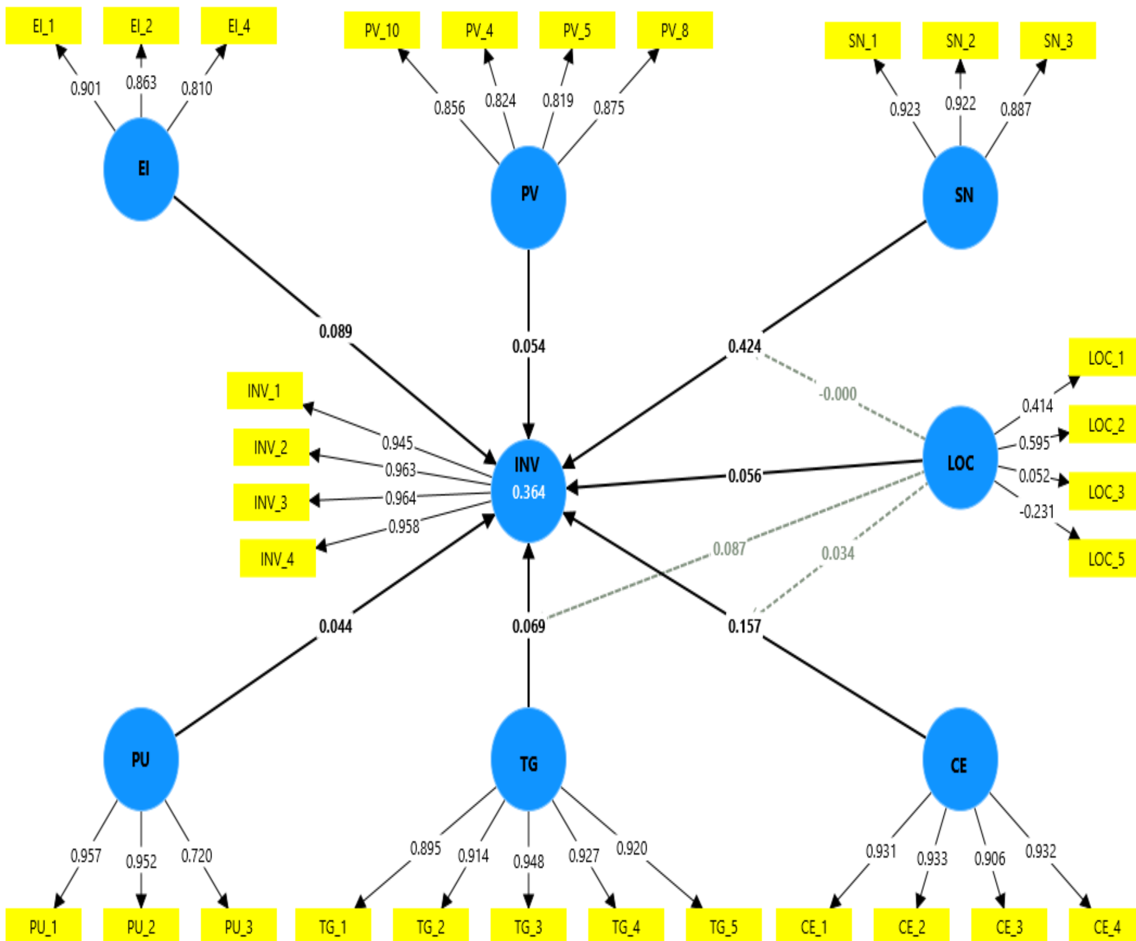


Figure 7. Path Coefficients and Outer Loadings in First PLS-SEM Run

The model achieves a moderate explanatory power of $R^2 = 0.364$ meaning that 36.4% of the variance in Intention to Vote (INV) is explained by its predictors. The strongest positive effect (0.424) is between Social Norms (SN) and Intention to Vote (INV) suggesting that social influence plays a critical role in voting intentions. This is followed by Civic Engagement (CE) which has a moderate effect (0.157) on INV. Other indicators also have meaningful but weaker positive effects on INV. Specifically, Perceived Economic Inequality (EI) has a positive effect of 0.089, followed by Trust in Government (TG) with an effect of 0.069. Locus of Control (LOC) contributes with a value of 0.056, while Personal Values (PV) and Perceived Usefulness (PU) have smaller effects of 0.054 and 0.044, respectively.

Some LOC indicators display mixed or negative loadings (e.g., LOC_3: 0.052, LOC_5: -0.231). These indicators were removed from subsequent iterations of the analysis to improve construct validity. Furthermore, upon further examination indicator PU_3 was also removed because doing so improves the reliability of the Perceived Usefulness construct. Lastly, indicators TG_4 and TG_5 exhibited collinearity issues and were also removed enhance model stability. These refinements contribute to a more robust measurement model and improve the overall reliability and validity of the constructs.

Final PLS_SEM results

Following the modifications discussed above a re-run of the PLS-SEM algorithm calculation in SmartPLS generated the loadings and path coefficients depicted in the below Figure 8. The revised model exhibits an $R^2 = 0.371$, indicating a moderate improvement in explanatory power compared to the previous iteration ($R^2 = 0.364$). This suggests that 37.1% of the variance in Intention to Vote (INV) is explained by its predictors. The strongest predictor remains Social Norms (SN), now with an increased path coefficient of 0.451, $f^2 = 0.197$, reinforcing the notion that social influence significantly impacts voting intentions (J. Cohen, 2013). Additionally, Civic Engagement (CE) also shows an improvement from 0.157 to 0.166, $f^2=0.021$, on its moderate effect on INV, further evidencing the role of the indicator in shaping voting behavior. The removal of PU_3 resulted in stronger factor loadings for PU (PU_1 = 0.961, PU_2 = 0.960), improving construct reliability. However, its direct effect on INV declined (to

0.048 from 0.054 in the first iteration). Locus of Control (LOC) was reduced to two indicators (LOC_1, LOC_2), resulting in stronger factor loadings (0.824, 0.930). However, its direct effect on INV remains weak (0.012), indicating that personal agency beliefs may not directly impact voting behavior but could play a role in indirect relationships. The other predictors all display strong factor loading with weaker, yet still meaningful effects on INV (Trust in Government (TG) → INV (0.071), Perceived Economic Inequality (EI) → INV (0.074), Personal Values (PV) → INV (0.044)).

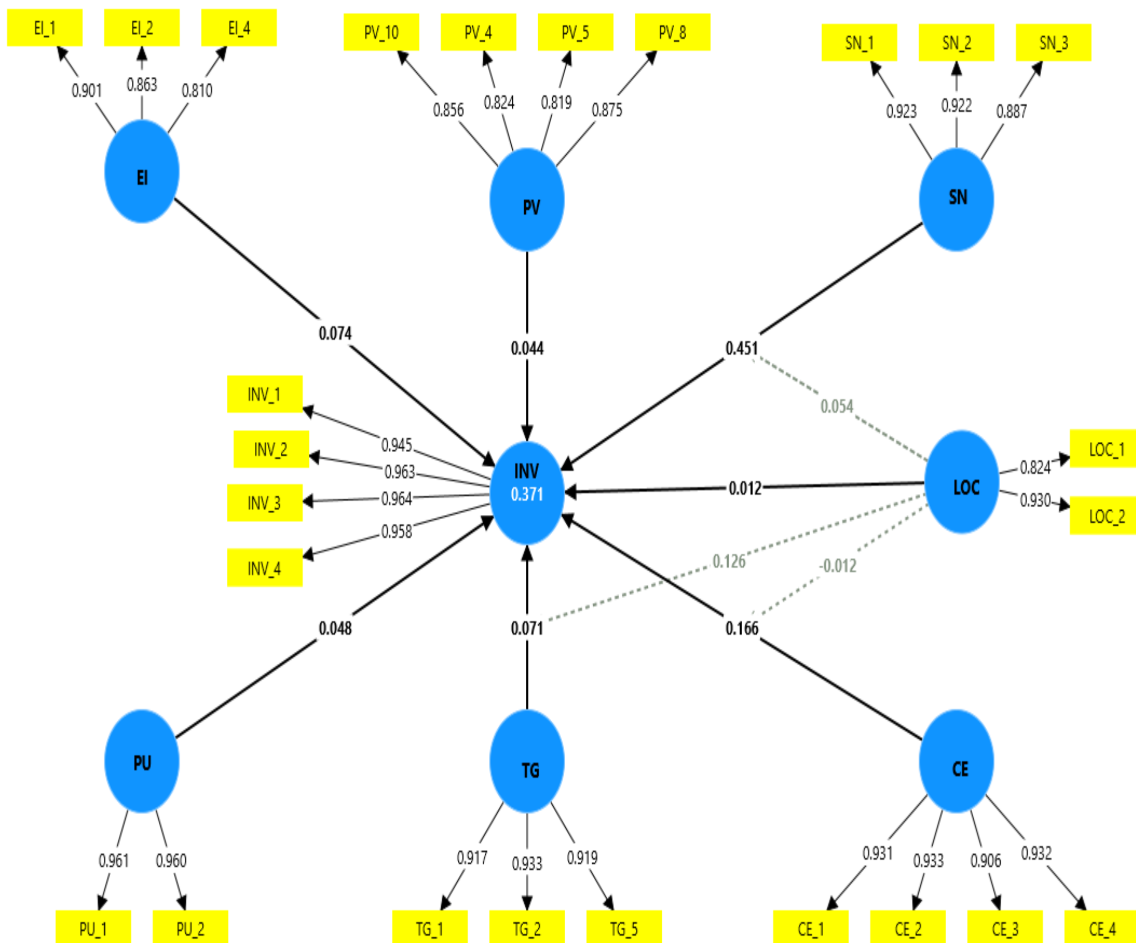


Figure 8. Path Coefficients and Outer Loadings in Final PLS-SEM Run

Reliability and Convergent Validity

All the constructs exhibit high internal consistency, with mostly excellent, or very good Cronbach's alpha (a) and composite reliability values exceeding 0.70. Additionally, rho_a and rho_c also demonstrate strong reliability, with rho_c values ranging from 0.871 (LOC) to 0.978 (INV), indicating that each construct is highly reliable and consistently measures its intended latent variable. Finally, all constructs display AVE values ranging from 0.712 (PV) to 0.922 (PU), indicating that a substantial portion of the variance in indicators is captured by the latent constructs.

Construct	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
TG	0.913	0.919	0.945	0.852
SN	0.898	0.913	0.936	0.83
PV	0.866	0.874	0.908	0.712
PU	0.916	0.916	0.96	0.922
LOC	0.716	0.809	0.871	0.772
INV	0.97	0.97	0.978	0.917
EI	0.835	0.945	0.894	0.737
CE	0.944	0.946	0.96	0.857

Table 75. Internal Consistency Indicators

Discriminant Validity

Discriminant validity tests assess whether reflective constructs demonstrate stronger relationships with the their own indicators as opposed to the indicators of other constructs in the model (Hair et al., 2017). The results of two discriminant validity tests are presented here, the Heterotrait-Monotrait Ratio (HTMT) criterion and the Fornell-Larcker criterion.

The Heterotrait-Monotrait Ratio (HTMT) analysis demonstrated values below 0.90 confirm discriminant validity between the constructs (Franke & Sarstedt, 2019). The correlation matrix indicates strong relationships between key constructs, with Civic Engagement (CE) and Intention to Vote (INV) showing the highest correlation (0.693).

Construct	CE	EI	INV	LOC	PU	PV	SN	TG	LOC x TG	LOC x SN	LOC x CE
TG											
SN	0.2										
PV	0.427	0.123									
PU	0.099	0.296	0.051								
LOC	0.157	0.358	0.056	0.104							
INV	0.693	0.393	0.306	0.108	0.384						
EI	0.419	0.074	0.561	0.053	0.13	0.176					
CE	0.362	0.154	0.354	0.267	0.073	0.11	0.585				
LOC x TG	0.016	0.141	0.119	0.101	0.019	0.089	0.092	0.129			
LOC x SN	0.075	0.053	0.016	0.19	0.057	0.035	0.213	0.095	0.423		
LOC x CE	0.16	0.023	0.011	0.058	0.037	0.171	0.073	0.023	0.341	0.399	

Table 76. Heterotrait-Monotrait Ratio (HTMT)

Furthermore, the Fornell-Larcker analysis confirms that all constructs demonstrate discriminant validity, ensuring that each construct is measuring a distinct concept. While some constructs exhibit moderate correlations, particularly CE-PV and SN-INV, these do not violate the discriminant validity threshold (Fornell & Larcker, 1981).

	CE	EI	INV	LOC	PU	PV	SN	TG
CE	0.926							
EI	0.188	0.858						
INV	0.41	0.124	0.957					
LOC	0.006	0.246	0.044	0.878				
PU	0.146	0.309	0.052	0.098	0.96			
PV	0.636	0.336	0.284	0.078	0.335	0.844		
SN	0.387	-0.057	0.529	0.001	-0.116	0.164	0.911	
TG	0.339	-0.121	0.336	-0.222	-0.066	0.104	0.531	0.923

Table 77. Fornell-Larcker Criterion

Hypotheses Testing

The next step is evaluating the dataset for evidence of support of the proposed hypotheses. PLS-SEM utilizes on a nonparametric bootstrap procedure (Efron & Tibshirani, 1986) to test the significance of the various path coefficients. The bootstrap process was set for 10,000 resamples, conducting a two-sided test at a significance level of 0.05.

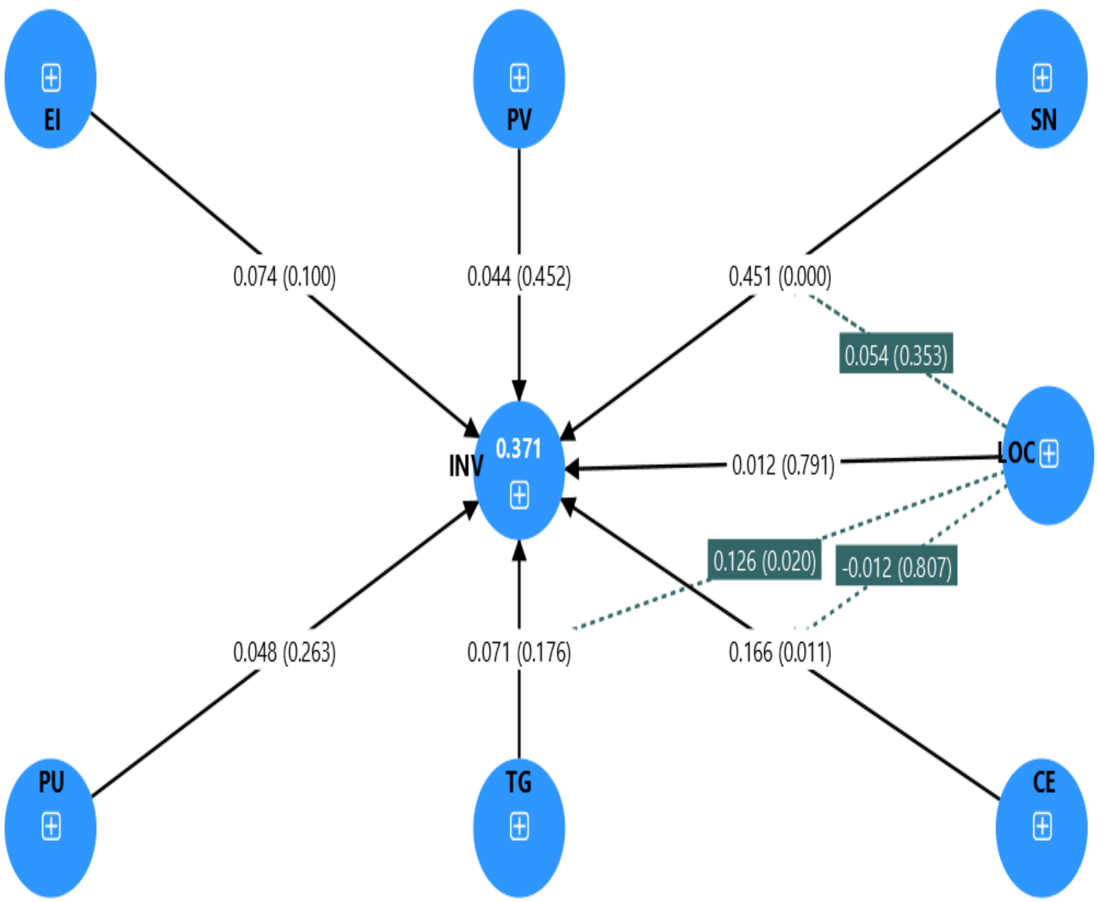


Figure 9. Hypotheses Testing

The below table 78 tabulates the results and the support of each hypothesis.

	Hypothesis	Significance (5% threshold, $p \leq 0.05$)	Outcome
H1	PV → INV	0.452	Not Supported
H2	SN → INV	**0.000**	**Supported**
H3	EI →INV	**0.100**	**Not Supported, trend observed**
H4	CE → INV	**0.011**	**Supported**
H5	TG → INV.	**0.176**	**Not Supported, trend observed**
H6	PU → INV	0.263	Not Supported
H7	LOC x CE →INV	0.807	Not Supported
H8	LOC x TG →INV	**0.020**	**Supported**
H9	LOC x SN →INV	0.353	Not Supported
H10	LOC →INV	0.791	Not Supported

Table 78. Hypotheses Testing Results

H1 predicted a positive relationship between Personal Values (PV) and intention to vote (INV) for Rural Broadband (RBB) taxation. However, the results indicate that this relationship is not statistically significant ($\beta = 0.044$, $p > 0.05$), and thus H1 is not supported. This suggests that individual value orientations-whether altruistic or egoistic-do not meaningfully influence intentions to support RBB taxation in this context.

H2 proposed that Social Norms (SN) positively influence the intention to vote for RBB taxation. The analysis supports this hypothesis, with a statistically significant path ($\beta = 0.451$, $p < 0.05$). This finding underscores the importance of social expectations: individuals are more likely to support broadband taxation when they perceive that others in their social environment also support such measures. Social conformity, therefore, emerges as a powerful motivator for public policy endorsement.

H3 hypothesized that Perceived Economic Inequality (EI) would positively impact voting intention. The results show a positive but non-significant relationship ($\beta = 0.074$, $p > 0.05$), meaning H3 is not supported. However, the observed trend suggests that individuals who perceive higher economic inequality may be somewhat more inclined to support RBB taxation. This potential relationship warrants further exploration, particularly in the following multigroup analyses that may uncover latent effects.

H4 postulated a positive relationship between Civic Engagement (CE) and voting intention for RBB taxation. This hypothesis is supported by the data ($\beta = 0.166$, $p < .05$), confirming that individuals who are more civically active-such as participating in community affairs or political discussions-are also more likely to endorse policies for public infrastructure investment. This reinforces the value of community participation in shaping favorable policy preferences.

H5 anticipated that higher Trust in Government (TG) would lead to greater intention to vote for RBB taxation. The analysis reveals a non-significant result ($\beta = 0.071$, $p > .05$), indicating that H5 is not supported. Although trust in governmental institutions may seem logically linked to policy support, it does not independently drive voting intentions in this model.

H6 predicted a positive relationship between the Perceived Usefulness (PU) of Broadband and intention to vote for taxation. The hypothesis is not supported by the findings ($\beta = 0.048$, $p > .05$), suggesting that individual perceptions of Broadband utility do not directly influence their willingness to support its public funding through taxation.

H7 examined whether Locus of Control (LOC) moderates the relationship between Civic Engagement (CE) and voting intention. The analysis finds no support for this moderating effect ($\beta = -0.012$, $p > .05$), indicating that the strength of civic engagement's influence on voting intention does not depend on whether individuals have an internal or external LOC.

H8 hypothesized that LOC moderates the relationship between Trust in Government (TG) and voting intention. This hypothesis is supported ($\beta = 0.126$, $p < .05$), meaning that individuals with a higher internal LOC, that is those who believe they control their own outcomes, are more likely to support RBB taxation if they also trust the government. This highlights an important psychological dimension, where personal agency enhances the influence of institutional trust.

H9 tested whether LOC moderates the relationship between Social Norms (SN) and voting intention. The results do not support this hypothesis ($\beta = 0.054$, $p > .05$). This indicates that the influence of social expectations on voting behavior is consistent, regardless of whether individuals feel in control of their outcomes or not.

H10 proposed a direct positive relationship between internal LOC and voting intention. The findings do not support this hypothesis ($\beta = 0.012$, $p > .05$), suggesting that an individual's belief in their own control over life outcomes does not directly affect their intention to support taxation for broadband infrastructure.

Multigroup Analysis (MGA)

Sarstedt and Ringle, (2010) consider assessing the implications of heterogeneity across groups as essential to the validity of Partial Least Squares Path Modeling (PLS-PM). Indeed, heterogeneity in the sample of this study-such as differences in area of habitation, socioeconomic status, and political views-may lead to varying responses to the constructs being investigated. Consequently, a set of permutations multigroup analyses (MGA) was conducted using the MICOM procedure and path coefficient comparison to investigate the presence of any structural relationships, or effects in the model that may differ significantly across groups (e.g. rural v. urban populations income levels, etc.) (Cheah et al., 2020). The MICOM procedure follows Henseler et al., (2016). The sample was segmented into multiple groups based on key demographic and sociopolitical characteristics. First, participants were categorized by area of habitation into three groups: rural, suburban, and urban. Political orientation was also considered, dividing respondents into conservative, liberal, and moderate groups. Educational attainment was classified into two levels: those with a high school diploma or associate's degree, and those holding a bachelor's degree or higher. Lastly, income was divided into three brackets: $20,000 to $49,999, $50,000 to $99,999, and $100,000 or higher.

Rural vs. Urban Area of Habitation Comparison

Compositional Invariance (MICOM Step 2)

Correlation equivalence was confirmed with permutation p-values ranging from 0.201 to 0.891, confirming strong structural consistency and indicating that the constructs are similarly operationalized across the two geographic groups.

	Original correlation	Correlation permutation mean	0.05	Permutation p value
CE	0.999	0.999	0.999	0.317
EI	0.933	0.851	0.32	0.491
INV	1.000	1.000	1.000	0.891
LOC	1.000	0.958	0.893	0.926
PU	0.995	0.932	0.595	0.577
PV	0.996	0.996	0.988	0.457
SN	1.000	1.000	0.999	0.615
TG	0.999	0.999	0.998	0.201

Table 79. Rural vs. Urban MICOM Step 2

Mean Differences (MICOM Step 3a)

The MICOM Step 3a (mean value comparison) results show no significant differences in construct means between rural and urban groups. All permutation p-values exceed 0.05, with values ranging from 0.115 (SN) to 0.886 (PU), indicating that any observed differences in means fall within the expected range under the null hypothesis of equality.

	Original difference	Permutation mean difference	0.025	0.975	Permutation p value
CE	0.051	-0.001	-0.235	0.26	0.699
EI	0.06	-0.003	-0.239	0.235	0.605
INV	0.07	0.002	-0.228	0.224	0.538
LOC	0.16	-0.002	-0.232	0.228	0.144
PU	-0.02	0.003	-0.231	0.25	0.886
PV	0.062	-0.002	-0.235	0.231	0.63
SN	0.195	0.005	-0.238	0.235	0.115
TG	0.02	0.005	-0.232	0.255	0.875

Table 80. Rural vs. Urban MICOM Step 3a

Variance Differences (MICOM Step 3b)

The MICOM Step 3b (variance comparison) results confirm that there are no significant differences in construct variances between rural and urban groups. All permutation p-values are well above the 0.05 threshold , ranging from 0.204 to 0.825, indicating that observed variance differences are not statistically significant. This supports the conclusion that construct variability is consistent across both groups, reinforcing the robustness of your multigroup comparison.

	Original difference	Permutation mean difference	0.025	0.975	Permutation p value
CE	-0.037	0.004	-0.348	0.345	0.825
EI	0.209	0.001	-0.391	0.419	0.327
INV	0.163	0.007	-0.252	0.254	0.204
LOC	0.062	0.001	-0.322	0.319	0.696
PU	0.26	0.006	-0.459	0.455	0.264
PV	0.151	0.007	-0.389	0.398	0.457
SN	-0.133	-0.004	-0.295	0.285	0.392
TG	0.034	0.007	-0.258	0.257	0.765

Table 81. Rural vs. Urban MICOM Step 3b

Path Coefficients

	Original (Area of habitation - Rural)	Original (Area of habitation - Urban)	Original difference	Permutation mean difference	2.50%	97.50%	Permutation p value
CE -> INV	0.041	0.092	-0.051	0.004	-0.374	0.377	0.762
EI -> INV	0.052	0.088	-0.035	0	-0.247	0.237	0.753
LOC -> INV	-0.125	0.117	-0.242	0.003	-0.231	0.243	0.039
LOC x CE -> INV	0.041	-0.001	0.041	0	-0.239	0.23	0.754
LOC x SN -> INV	-0.034	0.202	-0.237	-0.009	-0.287	0.247	0.073
LOC x TG -> INV	0.168	-0.084	0.252	0.007	-0.244	0.241	0.039
PU -> INV	-0.008	0.057	-0.065	0.001	-0.217	0.209	0.566
PV -> INV	0.181	0.14	0.042	-0.005	-0.327	0.315	0.785
SN -> INV	0.406	0.452	-0.046	-0.001	-0.238	0.244	0.723
TG -> INV	0.034	0.157	-0.123	-0.004	-0.261	0.264	0.382

Table 82. Rural vs. Urban Path Coefficients

Overall, the MICOM permutation multigroup analyses suggests the underlying measurement structure of the model is stable and valid s across the geographic groups contrasted.

The multigroup analysis reveals that area of habitation significantly moderates two key relationships in the model. First, the direct effect of Locus of Control (LOC) on voting intention (INV) differs between rural and urban respondents (p = 0.039), with LOC positively influencing INV in urban areas but negatively in rural ones. This suggests that internal control beliefs may enhance policy support in urban areas but potentially suppress it in rural settings. Second, the moderating effect of LOC on the relationship between Trust in Government (TG) and INV is also significant (p = 0.039), indicating that individuals with a strong internal LOC are more likely to translate governmental trust into voting support for RBB taxation in rural areas, while this interaction weakens or reverses in urban environments. This has important implications for designing targeted policy messaging and engagement strategies across diverse populations.

Rural vs. Suburban Area of Habitation Comparison

The MICOM analysis conducted to assess whether measurement invariance was established across groups based on rural vs. suburban are of habitation. In Step 2, compositional invariance was confirmed for all constructs except Civic Engagement (CE) and TG. Step 3a (equality of means) and 3b (equality of variances) showed that only TG and Personal Values (PV) exhibited significant differences in variance or means. In Step 3b (equality of variances) only TG and PV exhibited significant differences in variance or means. Overall, partial measurement invariance is still established allowing for meaningful multigroup comparisons for the majority of constructs. See Appendix C for detailed test statistics.

	Original (Area of habitation - Rural)	Original (Area of habitation - Suburban)	Original difference	Permutation mean difference	0.025	0.975	Permutation p value
CE -> INV	0.041	0.277	-0.236	0.005	-0.309	0.316	0.139
EI -> INV	0.052	0.106	-0.054	0	-0.214	0.224	0.599
LOC -> INV	-0.125	0.092	-0.217	-0.004	-0.234	0.229	0.071
LOC x CE -> INV	0.041	-0.122	0.162	0.002	-0.246	0.253	0.182
LOC x SN -> INV	-0.034	0.099	-0.134	-0.003	-0.257	0.282	0.354
LOC x TG -> INV	0.168	0.126	0.042	0.001	-0.239	0.225	0.744
PU -> INV	-0.008	0.066	-0.074	0	-0.226	0.212	0.508
PV -> INV	0.181	-0.077	0.259	-0.001	-0.291	0.268	0.071
SN -> INV	0.406	0.51	-0.104	-0.009	-0.249	0.238	0.41
TG -> INV	0.034	0.051	-0.016	0.007	-0.237	0.253	0.892

Table 83. Rural vs. Suburban Path Coefficients

The multigroup analysis of path coefficients across rural vs. suburban areas of habitation revealed no statistically significant differences. All permutation p-values exceeded the 0.05 threshold, and the confidence intervals for the path differences included zero, indicating that the structural relationships between constructs are consistent across the groups. As a result, rural vs. suburban area of habitation does not moderate any of the examined paths in the model. Notably, however, the direct effect of LOC on INV is close to significance (p=0.071) trending in line with the results of the Rural vs. Urban group analysis.

Urban vs. Suburban area of habitation comparison

The MICOM analysis results show that compositional invariance (Step 2) was established for all constructs, as all permutation p-values exceeded 0.05. In Step 3a, which tests for equality of composite means, three constructs, CE, Social Norms (SN), and TG showed significant differences ($p < 0.05$), indicating that their mean values differ across groups. In Step 3b, which examines equality of variances, only TG exhibited significant variance differences ($p = 0.004$). Based on these results, partial measurement invariance is confirmed, allowing for meaningful group comparisons on most constructs, while interpretations involving TG, CE, and SN should be approached with caution due to lack of full invariance. See Appendix C for detailed test statistics.

	Original (Area of habitation - Urban)	Original (Area of habitation - Suburban)	Original difference	Permutation mean difference	0.025	0.975	Permutation p value
CE -> INV	0.092	0.277	-0.185	0.001	-0.274	0.294	0.213
EI -> INV	0.088	0.106	-0.018	0.003	-0.234	0.237	0.848
LOC -> INV	0.117	0.092	0.025	-0.002	-0.193	0.202	0.782
LOC x CE -> INV	-0.001	-0.122	0.121	-0.002	-0.194	0.192	0.246
LOC x SN -> INV	0.202	0.099	0.103	0.003	-0.262	0.277	0.409
LOC x TG -> INV	-0.084	0.126	-0.21	0.003	-0.231	0.263	0.102
PU -> INV	0.057	0.066	-0.009	0	-0.192	0.191	0.93
PV -> INV	0.14	-0.077	0.217	0.002	-0.254	0.284	0.11
SN -> INV	0.452	0.51	-0.058	-0.003	-0.237	0.22	0.648
TG -> INV	0.157	0.051	0.107	0.001	-0.233	0.237	0.38

Table 84. Urban vs. Suburban Path Coefficients

The multigroup analysis comparing urban and suburban respondents revealed no statistically significant differences in path coefficients, as all permutation p-values exceeded the 0.05 threshold. This indicates that the relationships between the predictor variables and INV are consistent across these two groups. Consequently, area of habitation—specifically the urban versus suburban distinction—does not significantly moderate the structural paths in the model.

Conservative vs. Liberal political views comparison

The MICOM analysis conducted for comparing participants with conservative vs. liberal views indicates partial measurement invariance. In Step 2, compositional invariance was established for all constructs, as all permutation p-values were above 0.05, confirming that the constructs are similarly composed across groups. In Step 3a, several constructs showed significant differences in means—namely Perceived Economic Inequality (EI), CE, INV, LOC, and PV ($p < 0.05$)—suggesting that their average scores differ across groups. In Step 3b, only INV exhibited a significant difference in variances ($p = 0.015$), while all other constructs showed equivalent variances. Based on these results, partial invariance is established, which permits comparison of structural path relationships for most constructs, though caution is warranted when interpreting group differences involving INV. See Appendix C for detailed test statistics.

	Original (Political views - Conservative)	Original (Political views - Liberal)	Original difference	Permutation mean difference	2.50%	97.50%	Permutation p value
CE -> INV	0.161	0.103	0.058	-0.008	-0.285	0.279	0.701
EI -> INV	0.047	0.071	-0.024	-0.003	-0.242	0.198	0.823
LOC -> INV	0.077	-0.107	0.184	0.004	-0.203	0.209	0.076
LOC x CE -> INV	-0.099	0.074	-0.174	0.005	-0.218	0.219	0.122
LOC x SN -> INV	0.114	-0.051	0.164	0	-0.26	0.263	0.234
LOC x TG -> INV	0.089	0.088	0.002	-0.004	-0.223	0.212	0.992
PU -> INV	-0.054	0.106	-0.16	0.004	-0.198	0.21	0.13
PV -> INV	0.033	0.096	-0.063	0.005	-0.271	0.276	0.656
SN -> INV	0.621	0.353	0.268	0	-0.232	0.23	0.019
TG -> INV	0.126	0.012	0.113	0.001	-0.22	0.231	0.36

Table 85. Conservative vs. Liberal Path Coefficients

The multigroup analysis revealed that, overall, political orientation does not significantly moderate most structural relationships in the model. All but one path had permutation p-values above the 0.05 threshold, indicating no statistically significant differences. The only significant difference was found in the SN → INV path ($p = 0.019$), suggesting that social norms influence voting intention differently for conservatives versus liberals.

Conservative vs. Moderate political views comparison

The MICOM analysis for this comparison indicates that partial measurement invariance is present. In Step 2, compositional invariance was established for all constructs except SN and TG, both of which showed significant p-values ($p < 0.05$), suggesting their composite scores differ across groups. In Step 3a, testing for equality of means, none of the constructs showed statistically significant differences (all $p > 0.05$), though INV was marginal ($p = 0.063$). In Step 3b, equality of variances was generally supported, except for SN, which again showed significant differences (p = 0.020), indicating non-invariant variance across groups. Overall, while most constructs meet the criteria for comparison, the results advise caution when interpreting group differences involving SN and to a lesser extent TG, due to a lack of full measurement invariance. See Appendix C for detailed test statistics.

The multigroup analysis comparing conservatives and moderates shows that none of the structural path differences are statistically significant, as all permutation p-values exceed the 0.05 threshold. This suggests that political orientation, in this case, does not significantly moderate the effects of the predictor variables on INV. As such, the structural relationships in the model can be considered stable between conservative and moderate respondents, and no evidence of moderation by political ideology is present in conservative vs. moderate comparison.

	Original (Political views - Conservative)	Original (Political views - Moderate)	Original difference	Permutation mean difference	2.50%	97.50%	Permutation p value
CE -> INV	0.161	0.018	0.143	0.001	-0.311	0.318	0.354
EI -> INV	0.047	0.004	0.042	0.005	-0.212	0.208	0.716
LOC -> INV	0.077	0.065	0.012	0.014	-0.262	0.263	0.936
LOC x CE -> INV	-0.099	0.009	-0.108	-0.001	-0.282	0.281	0.494
LOC x SN -> INV	0.114	0.108	0.006	0	-0.331	0.305	0.976
LOC x TG -> INV	0.089	0.178	-0.089	-0.003	-0.312	0.282	0.595
PU -> INV	-0.054	0.123	-0.178	-0.001	-0.206	0.205	0.09
PV -> INV	0.033	0.107	-0.074	-0.001	-0.292	0.27	0.611
SN -> INV	0.621	0.476	0.145	0.003	-0.259	0.274	0.298
TG -> INV	0.126	-0.014	0.14	-0.001	-0.315	0.303	0.38

Table 86. Conservative vs. Moderate Path Coefficients

Liberal vs. Moderate political views comparison

The MICOM analysis for this group comparison demonstrates partial measurement invariance. In Step 2, all constructs met the criteria for compositional invariance, as all permutation p-values were above the 0.05 threshold, confirming structural equivalence across groups. In Step 3a, significant differences in composite means were observed for EI, INV, PV, and Perceived Usefulness (PU) ($p < 0.05$), indicating that the average scores for these constructs vary meaningfully between the groups. However, Step 3b showed no significant differences in composite variances for any construct (all $p > 0.05$), suggesting equal variability across groups. Therefore, comparisons of path relationships are justifiable for most constructs, but group differences in mean levels of EI, INV, PU, and PV should be interpreted with caution, as full measurement invariance is not established for these variables. See Appendix C for detailed test statistics.

	Original (Political views - Liberal)	Original (Political views - Moderate)	Original difference	Permutation mean difference	2.50%	97.50%	Permutation p value
CE -> INV	0.103	0.018	0.085	-0.003	-0.345	0.347	0.63
EI -> INV	0.071	0.004	0.066	0.005	-0.236	0.287	0.608
LOC -> INV	-0.107	0.065	-0.172	0.002	-0.279	0.271	0.292
LOC x CE -> INV	0.074	0.009	0.065	-0.014	-0.268	0.215	0.586
LOC x SN -> INV	-0.051	0.108	-0.159	-0.001	-0.32	0.3	0.345
LOC x TG -> INV	0.088	0.178	-0.091	-0.011	-0.29	0.282	0.539
PU -> INV	0.106	0.123	-0.018	-0.005	-0.253	0.261	0.897
PV -> INV	0.096	0.107	-0.011	-0.008	-0.338	0.281	0.949
SN -> INV	0.353	0.476	-0.122	-0.006	-0.263	0.266	0.399
TG -> INV	0.012	-0.014	0.027	0.007	-0.265	0.285	0.839

Table 87. Liberal vs. Moderate Path Coefficients

The multigroup analysis comparing liberals and moderates reveals that none of the path coefficient differences are statistically significant, as all permutation p-values are well above the 0.05 threshold, suggesting no evidence of moderation by political ideology is present in liberal vs. moderate comparison.

Education level up to Associates degree vs. Bachelors and above comparison

The MICOM analysis for this comparison confirms that full measurement invariance is established across groups. In Step 2, all constructs met the criteria for compositional invariance, with permutation p-values well above 0.05, indicating that the constructs are similarly formed across groups. In Step 3a, which tests for equality of means, none of the constructs showed statistically significant mean differences, as all p-values exceeded the 0.05 threshold. Similarly, in Step 3b, no significant differences in composite variances were found, with all permutation p-values above 0.05. These results confirm that the measurement model is invariant across groups. See Appendix C for detailed test statistics.

	Original (Education - High school to Associate's degree)	Original (Education - Bachellor's degree or higher)	Original difference	Permutation mean difference	2.50%	97.50%	Permutation p value
CE -> INV	0.17	0.126	0.044	-0.006	-0.253	0.255	0.764
EI -> INV	0.082	0.121	-0.039	0	-0.188	0.178	0.66
LOC -> INV	-0.012	0.002	-0.014	0.003	-0.164	0.162	0.858
LOC x CE -> INV	-0.04	-0.021	-0.019	0.004	-0.181	0.183	0.814
LOC x SN -> INV	-0.047	0.117	-0.164	-0.003	-0.223	0.232	0.158
LOC x TG -> INV	0.133	0.117	0.015	-0.002	-0.203	0.201	0.887
PU -> INV	0.083	0.001	0.082	-0.004	-0.182	0.171	0.344
PV -> INV	0.011	0.094	-0.084	0.005	-0.231	0.229	0.475
SN -> INV	0.369	0.512	-0.142	-0.001	-0.19	0.187	0.149
TG -> INV	0.114	0.046	0.068	0.007	-0.204	0.223	0.523

Table 88. Up to Associates degree vs. Bachelors and Above Path Coefficients

The multigroup analysis comparing education levels, that is participants with a high school diploma or associate's degree versus those with a bachelor's degree or higher, reveals that none of the path coefficient differences are statistically significant, as all permutation p-values are above the 0.05 threshold. Overall, education level does not significantly moderate the structural relationships in the model.

Lower income bracket vs. Upper Income bracket comparison

The MICOM analysis comparing these income groups confirms partial measurement invariance. In Step 2, compositional invariance was established for all constructs, as all permutation p-values are above the 0.05 threshold. In Step 3a (equality of means), three constructs, CE, EI, and TG, showed statistically significant mean differences across income groups (p = 0.027, 0.006, and 0.006, respectively), suggesting that these constructs are perceived differently depending on income level. In Step 3b (equality of variances), all constructs demonstrated invariance except for PV, which showed a significant difference in variance (p = 0.009). See Appendix C for detailed test statistics.

	Original (Income - $20,000 - $49,999)	Original (Income - $100,000+)	Original difference	Permutation mean difference	2.50%	97.50%	Permutation p value
CE -> INV	0.264	0.328	-0.064	0.016	-0.302	0.297	0.686
EI -> INV	0.018	0.085	-0.067	0.006	-0.218	0.253	0.568
LOC -> INV	0.073	0.061	0.012	0	-0.211	0.221	0.919
LOC x CE -> INV	0.031	-0.066	0.096	-0.002	-0.215	0.219	0.403
LOC x SN -> INV	-0.004	0.119	-0.123	0.006	-0.258	0.263	0.372
LOC x TG -> INV	0.183	0.043	0.14	-0.003	-0.248	0.259	0.311
PU -> INV	0.156	-0.046	0.202	0.001	-0.229	0.24	0.1
PV -> INV	-0.071	0.001	-0.072	-0.011	-0.314	0.293	0.659
SN -> INV	0.401	0.442	-0.041	0.002	-0.236	0.239	0.733
TG -> INV	0.152	0.025	0.126	-0.005	-0.256	0.254	0.345

Table 89. Lower vs High Income Path Coefficients

The multigroup analysis comparing the low-income group ($20,000–$49,999) to the high-income group ($100,000 or more) reveals that none of the path differences are statistically significant, as all permutation p-values are above 0.05.

Lower income bracket vs. Middle Income bracket comparison

The MICOM analysis indicates that partial measurement invariance is established across education groups. In Step 3a (equality of means), only EI showed a significant mean difference between groups (p = 0.036). However, all other constructs showed no significant differences in means (p > 0.05). In Step 3b (equality of variances), all constructs-including EI-had non-significant p-values (p > 0.05), indicating no differences in composite variances. Since Step 2 (compositional invariance) is assumed to have been previously established (though not shown here), the presence of only one significant mean difference supports partial invariance, allowing for multigroup comparisons of path coefficients. See Appendix C for detailed test statistics.

	Original (Income - $20,000 - $49,999)	Original (Income - $50,000 to $99,999)	Original difference	Permutation mean difference	2.50%	97.50%	Permutation p value
CE -> INV	0.264	-0.017	0.281	0.006	-0.306	0.299	0.068
EI -> INV	0.018	0.089	-0.071	-0.002	-0.198	0.212	0.454
LOC -> INV	0.073	-0.044	0.116	0.008	-0.21	0.216	0.262
LOC x CE -> INV	0.031	-0.004	0.035	-0.01	-0.226	0.218	0.815
LOC x SN -> INV	-0.004	0.093	-0.096	0.008	-0.252	0.257	0.49
LOC x TG -> INV	0.183	0.171	0.012	0.01	-0.24	0.235	0.917
PU -> INV	0.156	0.037	0.119	0.002	-0.2	0.204	0.262
PV -> INV	-0.071	0.18	-0.251	-0.009	-0.279	0.291	0.081
SN -> INV	0.401	0.527	-0.126	0	-0.229	0.228	0.289
TG -> INV	0.152	0.052	0.1	0.002	-0.23	0.225	0.392

Table 90. Lower vs. Middle Income Path Coefficients

The MGA for this comparison shows that none of the differences in path coefficients are statistically significant, as all permutation p-values are above the 0.05 threshold. While some differences, such as CE → INV (p = 0.068) and PV → INV (p = 0.081), approach significance, they remain outside the conventional range for statistical reliability.

Upper income bracket vs. Middle Income bracket comparison

The MICOM analysis for this income group comparison confirms partial measurement invariance. In Step 2, compositional invariance was established for all constructs, as all permutation p-values exceeded 0.05. In Step 3a (equality of means), only TG showed a significant mean difference (p = 0.042). In Step 3b (equality of variances), all constructs demonstrated invariant variance (all p-values > 0.05). See Appendix C for detailed test statistics.

	Original (Income - $100,000+)	Original (Income - $50,000 to $99,999)	Original difference	Permutation mean difference	2.50%	97.50%	Permutation p value
CE -> INV	0.328	-0.017	0.346	-0.009	-0.368	0.336	0.054
EI -> INV	0.085	0.089	-0.004	0.007	-0.251	0.238	0.972
LOC -> INV	0.061	-0.044	0.105	0.004	-0.221	0.24	0.375
LOC x CE -> INV	-0.066	-0.004	-0.062	0	-0.25	0.255	0.639
LOC x SN -> INV	0.119	0.093	0.027	-0.001	-0.301	0.321	0.883
LOC x TG -> INV	0.043	0.171	-0.128	0	-0.248	0.259	0.32
PU -> INV	-0.046	0.037	-0.084	-0.003	-0.238	0.216	0.482
PV -> INV	0.001	0.18	-0.179	0.006	-0.293	0.286	0.256
SN -> INV	0.442	0.527	-0.085	-0.004	-0.264	0.265	0.552
TG -> INV	0.025	0.052	-0.027	0	-0.27	0.279	0.855

Table 91. Higher vs. Middle Income Path Coefficients

The multigroup analysis comparing the high-income group with the middle-income group reveals that none of the path coefficient differences are statistically significant, as all permutation p-values exceed the 0.05 threshold. Overall, these findings suggest that income level does not significantly moderate the structural relationships in the model.

Group Comparison	Measurement Invariance Status	Significant Path Differences?
Rural vs. Urban	Full	Yes (LOC→INV, LOCxTG→INV)
Rural vs. Suburban	Partial	No
Urban vs. Suburban	Partial	No
Conservative vs. Liberal	Partial	Yes (SN → INV)
Conservative vs. Moderate	Full	No
Liberal vs. Moderate	Full	No
Lower vs. Higher Education	Partial	No
Low vs. Middle Income	Partial	No
Middle vs. High Income	Partial	No
Low vs. High Income	Partial	No

Table 92. Summary of MGA Results

6. DISCUSSION

Summary of Findings

The aim of this study was to investigate the psychological, social, and structural drivers of public support for hypothecated taxation for Broadband infrastructure investment, particularly as it is informed with regard to where people live - and therefore perceive - such infrastructure investment as beneficial, or not. Two core research questions guided the inquiry: what factors contribute to the acceptance of such taxation, and which persuasive messaging routes are most effective. Within this framework, the analysis revealed important insights into the role of Social Norms (SN), Civic Engagement (CE), and Locus of Control (LOC) in influencing intention to support taxation-based investment in public infrastructure. In particular, the findings offer strong evidence for the idea that SN and CE are key predictors of support for taxation initiatives aimed to improving infrastructure which benefits the greater public.

It is unsurprising that Social Norms emerged as a salient factor in shaping public policy preferences. The respondents appear more inclined to endorse Broadband-related taxation proposals when they believe that such support is socially approved or expected by their peers or community. This outcome aligns with core assumptions of the Theory of Planned Behavior (Ajzen, Icek, 1991), which posits that subjective norms - that is individuals' perceptions of whether important others approve of a given behavior - are a key predictor of behavioral intention. Hence, the perception that others support taxation for Broadband infrastructure has a strong positive effect on individual support. This is further in line with previous research on conditional cooperation, wherein individuals are more willing to act for the collective good when they believe others will do the same

(Andre et al., 2024b; Fischbacher et al., 2001). Cognitive Dissonance Theory (CDT) (Festinger, 1957) provides another lens to explain the impact of SN on forming support for rural Broadband funding. In the context of CDT, the perception that community members support, or not, taxation for Broadband infrastructure may create a motivational pressure to align personal attitudes with the perceived group norms, particularly when divergence would result in cognitive dissonance, meaning experiencing psychological discomfort when attitudes or behaviors of the individual are misaligned with the expectations the social group. Notably, the multigroup analysis revealed a significant difference in the effect of SN on voting intention as it relates to political orientation, with conservatives and liberals diverging in support for Broadband infrastructure investment taxation initiatives. Specifically, conservatives demonstrate a stronger reliance on SN in forming attitudes toward Broadband (RBB) taxation. This may reflect the tendency of conservatives to respond more strongly to ingroup expectations and traditional community norms, particularly when those norms are clearly defined or socially reinforced (Cakanlar & White, 2023). This finding also supports research in political psychology, which suggests that norm conformity among conservatives is especially pronounced when the normative cues align with perceived moral order or group loyalty (Graham et al., 2009; Turner-Zwinkels et al., 2021). So-called foundational morals are more densely connected among conservatives resulting in higher normative group cohesion than liberals (Janoff-Bulman & Carnes, 2016). Notwithstanding the alignment with related research, the SN→INV interaction group comparison findings here should the considered indicative rather that conclusive as only partial invariance was established in the MICON analysis.

Individuals with higher levels of Civic Engagement were more likely to vote for Broadband taxation proposals aimed at advancing the general public good. Specifically, respondents who demonstrated active participation in civic life, such as volunteering for local organizations, contributing to community service initiatives, or engaging in informed political discourse were shown to be more inclined to support investment policies aimed at advancing the common good, such as raising funding for RBB infrastructure. This finding is consistent with theories of participatory democracy and prosocial political behavior, which argue that individuals who are more actively involved in civic processes tend to have a stronger sense of collective responsibility and efficacy (Dolan, 2022; Owens, 2023; Wray-Lake, 2023).

While Trust in Government (TG) did not emerge as a significant independent predictor of intention to support Broadband taxation, its interaction with Locus of Control (LOC) was statistically significant. Specifically, those with trust in government were more likely to support Broadband taxation initiatives when they also had an internal LOC. This increase in predictive strength of TG when modeled in combination with other LOC - though it never reaches full statistical significance – likely suggests a context-dependent effect, a nuanced relationship in which the perception of personal agency amplifies the influence of institutional trust. For individuals with internal LOC, the belief that their actions are impactful enhances their confidence in the competence and integrity of the state institutions. This finding reinforces existing theories of internal efficacy, expanding their relevance into the domain of public infrastructure policy (Gil De Zúñiga et al., 2017; Reichert, 2016) and suggests that trust in institutions can unlock prosocial potential intentions. Further multigroup analysis found variations in the impact on INV by the interaction between TG and LOC when the participants were examined grouped by area of habitation (rural vs. urban). In rural areas, individuals who trust the government and have high internal LOC were more likely to support public investment. This moderation effect diminished in urban areas, possibly because urban residents are habituated to engaging with public systems and thus may perceive government interventions as a routine part of civic life. Hence, trust in the state alone may be sufficient to drive voting support without needing to be enable by LOC.

In contrast, the direct effect of LOC on intention to vote for RBB taxation was not significant in the model, suggesting that general beliefs about personal agency do not translate into direct support for public infrastructure taxation funding without contextual factors like trust in the institutions, or being civically minded. This was an unexpected result, as one might suppose that individuals who believe in their ability to control outcomes would be more likely to support policies perceived as shaping the socioeconomic landscape, such as investments in digital infrastructure. However, further investigation in the multigroup analysis where the respondents were examined as separate groups living in rural, urban, and suburban areas did reveal variations in the effect of the LOC on INV as it was positive in urban areas and negative in rural ones, suggesting that internal LOC beliefs do encourage support for public investment initiatives in urban areas but may have the opposite effect in rural areas. Although the comparison between rural and suburban respondents had no significant structural path differences, the LOC → INV path did approach statistical significance here too, aligning with the rural-urban findings and suggesting a potentially meaningful trend.

One possible interpretation of this finding is that internal LOC may overall be more impactful in personal outcomes (e.g., career, education, or health behavior) than in collective decisions such as public funding policy where the link between individual agency and policy outcomes may feel weak, ineffective, and abstract. In other words, voting for a tax to improve community infrastructure may not be perceived as a domain where one's personal control is highly relevant, even by those with high internal LOC. However, in urban settings individuals with a strong internal LOC, believing that they can influence outcomes through their own actions, may perceive public investment initiatives (e.g., infrastructure or taxation for public goods) as opportunities for civic participation and collective advancement. Urban residents are often more directly exposed to the benefits of public investment (e.g., transportation systems, digital infrastructure, social services), which may reinforce the belief that personal engagement, including voting, can yield tangible improvements in community well-being. On the other hand, rural residents may view government initiatives with more skepticism, possibly due to perceived chronic neglect, underinvestment in their communities, or perceived misalignment of grand government projects with local needs. For these individuals, a strong internal LOC might translate into a preference for self-reliance and local solutions, rather than support for centralized, top-down interventions. In this context, belief in personal agency could diminish the perceived value or effectiveness of public investment, leading to reduced voting intention for such initiatives. When considered with the findings of the interaction between LOC and TG in rural areas discussed earlier and interesting realization emerges: *without trust*, a strong LOC may foster disengagement or opposition of public infrastructure initiatives in rural areas; however, *with trust,* it could enable constructive civic action.

Furthermore, the analysis shows that LOC has no moderating effect on SN. This result implies that social conformity pressures may operate relatively independently of individuals' sense of personal agency. Social norms exert a robust, direct influence on behavioral intention, unaffected by individual differences in perceived control. This lack of LOC moderation on SN, contrasts with extant research that posits that strong LOC can buffer the effect of environmental cues (Jonsson & Nilson, 2014). One possible interpretation is that social norms related to public policy support have strong situational influence, capable of shaping behavior across different personality profiles. Alternatively, it may be that voting behavior, especially on issues framed as benefiting the general public, is more socially than personally driven, thus minimizing the moderating role of LOC in such contexts.

Additionally, the moderating effect of LOC on the relationship between CE and voting intention was not supported, indicating that civic-minded individuals are likely to support taxation regardless of how much control they believe they have over outcomes. It appears that civic engagement may itself be a sufficient catalyst for intention to support public infrastructure initiatives, as it incorporates elements of social identity, social responsibility, and community belonging that may transcend individuals' differences in perception of control. This refines findings by Lim and Moon, (2020) who observed that political participation (as a proxy for internal LOC) amplified pro-environmental behaviors in response to perceived threats. However, in the context of the current study, individuals display similar behavioral conclusions and form behaviors as a result of their civic experiences even though they have varying levels of LOC. Hence, CE may serve as a unifying force that promotes public support beyond individual psychological dispositions, suggesting that CE itself already embeds empowerment, through an enhanced sense of social belonging, civic identity, and moral duty.

The absence of a significant effect of Personal Values (PV) on INV is somewhat surprising given that personal values are often cited as stable predictors of moral and political attitudes, including willingness to support redistributive or socially beneficial policies (Primc et al., 2021; Schwartz, 1992). Individuals with stronger altruistic or universalist values are thought to be generally more likely to endorse policies that promote collective welfare, reduce inequality, or address societal needs. Thus, it was reasonable to expect that such value orientations would positively relate to support for public investments like rural Broadband expansion. One possible explanation for this finding lies in the perceived psychological distance between value-based ideals and concrete policy proposals like taxation. Individuals may endorse broad social values but disconnect those values from specific fiscal mechanisms or public funding initiatives - especially when taxation is involved, which can evoke economic concerns, skepticism, or ideological resistance that override value alignment.

Perception of Economic Inequality(EI) approached, but did not reach the threshold for statistical significance. However, the direction of the relationship is consistent with theoretical expectations: individuals who perceive higher levels of economic inequality may be modestly more likely to support redistributive public policies such as broadband infrastructure funded through taxation. The lack of statistical significance, however, implies that EI does not exert a strong direct effect on voting intention in this context. It is possible that individuals may cognitively separate abstract concerns about inequality from specific taxation measures, especially when such measures involve personal costs. This finding is conceptually aligned with prior research suggesting that perceptions broader economic inequality do not necessarily result in a push for more redistribution (García-Sánchez et al., 2018; Iacono & Ranaldi, 2019).

The failure to discover a significant relationship between Perceived Usefulness (PU) and an intention to support taxation for Broadband investment contrasts with expectations derived from the Technology Acceptance Model (TAM), which posits that perceived usefulness is a primary determinant of behavioral intention in the adoption of new technologies. While TAM has proven robust in predicting individual-level usage decisions (e.g., using Broadband at home, or adopting digital services), its influence appears to weaken in the context of broader, collective political decisions like voting for tax-funded infrastructure. Individuals may recognize Broadband's usefulness, but they may not see taxation as the appropriate or necessary means to fund its expansion – it is perhaps perceived not to be a public good worth subsidizing for others. As a standalone predictor, lacking a sense of shared benefit or collective need, perceived usefulness may not evoke the prosocial motivation required to support Broadband infrastructure investment.

Although the findings show that social cues (like social norms) and societal drivers (like civic engagement) outweigh individual level traits (like personal values and locus of control), they also suggest that matching message framing to psychological predispositions amplifies message effectiveness. Hence the research underscores the need for tailored, multi-channel communication strategies that resonate across varying psychological and socioeconomic profiles.

Practical Implications

The relatively strong coefficient of the interaction between social norms and intention to support taxation for rural Broadband ($\beta = 0.451$), underscores the substantial influence in this area exerted by social conformity. From a practical standpoint, this result implies that leveraging social proof may provide the more persuasive framing to encourage policy support. Policymakers and advocates should pay close attention to social dynamics and group identity cues when designing outreach strategies. Efforts to mobilize support may benefit from engaging influential community members or opinion leaders who can signal that support for rural Broadband investment is both socially normative and beneficial to the community. Effective strategies could include communication campaigns emphasizing widespread community support for rural Broadband funding through visible endorsements, testimonials, or norm-reinforcing messaging could be effective in building public backing for RBB infrastructure initiatives. The varying levels of support between conservatives and liberal and rural and urban residents also suggest that identity signaling which reinforces group membership – especially in polarized contexts - is also an effective means of forming behavior (Cakanlar & White, 2023) (i.e. identifying policy endorsement with a political group, or as appropriate for a community with a distinct character). Taxation proposals for grand, aspirational projects is the sort of thing for which support, or resistance can pivot on who one believes that he is and who he believes he is not.

Behavioral intentions are strong predictors of actual behavior (Ajzen, 2012), although they do not always translate into action. Research suggests that while there is a notable correlation between behavioral intentions and actual behavior, this relationship is influenced by various factors, including intention strength, personality traits, perceived behavioral control, and contextual elements, creating what is known as the "intention-behavior gap" (Conner & Norman, 2022; Faries, 2016; Fishbein & Ajzen, 1981). Against this backdrop, civic engagement and participation can provide an effective means of bridging the intention-behavior gap. Civic engagement often cultivates a broader view of the public good, encouraging people to support initiatives that may not benefit them directly but contribute to community-wide well-being. Engaged citizens may be more likely to understand the inequalities created by the existence of the digital divide as well as the broader economic and social benefits of Broadband access and to view public infrastructure investment as a legitimate and necessary tool for promoting long-term development, especially in rural areas. From a policy and advocacy standpoint, this result underscores the importance of cultivating civic participation as a pathway to increased public support for large-scale infrastructure initiatives. Efforts to mobilize voters around RBB funding could benefit from partnering with civic organizations, community groups, and educational institutions, all of which play a critical role in encouraging engagement and disseminating information.

While civic engagement plays an important role in shaping voting behavior, political orientation conditions the influence of social norms on attitudes toward policy. These two forces appear to operate largely in parallel rather than interactively. Social norms are powerful drivers of behavioral intention and, as we saw, their effects are not contingent on internal control beliefs. The findings of this research upend some conventional expectations by showing that conservatives, not liberals, exhibit a stronger normative influence when it comes to supporting public infrastructure taxation. This suggests that norms tied to community identity and social responsibility can be powerful motivators for conservative individuals, particularly when they perceive the initiative as aligned with shared values (e.g., stability, self-reliance through infrastructure investment).

LOC, on the other hand, exerts its influence through more complex interactions—particularly with trust in government in a rural setting, highlighting the importance of both ideological and situational framing in public policy engagement strategies. The observed geographic differences in how LOC influences voting intention suggest that context shapes how personal agency translates into prosocial behavior. In urban settings, internal LOC appears to motivate support for public investment, likely due to the perceived alignment between personal action and collective benefit. In rural areas, the same internal belief system may lead to skepticism or disengagement, *unless* accompanied by high trust in government. These findings underscore the need for context-sensitive policy communication strategies that acknowledge how personal beliefs interact with place-based experiences and perceptions of government reliability.

When we consider these results within the Elaboration Likelihood Model (ELM) framework, we can gain a richer understanding of how different individuals form their intentions to support rural Broadband voting. Usually, the ELM has been used to explain persuasion in experimental or small-scale settings, as the complexity of contextual and individual variables, as well as, the dynamic presence of mediating variables bring its explanatory power on persuasion in question (J. Kitchen et al., 2014; Moradi & Zihagh, 2022). Indeed, one of its main critiques is that it is difficult to test and falsify (Cook et al., 2004). However, if used as a descriptive rather than an explanatory model the two ELM channels of persuasion can provide a policy maker with a heuristic framework describing who responds to what kind of message, allowing for segmentation and tailoring of messaging strategies across demographic and psychological lines. Jung's concept of synchronicity, understood as the meaningful coincidence of internal experiences and external events without a causal link, offers a compelling lens for grasping how such messaging is internalized, reinforced, or disrupted. Messaging that coincides with a moment or personal relevance can feel "synchronistic" to the recipient, not just because it is persuasive, but because it coheres with pre-existing social patterns or archetypal structures embedded within the culture. This symbolic alignment can enhance the perceived authenticity and impact of the message, especially when it taps into collective anxieties, hopes, or moral values (Jung, 1973). Recent technological advances around big data and AI seem to be opening powerful new possibilities to dynamically operationalize the ELM at a large, population-level scale. AI systems can model (from available big data sources) predictions of how voters engage with issues. Advancements in machine learning and in particular in natural language processing (NLP) and behavioral analytics make it possible to infer psychological traits from digital traces - social media posts, survey responses, or interaction patterns – and dynamically reframe content to match voters' cognitive processes. Expanding in the domain of commercial enterprises and marketing in particular, one can imagine an AI system that uses the ELM framework and core parameters - such as SN, LOC, PV, PU, and others - in a persuasion "engine" of sorts that can predict whether someone is likely to process centrally, or peripherally by analyzing available data, pivoting on signs of shifting LOC to adjust messaging to achieve maximum resonance.

Needless to say, a plethora of ethical issues emerge as the possibilities of manipulative or unethical psychological targeting immediately rise to the forefront. There are moral imperatives to consider when leveraging potentially powerful tools of persuasion and communication, particularly when influencing civic issues. In perfect world, messaging aligned with utilitarian logic of support cooperation and collective responsibility reinforces behaviors that contribute to public well-being and also have a qualitative impact on democratic participation, institutional legitimacy, and public trust (Mill, 1863; Mill & Sher, 2001). By framing infrastructure initiatives in terms of net societal gain, and appealing to shared values around fairness and prosperity, utilitarian-informed messaging can advance public support while ethically aligning with outcomes that enhance the common good. Ethical public communication should be transparent, inclusive, and grounded in what is truth and factual, serving as a vehicle for informed deliberation and the pursuit of societal well-being. Unethical practices can lead to long-term damage to public trust, deepen civic disengagement, and undermine the credibility of public institutions. Practitioners must ensure that ethical guardrails are in place to guarantee that the ethical dimensions of the fundamental tenant of public trust and integrity are preserved.

The following table provides a structured outline of how routes of persuasion and messaging strategies can be tailored to different audiences based on insights drawn from this research. Policy makers can use this framework to inform more effective communication strategies for public engagement and support for infrastructure policy like rural Broadband expansion. Central and peripheral route strategies are shown along the lines of geographical segmentation (rural and urban) while incorporating the physiological traits examined in the study and matching content, tone, and communication channel to the recipients' processing disposition, values, and level of institutional trust. This table can serve as a practical tool to engage diverse populations with tailored messaging that considers individual agency and community dynamics in many contexts.

Setting	Central Route	Peripheral Route
Urban	**Target Profile**:	**Target Profile**:
	High civic engagement	Low issue engagement
	Policy-focused voters	Media-overloaded individuals
	Psych Traits:	**Psych Traits**:
	High cognition & poitical knowledge	Reliant on social proof
	Internal personal efficacy	Trusts peer influence
	Key Drivers: CE, LOC	**Key Drivers**: SN, TG, LOC
	Messaging:	**Messaging**:
	Data-driven narratives with civic responsibility	"People like you support this"
	Formats & Channels:	**Formats & Channels**:
	Infographics, blogs, dashboards	Social media reels
	Websites, civic orgs, webinars	Local influencers, neighborhood groups
	Flyers at community groups	SMS, Facebook local pages
Rural	**Target Profile**:	**Target Profile**:
	Strong LOC when TG is high	Passive LOC
	Engaged via community involvement	Trusts local over gov't
		High conformity when aligned with community
	Psych Traits:	**Psych Traits**:
	High value on self-reliance	Follows ingroup cues
	Skeptical of central gov't	Norm-driven if locally framed
	Key Drivers: LOC×TG, CE	**Key Drivers**: SN, TG
	Messaging:	**Messaging**:
	"Your voice matters locally"	"Our county backs Broadband"
	"Bring telehealth services, education equality, and economic opportunities to our community"	Gov't support cues like specific branding (e.g. "connectivity broughtto you by your RBB grant"
	Show tangible, local benefits	Use respected community voices and storytelling
	Formats & Channels:	**Formats & Channels**:
	Town hall Q&As	Peer testimonials
	Local ag extension groups, radio	Religious groups, FM radio

Table 93. Elaboration Likelihood Model Routes and Strategies

Theoretical Implications

The emerging insights from this research invite deeper reflection on how message framing and targeted outreach to elicit support and induce persuasion should be structured. The findings suggest for individuals with internal LOC, communications should emphasize how their individual actions and contributions directly shape outcomes, particularly when they can trust the institutional environment, or when such actions align with their group identity - the role of personal agency has been identified before as a factor influencing differences between conservatives and liberals (Cakanlar et al., 2022). For others, normative cues may be more effective motivators.

These findings reinforce the theoretical value of integrating Locus of Control into the Elaboration Likelihood Model (ELM), as they illustrate how psychological predispositions interact with message context to influence persuasion route activation, offering a promising theoretical and practical lens for modern persuasive communication. Doing so would help to alleviate the ELM continuum issues that rise with the idea that persuasion does not occur through either a purely central or purely peripheral route, but rather along a spectrum (or continuum) of cognitive engagement (J. Kitchen et al., 2014; Petty et al., 2005). LOC can provide a way to anchor attitudes and tendencies on personal beliefs and agency. By framing messaging on perceived control orientation, researchers and practitioners could obtain valuable insights on who is likely to process peripherally or centrally and when and why they might shift. This enhances the versatility of the ELM and invigorates its utility in an increasingly complex societal and informational environment with ever evolving technological capabilities, media environments and nuanced digital messaging.

Research Limitations

The use of the Cloud Research platform for data collection raises concerns regarding the representativeness of the sample which limits the external validity of the findings of this research. On the same vein, the results could potentially be compromised by the frequency of participation in research studies that the workers of the platform participate in, which makes them familiar with research protocols. This non-naïveté may influence participant responses to surveys, reducing their engagement and introducing bias (Krantz & Reips, 2017; Porter et al., 2019).

Another potential limitation affecting external validity is the need to account for localized community identity factors, cultural or contextual that may play a role in shaping attitudes toward taxation. Prior research suggests that local norms, histories of governance, and shared economic challenges can significantly influence how taxation is perceived and justified (Torgler & Schneider, 2006). Research comparing work and social ethics between Catholics and Protestants found that while both groups share similar work ethics, they differ in social ethics, which can influence their perspectives on taxation and public goods (Abellán, 2023). The design of this research does not allow for the incorporation of such place-based narratives, historical context, and cultural differences. Additionally, this research focused on the United States hence the findings can only be thought as representative of the north American socio-political context and dynamic.

Finally, the presence of partial invariance in the multigroup analysis in the conservative vs. liberal group comparison must be acknowledged as a limitation, although the findings and conclusions drawn by the comparison were congruent with extant research, a fact that mitigates concerns that the observed group differences in the path coefficients may be the result of measurement bias rather than true differences in relationships.

Future Research

Future research could investigate is whether Personal Values (PV) are positively linked to Civic Engagement (CE) which would suggest that individuals who prioritize ethical or moral beliefs are more likely to participate in civic activities. The framing of this behavior trait is also important. Unlike issues like climate change which often involve strong value signaling, rural Broadband expansion, although impactful, may be perceived as more technical, infrastructural, or abstract. As a result, individuals may make decisions based more on practical, economic, or normative considerations (e.g., civic duty, perceived usefulness, or social norms), rather than deeply held values. Future projects could instigate such contextual interactions where personal values may play an indirect role in forming behavior this providing a more nuanced insight on how PV influences behavior. Moreover, integrating individual differences in personality (particularly those captured in the Big Five personality traits framework) would add further refinement in the role of PV in understanding or the values-behavior link.

The positive trend observed in the data between economic inequality perceptions and support for Broadband infrastructure funding suggests that perceptions of economic inequality may still play a role under certain conditions – which warrants further investigation into the mechanisms through which inequality perceptions influence policy support. Future research might explore whether framing effects, perceived fairness, or empathic identification with disadvantaged groups strengthen this relationship. Additionally, incorporating qualitative data could offer insight into how people interpret economic inequality in relation to public investment decisions.

This study was conducted employing static predictors of support for rural Broadband. Attitudes and level of support, however, fluctuate over time as a result of evolving economic and cultural factors. A future experimental study, could explore how diversely framed messaging affects public acceptance of taxation for rural Broadband funding through a longitudinal, randomized field experiment, based on the guidelines set forth by (Shadish et al., 2002). Participants would be randomly assigned to receive messages that are addressing economic issues, matters of social inequality and inclusion, or just plain neutral. Data would then be collected over multiple time points to assess interactions and changes in attitudes and behavioral intentions. By embedding the experiment across diverse cultural and regional contexts, the study would evaluate both immediate and sustained impacts of messaging while examining how cultural "ecosystems" moderate these effects. In addition to testing messaging interventions experimentally, such a design would also allow for the exploration of longitudinal effects and cross-cultural expansion to assess the generalizability of the findings. In this manner a future researcher would be able to obtain a richer understanding of how messaging formats and intervention strategies affect support for public infrastructure projects like rural Broadband, thus generating robust and practical insights that can inform more inclusive, effective, and adaptive policy communication strategies.

Finally, future research could benefit by segmentation techniques such as latent class analysis (LCA) could identify unobserved heterogeneity and refine targeting strategies

(Nylund-Gibson et al., 2023; Scotto Rosato & Baer, 2012). Incorporating LCA into persuasion models like the ELM, especially when combined with personality traits and control beliefs like LOC, would likely enhance a future researcher's understanding of who responds to what kind of message, and why.

Conclusion

This study has explored the interaction between psychological, social, and variables influencing public support for hypothecated taxation to fund rural Broadband infrastructure, a critical issue in the broader challenge of bridging the digital divide. The findings indicate that support for initiatives aiming to raise funding through taxation is closely tied to perceived social norms, civic participation, and, in some contexts, the interplay between personal agency and trust in institutions. These results underscore the importance of designing policy communication strategies that are targeted, context-sensitive, psychologically attuned, and culturally adaptive. Tailoring messages to reflect local identity, social dynamics, and the cultural, intellectual, and moral climate of a particular place and time, while leveraging trusted messengers and community norms, can significantly improve public receptivity to funding proposals that serve the common good.

The study offers a comprehensive behavioral framework for understanding how routes of persuasion and messaging strategies can shape support for investment in public-serving infrastructure projects and policies. It contributes not only empirical insights into how support for public infrastructure is shaped but also advances theoretical integration across psychological, behavioral, and communication domains of the Elaboration Likelihood Model (ELM). This framework for practical policy implementation is aimed at advancing inclusive, resilient, and ethically grounded public investment strategies in a rapidly evolving technological and social landscape. By aligning persuasive strategies with both democratic values and community realities, these insights provide a strong foundation for reimagining how public institutions engage with citizens in our age of digital transformation.

REFERENCES

2022 IFIP Networking Conference (IFIP Networking): Conference and workshops : Jne 13-16,2022 - Catania, Italy. (2022). IEEE.

Abellán, M. (2023). Catholics, Protestants and Muslims: Similar work ethics, different social and political ethics. *Journal of Comparative Economics*, *51*(3), 778–815. https://doi.org/10.1016/j.jce.2023.02.004

Agresti, Alan. (2017). *Statistical methods for the social sciences. Pearson.* Pearson.

Aguirre-Urreta, M., & Rönkkö, M. (2015). Sample Size Determination and Statistical Power Analysis in PLS Using R: An Annotated Tutorial. *Communications of the Association for Information Systems*, *36*. https://doi.org/10.17705/1CAIS.03603

Ajzen, I. (2002). Perceived Behavioral Control, Self-Efficacy, Locus of Control, and the Theory of Planned Behavior [1]. *Journal of Applied Social Psychology*, *32*(4), 665–683. https://doi.org/10.1111/j.1559-1816.2002.tb00236.x

Ajzen, I. (2011). The theory of planned behaviour: Reactions and reflections. *Psychology & Health*, *26*(9), 1113–1127. https://doi.org/10.1080/08870446.2011.613995

Ajzen, I. (2012). Martin Fishbein's Legacy: The Reasoned Action Approach. *The ANNALS of the American Academy of Political and Social Science*, *640*(1), 11–27. https://doi.org/10.1177/0002716211423363

Ajzen, Icek. (1991). *Theory of Planned Behavior*.

Alt, J., Preston, I., & Sibieta, L. (2010). The Political Economy of Tax Policy. *Oxford University Pres*, *The Mirrlees review (pp. 1-103)*.

Alves, H. (2013). Co-creation and innovation in public services. *The Service Industries Journal*, *33*(7–8), 671–682. https://doi.org/10.1080/02642069.2013.740468

Al-Zaman, Md. S. (2023). A review of literature on information poverty. *GeoJournal*, *88*(5), 4907–4920. https://doi.org/10.1007/s10708-023-10901-x

Analyzing Quantitative Data: From Description to Explanation. (2003). Sage. http://digital.casalini.it/9781848605374

Analyzing Quantitative Data: From Description to Explanation / Blaikie, Norman—London: Sage, 2003—352 p. - ISBN: 9781848605374—Permalink: Http://digital.casalini.it/9781848605374—Casalini id: 4913322. (n.d.).

Andor, M. A, Cox, J., Gerster, A, Price, M., Sommer, S., & Tomberg, L. (2022). Locus of control and prosocial behavior. *(NBER Working Paper No. 30359). National Bureau of Economic Research.* https://www.nber.org/papers/w30359

Andre, P., Boneva, T., Chopra, F., & Falk, A. (2024a). Globally representative evidence on the actual and perceived support for climate action. *Nature Climate Change*, *14*(3), 253–259. https://doi.org/10.1038/s41558-024-01925-3

Andre, P., Boneva, T., Chopra, F., & Falk, A. (2024b). Misperceived Social Norms and Willingness to Act Against Climate Change. *Review of Economics and Statistics*, 1–46. https://doi.org/10.1162/rest_a_01468

Andreoni. (1995). "Cooperation in Public-Goods Experiments: Kindness or Confusion?" *The American Economic Review*, *85.4*, 891–904.

Andreoni, J. (1989). Giving with Impure Altruism: Applications to Charity and Ricardian Equivalence. *Journal of Political Economy*, *97*(6), 1447–1458. https://doi.org/10.1086/261662

Andreoni, J. (1990). Impure Altruism and Donations to Public Goods: A Theory of Warm-Glow Giving. *The Economic Journal*, *100*(401), 464. https://doi.org/10.2307/2234133

Ansell, C., & Torfing, J. (2021). Co-creation: The new kid on the block in public governance. *Policy & Politics*, *49*(2), 211–230. https://doi.org/10.1332/030557321X16115951196045

Ardoin, N. M., Bowers, A. W., & Gaillard, E. (2023). A systematic mixed studies review of civic engagement outcomes in environmental education. *Environmental Education Research*, *29*(1), 1–26. https://doi.org/10.1080/13504622.2022.2135688

Arviso, J. K. (2024). *Tribal and business leaders' perceptions of the use of broadband Internet services in the Navajo Nation.* [[Doctoral dissertation, ProQuest].].

Aton, A. (2024, August 14). States scramble to replace gas tax cash. *Politico*. https://www.politico.com/news/2024/08/14/ev-fees-states-energy-00168976

Aylsworth, T., & Castro, C. (2024). *Kantian Ethics and the Attention Economy: Duty and Distraction*. Springer International Publishing. https://doi.org/10.1007/978-3-031-45638-1

Babbie, E. R. (2020). *The Practice of Social Research*. Cengage Learning.

Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, *37*(2), 122–147. https://doi.org/10.1037/0003-066X.37.2.122

Beck, P. A., Dalton, R. J., Greene, S., & Huckfeldt, R. (2002). The Social Calculus of Voting: Interpersonal, Media, and Organizational Influences on Presidential Choices. *American Political Science Review*, *96*(1), 57–73. https://doi.org/10.1017/S0003055402004239

Bicchieri, C., & Mercier, H. (2014). Norms and Beliefs: How Change Occurs. In M. Xenitidou & B. Edmonds (Eds.), *The Complexity of Social Norms* (pp. 37–54). Springer International Publishing. https://doi.org/10.1007/978-3-319-05308-0_3

Bimber, B., & Gil De Zúñiga, H. (2022). Social influence and political participation around the world. *European Political Science Review*, *14*(2), 135–154. https://doi.org/10.1017/S175577392200008X

Birskyte, L. (2014). The Impact of Trust in Government on Tax Paying Behavior of Nonfarm Sole Proprietors. *Annals of the Alexandru Ioan Cuza University - Economics*, *61*(1), 1–15. https://doi.org/10.2478/aicue-2014-0004

Blanchard, E. B., & Scarboro, M. E. (1972). Locus of Control, Political Attitudes, and Voting Behavior in a College-Age Population. *Psychological Reports*, *30*(2), 529–530. https://doi.org/10.2466/pr0.1972.30.2.529

Booth-Butterfield, S., & Welbourne, J. (2002). The elaboration likelihood model. *The Persuasion Handbook: Developments in Theory and Practice*, 153–173.

Boykoff, M. T., & Boykoff, J. M. (2004). Balance as bias: Global warming and the US prestige press. *Global Environmental Change*, *14*(2), 125–136. https://doi.org/10.1016/j.gloenvcha.2003.10.001

Brockmann, H., Genschel, P., & Seelkopf, L. (2016). Happy taxation: Increasing tax compliance through positive rewards? *Journal of Public Policy*, *36*(3), 381–406. https://doi.org/10.1017/S0143814X15000331

Brown-Iannuzzi, J. L., Lundberg, K. B., & McKee, S. E. (2021). Economic inequality and socioeconomic ranking inform attitudes toward redistribution. *Journal of Experimental Social Psychology*, *96*, 104180. https://doi.org/10.1016/j.jesp.2021.104180

Buckman, C. (2017). A Kantian right to internet access. *Sociologia: Rivista Quadrimestrale Di Scienze Storiche e Sociali*, *51(3)*.

Burns, A. J., Roberts, T. L., Posey, C., & Lowry, P. B. (2019). The Adaptive Roles of Positive and Negative Emotions in Organizational Insiders' Security-Based Precaution Taking. *Information Systems Research*, *30*(4), 1228–1247. https://doi.org/10.1287/isre.2019.0860

Byrne, B. M. (2001). Structural Equation Modeling With AMOS, EQS, and LISREL: Comparative Approaches to Testing for the Factorial Validity of a Measuring Instrument. *International Journal of Testing*, *1*(1), 55–86. https://doi.org/10.1207/S15327574IJT0101_4

Cakanlar, A., Trudel, R., & White, K. (2022). Political Ideology and the Perceived Impact of Coronavirus Prevention Behaviors for the Self and Others. *Journal of the Association for Consumer Research*, *7*(1), 36–44. https://doi.org/10.1086/711834

Cakanlar, A., & White, K. (2023). A systematic review on political ideology and persuasion. *Psychology & Marketing*, *40*(12), 2526–2538. https://doi.org/10.1002/mar.21894

Cheah, J.-H., Thurasamy, R., School of Management, Universiti Sains Malaysia, Penang, Malaysia, Memon, M. A., NUST Business School, National University of Sciences and Technology, Islamabad Pakistan, Chuah, F., Othman Yeop Abdullah Graduate School of

Business, Universiti Utara Malaysia, Malaysia, Ting, H., & Faculty of Hospitality and Tourism Management, UCSI University, Malaysia College of Business, Polytechnic University of the Philippines, Philippines. (2020). Multigroup Analysis using SmartPLS: Step-by-Step Guidelines for Business Research. *Asian Journal of Business Research*, *10*(3). https://doi.org/10.14707/ajbr.200087

Chen, M.-L., Lu, T.-E., Chen, K.-J., & Liu, C. E. (n.d.). *A TAM-based study on senior citizens' digital learning and user behavioral intention toward use of broadband network technology services provided via television*.

Chen, S., Liu, W., & Song, H. (2020). BROADBAND INTERNET, FIRM PERFORMANCE, AND WORKER WELFARE: EVIDENCE AND MECHANISM. *Economic Inquiry*, *58*(3), 1146–1166. https://doi.org/10.1111/ecin.12854

Chen, Y., & Barnes, S. (2007). Initial trust and online buyer behaviour. *Industrial Management & Data Systems*, *107*(1), 21–36. https://doi.org/10.1108/02635570710719034

Cleveland, M., Kalamas, M., & Laroche, M. (2005). Shades of green: Linking environmental locus of control and pro-environmental behaviors. *Journal of Consumer Marketing*, *22*(4), 198–212. https://doi.org/10.1108/07363760510605317

CloudResearch. (n.d.). *Connect: Participants for academic and market research*. : https://www.cloudresearch.com/products/connect/

Cohen, A., Vigoda, E., & Samorly, A. (2001). Analysis of the Mediating Effect of Personal-Psychological Variables on the Relationship Between Socioeconomic Status and Political Participation: A Structural Equations Framework. *Political Psychology*, *22*(4), 727–757. https://doi.org/10.1111/0162-895X.00260

Cohen, J. (2013). *Statistical Power Analysis for the Behavioral Sciences* (0 ed.). Routledge. https://doi.org/10.4324/9780203771587

Conner, M., & Norman, P. (2022). Understanding the intention-behavior gap: The role of intention strength. *Frontiers in Psychology*, *13*, 923464. https://doi.org/10.3389/fpsyg.2022.923464

Cook, A. J., Moore, K., & Steel, G. D. (2004). The Taking of a Position: A Reinterpretation of the Elaboration Likelihood Model. *Journal for the Theory of Social Behaviour*, *34*(4), 315–331. https://doi.org/10.1111/j.1468-5914.2004.00252.x

Creswell, C., & Chalder, T. (2001). Defensive coping styles in chronic fatigue syndrome. *Journal of Psychosomatic Research*, *51*(4), 607–610. https://doi.org/10.1016/S0022-3999(01)00267-7

Cronbach, L. J. (n.d.). *Coefficient alpha and the internal structure of tests*.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, *16*(3), 297–334. https://doi.org/10.1007/BF02310555

Dakduk, S., ter Horst, E., Santalla, Z., Molina, G., & Malavé, J. (2017). Customer Behavior in Electronic Commerce: A Bayesian Approach. *Journal of Theoretical and Applied Electronic Commerce Research*, *12*(2), 1–20. https://doi.org/10.4067/S0718-18762017000200002

Dang, L., Seemann, A., Lindenmeier, J., & Saliterer, I. (2022). Explaining civic engagement: The role of neighborhood ties, place attachment, and civic responsibility. *Journal of Community Psychology*, *50*(3), 1736–1755. https://doi.org/10.1002/jcop.22751

Davies, A. (2021). COVID-19 and ICT-Supported Remote Working: Opportunities for Rural Economies. *World*, *2*(1), 139–152. https://doi.org/10.3390/world2010010

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, *13*(3), 319. https://doi.org/10.2307/249008

Deutchman, I. E. (1985). Internal-External Locus of Control, Power and Political Participation. *Psychological Reports*, *57*(3), 835–843. https://doi.org/10.2466/pr0.1985.57.3.835

Dickes, L., Crouch, E., & Walker, T. (2019). Socioeconomic determinants of broadband non-adoption among consumer households in South Carolina, USA. *Ager. Revista de Estudios Sobre Despoblación y Desarrollo Rural*, *26*, 103–127. https://doi.org/10.4422/ager.2018.17

Dillard, J. P., & Pfau, M. (Eds.). (2002). *The Persuasion handbook: Developments in theory and practice*. Sage Publications.

Doetinchem, O. (2010). Hypothecation Hypothecation of tax revenue for health. *World Health Report*, *Background Paper*, 51.

Dolan, P. (2022). Social support, empathy, social capital and civic engagement: Intersecting theories for youth development. *Education, Citizenship and Social Justice*, *17*(3), 255–267. https://doi.org/10.1177/17461979221136368

Doolittle, A., & Faul, A. C. (2013). Civic Engagement Scale: A Validation Study. *SAGE Open*, *3*(3), 215824401349554. https://doi.org/10.1177/2158244013495542

Du, H., & King, R. B. (2022). What predicts perceived economic inequality? The roles of actual inequality, system justification, and fairness considerations. *British Journal of Social Psychology*, *61*(1), 19–36. https://doi.org/10.1111/bjso.12468

Dwivedi, Y. K., & Lal, B. (2007). Socio-economic determinants of broadband adoption. *Industrial Management & Data Systems*, *107*(5), 654–671. https://doi.org/10.1108/02635570710750417

Edwards, A. L. (1957). *The social desirability variable in personality assessment and research.*

Efron, B., & Tibshirani, R. (1986). Bootstrap Methods for Standard Errors, Confidence Intervals, and Other Measures of Statistical Accuracy. *Statistical Science*, *1*(1). https://doi.org/10.1214/ss/1177013815

Ehrlich, T. (1997). Civic learning: “Democracy and education” revisited. *Educational Record*, *78(3–4)*, 56–65.

Eisenberg, N., Fabes, R. A., & Spinrad, T. L. (2007). Prosocial Development. In W. Damon & R. M. Lerner (Eds.), *Handbook of Child Psychology* (1st ed.). Wiley. https://doi.org/10.1002/9780470147658.chpsy0311

Fairbrother, M., Johansson Sevä, I., & Kulin, J. (2019). Political trust and the relationship between climate change beliefs and support for fossil fuel taxes: Evidence from a survey of 23 European countries. *Global Environmental Change*, *59*, 102003. https://doi.org/10.1016/j.gloenvcha.2019.102003

Faries, M. D. (2016). Why We Don’t “Just Do It”: Understanding the Intention-Behavior Gap in Lifestyle Medicine. *American Journal of Lifestyle Medicine*, *10*(5), 322–329. https://doi.org/10.1177/1559827616638017

FCC. (2024, June 1). *Affordable Connectivity Program (ACP)*. https://www.fcc.gov/acp

Festinger, L. (1957). *A Theory of Cognitive Dissonance*. Stanford University Press. https://doi.org/10.1515/9781503620766

Fischbacher, U., Gachter, S., & Fehr, E. (2001). Are people conditionally cooperative? Evidence from a public goods experiment. *Economics Letters*.

Fishbein, M., & Ajzen, I. (1981). Attitudes and voting behavior: An application of the theory of reasoned action. *Progress in Applied Social Psychology*, *1*(1), 253–313.

Ford, G. S. (2018). Is faster better? Quantifying the relationship between broadband speed and economic growth. *Telecommunications Policy*, *42*(9), 766–777. https://doi.org/10.1016/j.telpol.2018.05.006

Fornell, C., & Larcker, D. F. (1981). Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics. *Journal of Marketing Research*, *18*(3), 382. https://doi.org/10.2307/3150980

Franke, G., & Sarstedt, M. (2019). Heuristics versus statistics in discriminant validity testing: A comparison of four procedures. *Internet Research*, *29*(3), 430–447. https://doi.org/10.1108/IntR-12-2017-0515

Frontier Business. (2023, August 11). Why Property Managers Should Provide Fiber Internet to Their Tenants. *Frontier Business Blog*. https://business.frontier.com/blog/why-property-managers-should-provide-fiber-internet-to-their-tenants

García-Castro, J. D., Rodríguez-Bailón, R., & Willis, G. B. (2020). Perceiving economic inequality in everyday life decreases tolerance to inequality. *Journal of Experimental Social Psychology*, *90*, 104019. https://doi.org/10.1016/j.jesp.2020.104019

García-Castro, J. D., Willis, G. B., & Rodríguez-Bailón, R. (2019). I know people who can and who cannot: A measure of the perception of economic inequality in everyday life. *The Social Science Journal*, *56*(4), 599–608. https://doi.org/10.1016/j.soscij.2018.09.008

García-Sánchez, E., Willis, G. B., Rodríguez-Bailón, R., Palacio Sañudo, J., David Polo, J., & Rentería Pérez, E. (2018). Perceptions of Economic Inequality and Support for Redistribution: The role of Existential and Utopian Standards. *Social Justice Research*, *31*(4), 335–354. https://doi.org/10.1007/s11211-018-0317-6

Gerli, P., Van der Wee, M., Verbrugge, S., & Whalley, J. (2018). The involvement of utilities in the development of broadband infrastructure: A comparison of EU case studies. *Telecommunications Policy*, *42*(9), 726–743. https://doi.org/10.1016/j.telpol.2018.03.001

Ghasemi, A., & Zahediasl, S. (2012). Normality Tests for Statistical Analysis: A Guide for Non-Statisticians. *International Journal of Endocrinology and Metabolism*, *10*(2), 486–489. https://doi.org/10.5812/ijem.3505

Gil De Zúñiga, H., Diehl, T., & Ardévol-Abreu, A. (2017). Internal, External, and Government Political Efficacy: Effects on News Use, Discussion, and Political Participation. *Journal of Broadcasting & Electronic Media*, *61*(3), 574–596. https://doi.org/10.1080/08838151.2017.1344672

Gimpelson, V., & Oshchepkov, A. (2012). *Does more unemployment cause more fear of unemployment?*

Gimpelson, V., & Treisman, D. (2018). Misperceiving inequality. *Economics & Politics*, *30*(1), 27–54. https://doi.org/10.1111/ecpo.12103

Glass, V., & Stefanova, S. K. (2010). An empirical study of broadband diffusion in rural America. *Journal of Regulatory Economics*, *38*(1), 70–85. https://doi.org/10.1007/s11149-010-9119-y

Gootnick, A. T. (1974). Locus of control and political participation of college students: A comparison of unidimensional and multidimensional approaches. *Journal of Consulting and Clinical Psychology*, *42*(1), 54–58. https://doi.org/10.1037/h0035997

Gorski, P. (2005). Education Equity and the Digital Divide. *Norfolk, VA: Association for the Advancement of Computing in Education (AACE*, *13*(1), 3-45.

Graham, J., Haidt, J., & Nosek, B. A. (2009). Liberals and conservatives rely on different sets of moral foundations. *Journal of Personality and Social Psychology*, *96*(5), 1029–1046. https://doi.org/10.1037/a0015141

Grifitth, E. (2023, October 20). Starlink Internet Review: Pricing, Speeds, and Everything You Should Know. *CNET*. https://www.cnet.com/home/internet/starlink-internet-review/

Grimmelikhuijsen, S., & Knies, E. (2017). Validating a scale for citizen trust in government organizations. *International Review of Administrative Sciences*, *83*(3), 583–601. https://doi.org/10.1177/0020852315585950

Haghighat, R. (2007). The development of the brief social desirability scale (BSDS). *Europe's Journal of Psychology*, *3*(4), 10–5964.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)* (Second edition). SAGE.

Han, H. (2014). The norm activation model and theory-broadening: Individuals' decision-making on environmentally-responsible convention attendance. *Journal of Environmental Psychology*, *40*, 462–471. https://doi.org/10.1016/j.jenvp.2014.10.006

Hardin, R. (1983). Collective Action. By Russell Hardin. (Baltimore: Johns Hopkins University Press, 1982. Pp. xvi + 248. *American Political Science Review*, *77*(3), 839–840. https://doi.org/10.2307/1957379

Haugtvedt, C. P., & Petty, R. E. (1992). Personality and persuasion: Need for cognition moderates the persistence and resistance of attitude changes. *Journal of Personality and Social Psychology*, *63*(2), 308–319. https://doi.org/10.1037/0022-3514.63.2.308

Henseler, J., Ringle, C. M., & Sarstedt, M. (2016). Testing measurement invariance of composites using partial least squares. *International Marketing Review*, *33*(3), 405–431. https://doi.org/10.1108/IMR-09-2014-0304

Hochschild, J. L. (2001). *Citizens and Politics* (1st ed.). Cambridge University Press. https://doi.org/10.1017/cbo9780511896941.015

Hofstede, G. (2023). *Culture and Organizations*.

Horrigan, J. B., & Schement, J. R. (2021). *Broadband as civic infrastructure: Community empowerment, equity, and a Digital New Deal* [Application/pdf]. The German Marshall Fund of the United States. https://doi.org/10.7282/00000051

H.R.1700 - 117th Congress (2021-2022): Broadband Infrastructure Finance and Innovation Act of 2021. (2021, March 10). Http://Www.Congress.Gov/.

Iacono, R., & Ranaldi, M. (2019). Perceptions of Inequality and Redistribution: A Note. *Halshs02042330*.

IBM Corp. (2025). *IBM SPSS Statistics for Windows* (Version 30.0.0.0) [Computer software].

International Monetary Fund. (1988). Case for Earmarked Taxes: Theory and Example. *IMF Working Papers*, *88*(18), 1. https://doi.org/10.5089/9781451922677.001

J. Kitchen, P., Kerr, G., E. Schultz, D., McColl, R., & Pals, H. (2014). The elaboration likelihood model: Review, critique and research agenda. *European Journal of Marketing*, *48*(11/12), 2033–2050. https://doi.org/10.1108/EJM-12-2011-0776

Jain, J., Walia, N., Singla, H., Singh, S., Sood, K., & Grima, S. (2023). Heuristic Biases as Mental Shortcuts to Investment Decision-Making: A Mediation Analysis of Risk Perception. *Risks*, *11*(4), 72. https://doi.org/10.3390/risks11040072

Jankowski, J. E. (1984). THE PRACTICE AND PREVALENCE OF EARMARKING. *Proceedings of the Annual Conference on Taxation Held under the Auspices of the National Tax Association-Tax Institute of America.*, *77*, 258–267.

Janoff-Bulman, R., & Carnes, N. C. (2016). Social Justice and Social Order: Binding Moralities across the Political Spectrum. *PLOS ONE*, *11*(3), e0152479. https://doi.org/10.1371/journal.pone.0152479

Jayawardane, D. (2015). *Psychological Factors affect Tax Compliance- A Review paper*. *4*(6).

Jia, F. (2024). Research on the Impact of Global Pandemics on International Development Policies: A Case Study of COVID-19. *Academic Journal of Humanities & Social Sciences*, *7*(7). https://doi.org/10.25236/AJHSS.2024.070734

Jimenez, P., & Iyer, G. S. (2016). Tax compliance in a social setting: The influence of social norms, trust in government, and perceived fairness on taxpayer compliance. *Advances in Accounting*, *34*, 17–26. https://doi.org/10.1016/j.adiac.2016.07.001

Jonsson, A.-K. E., & Nilson, A. (2014). Exploring the Relationship Between Values and Pro-Environmental Behaviour: The Influence of Locus of Control. *Environmental Values*, *23*(3), 297–314. http://www.jstor.org/stable/43695150

Jung, C. G. (with Bollingen Foundation Collection (Library of Congress)). (1973). *Synchronicity: An acausal connecting principle* (1st Princeton/Bollingen paperback ed.). Princeton University Press.

Kaiser, H. F., & Rice, J. (1974). Little Jiffy, Mark Iv. *Educational and Psychological Measurement*, *34*(1), 111–117. https://doi.org/10.1177/001316447403400115

Kalula, S. R., Dida, M. A., & Yonah, Z. O. (2024). Applying Theory of Planned Behavior to Examine Users' Intention to Adopt Broadband Internet in Lower-Middle Income Countries' Rural Areas: A Case of Tanzania. *Journal of Information Science Theory and Practice*, *12*(1), 60–76. https://doi.org/10.1633/JISTAP.2024.12.1.4

Katz, R., & Callorda, F. (2018). Accelerating the development of Latin American digital ecosystem and implications for broadband policy. *Telecommunications Policy*, *42*(9), 661–681. https://doi.org/10.1016/j.telpol.2017.11.002

Kichi, E. (n.d.). *The Burden of New Taxes: Acceptance of Taxes as a junction of Affectedness and Egoistic Versus Altruistic Orientation*.

Kirchler, E., Hoelzl, E., & Wahl, I. (2008). Enforced versus voluntary tax compliance: The "slippery slope" framework. *Journal of Economic Psychology*, *29*(2), 210–225. https://doi.org/10.1016/j.joep.2007.05.004

Krantz, J. H., & Reips, U.-D. (2017). The state of web-based research: A survey and call for inclusion in curricula. *Behavior Research Methods*, *49*(5), 1621–1629. https://doi.org/10.3758/s13428-017-0882-x

Kuhn, C., Khoo, S.-M., Czerniewicz, L., Lilley, W., Bute, S., Crean, A., Abegglen, S., Burns, T., Sinfield, S., Jandrić, P., Knox, J., & MacKenzie, A. (2023). Understanding Digital Inequality: A Theoretical Kaleidoscope. *Postdigital Science and Education*, *5*(3), 894–932. https://doi.org/10.1007/s42438-023-00395-8

Kyriakidou, V., Michalakelis, C., & Sphicopoulos, T. (2013). Driving factors during the different stages of broadband diffusion: A non-parametric approach. *Technological Forecasting and Social Change*, *80*(1), 132–147. https://doi.org/10.1016/j.techfore.2012.07.001

Lamberton, C., De Neve, J.-E., & Norton, M. I. (2018). The Power of Voice in Stimulating Morality: Eliciting Taxpayer Preferences Increases Tax Compliance. *Journal of Consumer Psychology*, *28*(2), 310–328. https://doi.org/10.1002/jcpy.1022

Lee, J.-C., Chen, L., & Zhang, H. (2023). Exploring the adoption decisions of mobile health service users: A behavioral reasoning theory perspective. *Industrial Management & Data Systems*, *123*(8), 2241–2266. https://doi.org/10.1108/IMDS-11-2022-0682

Lim, J. Y., & Moon, K.-K. (2020). Examining the Moderation Effect of Political Trust on the Linkage between Civic Morality and Support for Environmental Taxation. *International Journal of Environmental Research and Public Health*, *17*(12), 4476. https://doi.org/10.3390/ijerph17124476

Lopez, A. M., & Marakas, G. M. (2023). Public-Private Partnership (P3) Success: Critical Success Factors for Local Government Services and Infrastructure Delivery. *Engaged Management ReView*, *6*(1). https://doi.org/10.28953/2375-8643.1077

Madden, T. J., Ellen, P. S., & Ajzen, I. (1992). A Comparison of the Theory of Planned Behavior and the Theory of Reasoned Action. *Personality and Social Psychology Bulletin*, *18*(1), 3–9. https://doi.org/10.1177/0146167292181001

Mahalanobis, P. C. (2018). ON THE GENERALIZED DISTANCE IN STATISTICS. *Sankhyā: The Indian Journal of Statistics, Series A (2008-)*, *80*, S1–S7. JSTOR. https://www.jstor.org/stable/48723335

Malamud, O., Cueto, S., Cristia, J., & Beuermann, D. W. (2018). *Do Children Benefit from Internet Access?: Experimental Evidence from a Developing Country*. Inter-American Development Bank. https://doi.org/10.18235/0001392

Marsh, C. (1985). Back on the Bandwagon: The Effect of Opinion Polls on Public Opinion. *British Journal of Political Science*, *15*(1), 51–74. https://doi.org/10.1017/S0007123400004063

Mautner, D., Peterson, B., Cunningham, A., Ku, B., Scott, K., & LaNoue, M. (2017). How Multidimensional Health Locus of Control predicts utilization of emergency and inpatient hospital services. *Journal of Health Psychology*, *22*(3), 314–323. https://doi.org/10.1177/1359105315603468

Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An Integrative Model of Organizational Trust. *The Academy of Management Review*, *20*(3), 709. https://doi.org/10.2307/258792

Mayo, J. W., & Wallsten, S. (2011). From Network Externalities to Broadband Growth Externalities: A Bridge not yet Built. *Review of Industrial Organization*, *38*(2), 173–190. https://doi.org/10.1007/s11151-011-9286-8

Meinert, J., & Krämer, N. C. (2022). How the expertise heuristic accelerates decision-making and credibility judgments in social media by means of effort reduction. *PLOS ONE*, *17*(3), e0264428. https://doi.org/10.1371/journal.pone.0264428

Mill, J. S. (1863). *Utilitarianism* (2 p.l., 95 p. 22 cm.). Parker, son, and Bourn. https://lccn.loc.gov/11015966

Mill, J. S., & Sher, G. (2001). *Utilitarianism: And the 1868 speech on capital punishment* (2. ed). Hackett Publ. Co.

Miranti, R., & Evans, M. (2019). Trust, sense of community, and civic engagement: Lessons from Australia. *Journal of Community Psychology*, *47*(2), 254–271. https://doi.org/10.1002/jcop.22119

Miri Lavassani, K., Movahedi, B., & Parry, G. (2014). Broadband Internet adoption challenge: An investigation of broadband utilization in the United States. *Transforming Government: People, Process and Policy*, *8*(4), 620–644. https://doi.org/10.1108/TG-11-2013-0050

Moradi, M., & Zihagh, F. (2022). A META-ANALYSIS of the elaboration likelihood model in the electronic word of mouth literature. *International Journal of Consumer Studies*, *46*(5), 1900–1918. https://doi.org/10.1111/ijcs.12814

Moyes, P. (2003). Redistributive effects of minimal equal sacrifice taxation. *Journal of Economic Theory*, *108*(1), 111–140. https://doi.org/10.1016/S0022-0531(02)00016-9

Neill, J. R. (2000). The benefit and sacrifice principles of taxation: A synthesis. *Social Choice and Welfare*, *17*(1), 117–124. https://doi.org/10.1007/PL00007169

Ng, T. W. H., Sorensen, K. L., & Eby, L. T. (2006). Locus of control at work: A meta-analysis. *Journal of Organizational Behavior*, *27*(8), 1057–1087. https://doi.org/10.1002/job.416

Nordlund, A. M., & Garvill, J. (2003). Effects of values, problem awareness, and personal norm on willingness to reduce personal car use. *Journal of Environmental Psychology*, *23*(4), 339–347. https://doi.org/10.1016/S0272-4944(03)00037-9

Nowicki, S., Duke, M., Sisney, S., Stricker, B., & Tyler, M. (2004). Reducing the Drop-Out Rates of At-Risk High School Students: The Effective Learning Program (ELP). *Genetic, Social, and General Psychology Monographs*, *130*(3), 225–240. https://doi.org/10.3200/MONO.130.3.225-240

NTCA – The Rural Broadband Association. (n.d.). #RuralIsCool. *NTCA – The Rural Broadband Association*. Retrieved April 13, 2025, from https://www.ntca.org/ruraliscool

Nylund-Gibson, K., Garber, A. C., Singh, J., Witkow, M. R., Nishina, A., & Bellmore, A. (2023). The Utility of Latent Class Analysis to Understand Heterogeneity in Youth Coping Strategies: A Methodological Introduction. *Behavioral Disorders*, *48*(2), 106–120. https://doi.org/10.1177/01987429211067214

Ojea, E., & Loureiro, M. L. (2007). Altruistic, egoistic and biospheric values in willingness to pay (WTP) for wildlife. *Ecological Economics*, *63*(4), 807–814. https://doi.org/10.1016/j.ecolecon.2007.02.003

Oshakuade, O. J., Ekpenyon, S. I., & Otutu, T. I. (2023). Locus of Control, Achievement Motivation and Academic Self Efficacy as Determinants of Secondary School Students' Academic Performance in Ondo State, Nigeria. *International Journal of Education, Learning and Development*, *11*(6), 44–51. https://doi.org/10.37745/ijeld.2013/vol11n64451

Ovando, C., & Olivera, E. (2018). Was household internet adoption driven by the reform? Evaluation of the 2013 telecommunication reform in Mexico. *Telecommunications Policy*, *42*(9), 700–714. https://doi.org/10.1016/j.telpol.2018.03.005

Owens, J. (2023). Seeing Behavior as Black, Brown, or White: Teachers' Racial/Ethnic Bias in Perceptions of Routine Classroom Misbehavior. *Social Psychology Quarterly*, *86*(3), 298–311. https://doi.org/10.1177/01902725231177644

Oyserman, D., Coon, H. M., & Kemmelmeier, M. (2002). Rethinking individualism and collectivism: Evaluation of theoretical assumptions and meta-analyses. *Psychological Bulletin*, *128*(1), 3–72. https://doi.org/10.1037/0033-2909.128.1.3

Parent, M., Vandebeek, C. A., & Gemino, A. C. (2005). Building Citizen Trust Through E-government. *Government Information Quarterly*, *22*(4), 720–736. https://doi.org/10.1016/j.giq.2005.10.001

Pauer, S., Rutjens, B. T., & Van Harreveld, F. (2024). Trust is good, control is better: The role of trust and personal control in response to threat. *Journal of Applied Social Psychology*, jasp.13058. https://doi.org/10.1111/jasp.13058

Pedrós, X., Castells, P., Pfutze, T., Cruz, G., Rodríguez-Castelán, C., Masaki, T., & Winkler, H. (n.d.). *The Welfare Effects of Mobile Broadband Internet: Evidence from Nigeria*. 46.

Petty, R. E., & Cacioppo, J. T. (1984). SOURCE FACTORS AND THE ELABORATION LIKELIHOOD MODEL OF PERSUASION. *Advances in Consumer Research Volume*, *11*(Thomas C. Kinnear, Provo, UT : Association for Consumer Research), 668–672.

Petty, R. E., Cacioppo, J. T., Strathman, A. J., & Priester, J. R. (2005). To think or not to think: Exploring two routes to persuasion. In *Persuasion: Psychological Insights and Perspectives* (2nd ed., pp. 81–116). Sage Publications. https://richardepetty.com/wp-content/uploads/2019/01/2005persuasionchappettycacioppostrathmanpriester.pdf

Poortinga, W., Steg, L., & Vlek, C. (2004). Values, Environmental Concern, and Environmental Behavior: A Study into Household Energy Use. *Environment and Behavior*, *36*(1), 70–93. https://doi.org/10.1177/0013916503251466

Porter, C. O. L. H., Outlaw, R., Gale, J. P., & Cho, T. S. (2019). The Use of Online Panel Data in Management Research: A Review and Recommendations. *Journal of Management*, *45*(1), 319–344. https://doi.org/10.1177/0149206318811569

Prentice, D. A., & Miller, D. T. (1996). Pluralistic Ignorance and the Perpetuation of Social Norms by Unwitting Actors. In *Advances in Experimental Social Psychology* (Vol. 28, pp. 161–209). Elsevier. https://doi.org/10.1016/S0065-2601(08)60238-5

Primc, K., Ogorevc, M., Slabe-Erker, R., Bartolj, T., & Murovec, N. (2021). How does Schwartz's theory of human values affect the proenvironmental behavior model? *Baltic Journal of Management*, *16*(2), 276–297. https://doi.org/10.1108/BJM-08-2020-0276

Putnam, R. D. (1995). Tuning In, Tuning Out: The Strange Disappearance of Social Capital in America. *PS: Political Science & Politics*, *28*(4), 664–683. https://doi.org/10.2307/420517

Qualtrics. (n.d.). https://www.qualtrics.com/support/survey-platform/survey-module/survey-checker/fraud-detection/

Rawls, J. (1974). Symposium: Rawls's "A Theory of Justice": Reply. *The Quarterly Journal of Economics*, *88*, 633. https://doi.org/10.2307/1881827

Rawls, J. (1999). *A theory of justice* (Rev. ed). Belknap Press of Harvard University Press.

Reddick, C. G., Enriquez, R., Harris, R. J., & Sharma, B. (2020). Determinants of broadband access and affordability: An analysis of a community survey on the digital divide. *Cities*, *106*, 102904. https://doi.org/10.1016/j.cities.2020.102904

Reichert, F. (2016). How internal political efficacy translates political knowledge into political participation: Evidence from Germany. *Europe's Journal of Psychology*, *12*(2), 221–241. https://doi.org/10.5964/ejop.v12i2.1095

Rhinesmith, C., Reisdorf, B., & Bishop, M. (2019). The ability to pay for broadband. *Communication Research and Practice*, *5*(2), 121–138. https://doi.org/10.1080/22041451.2019.1601491

Ringle, C. M., Wende, S., & Becker, J.-M. (2024). *SmartPLS 4* [Computer software]. https://www.smartpls.com

Rose, H., & Kitayama, S. (1991). *Culture and the Self: Implications for Cognition, Emotion, and Motivation*.

Rösler, J., Söll, T., Hancock, L., & Friedli, T. (2021). Value Co-Creation between Public Service Organizations and the Private Sector: An Organizational Capabilities Perspective. *Administrative Sciences*, *11*(2), 55. https://doi.org/10.3390/admsci11020055

Rotter, J. B. (1954). *Social learning and clinical psychology*.

Rustagi, D., Engel, S., & Kosfeld, M. (2010). Conditional Cooperation and Costly Monitoring Explain Success in Forest Commons Management. *Science*, *330*(6006), 961–965. https://doi.org/10.1126/science.1193649

Sagiv, L., Roccas, S., Cieciuch, J., & Schwartz, S. H. (2017). Personal values in human life. *Nature Human Behaviour*, *1*(9), 630–639. https://doi.org/10.1038/s41562-017-0185-3

Salerno, J. M., Bottoms, B. L., & Peter-Hagene, L. C. (2017). Individual versus group decision making: Jurors' reliance on central and peripheral information to evaluate expert testimony. *PLOS ONE*, *12*(9), e0183580. https://doi.org/10.1371/journal.pone.0183580

Sands, M. L. (2017). Exposure to inequality affects support for redistribution. *Proceedings of the National Academy of Sciences*, *114*(4), 663–668. https://doi.org/10.1073/pnas.1615010113

Sarstedt, M., & Ringle, C. M. (2010). Treating unobserved heterogeneity in PLS path modeling: A comparison of FIMIX-PLS with different data analysis strategies. *Journal of Applied Statistics*, *37*(8), 1299–1318. https://doi.org/10.1080/02664760903030213

Schmitt-Beck, R. (2016). Bandwagon Effect. In R. Schmitt-Beck, *Communication*. Oxford University Press. https://doi.org/10.1093/obo/9780199756841-0113

Schwartz, S. H. (1977). Normative Influences on Altruism. In *Advances in Experimental Social Psychology* (Vol. 10, pp. 221–279). Elsevier. https://doi.org/10.1016/S0065-2601(08)60358-5

Schwartz, S. H. (1992). Universals in the Content and Structure of Values: Theoretical Advances and Empirical Tests in 20 Countries. In *Advances in Experimental Social Psychology* (Vol. 25, pp. 1–65). Elsevier. https://doi.org/10.1016/S0065-2601(08)60281-6

Schwartz, S. H., Melech, G., Lehmann, A., Burgess, S., Harris, M., & Owens, V. (2001). Extending the Cross-Cultural Validity of the Theory of Basic Human Values with a Different Method of Measurement. *Journal of Cross-Cultural Psychology*, *32*(5), 519–542. https://doi.org/10.1177/0022022101032005001

Scotto Rosato, N., & Baer, J. C. (2012). Latent Class Analysis: A Method for Capturing Heterogeneity. *Social Work Research*, *36*(1), 61–69. https://doi.org/10.1093/swr/svs006

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference* (Nachdr.). Wadsworth Cengage Learning.

Shulruf, B., Hattie, J., & Dixon, R. (2007). Development of a New Measurement Tool for Individualism and Collectivism. *Journal of Psychoeducational Assessment*, *25*(4), 385–401. https://doi.org/10.1177/0734282906298992

Silva, S., Badasyan, N., & Busby, M. (2018). Diversity and digital divide: Using the National Broadband Map to identify the non-adopters of broadband. *Telecommunications Policy*, *42*(5), 361–373. https://doi.org/10.1016/j.telpol.2018.02.008

Simon, H. A. (1955). A Behavioral Model of Rational Choice. *The Quarterly Journal of Economics*, *69*(1), 99. https://doi.org/10.2307/1884852

Sivathanu, B. (2018). Adoption of internet of things (IOT) based wearables for healthcare of older adults – a behavioural reasoning theory (BRT) approach. *Journal of Enabling Technologies*, *12*(4), 169–185. https://doi.org/10.1108/JET-12-2017-0048

Smith, K. W., & Stalans, L. J. (1991). Encouraging Tax Compliance With Positive Incentives: A Conceptual Framework and Research Directions. *Law & Policy*, *13*(1), 35–53. https://doi.org/10.1111/j.1467-9930.1991.tb00056.x

Solhaug, T. (2006). Knowledge and Self-Efficacy as Predictors of Political Participation and Civic Attitudes: With Relevance for Educational Practice. *Policy Futures in Education*, *4*(3), 265–278. https://doi.org/10.2304/pfie.2006.4.3.265

Spahn, A. (2020). Digital Objects, Digital Subjects and Digital Societies: Deontology in the Age of Digitalization. *Information*, *11*(4), 228. https://doi.org/10.3390/info11040228

Sparkman, G., Geiger, N., & Weber, E. U. (2022). Americans experience a false social reality by underestimating popular climate policy support by nearly half. *Nature Communications*, *13*(1), 4779. https://doi.org/10.1038/s41467-022-32412-y

Steg, L., Dreijerink, L., & Abrahamse, W. (2005a). Factors influencing the acceptability of energy policies: A test of VBN theory. *Journal of Environmental Psychology*, *25*(4), 415–425. https://doi.org/10.1016/j.jenvp.2005.08.003

Steg, L., Dreijerink, L., & Abrahamse, W. (2005b). Factors influencing the acceptability of energy policies: A test of VBN theory. *Journal of Environmental Psychology*, *25*(4), 415–425. https://doi.org/10.1016/j.jenvp.2005.08.003

Stern, P. C. (2000). New Environmental Theories: Toward a Coherent Theory of Environmentally Significant Behavior. *Journal of Social Issues*, *56*(3), 407–424. https://doi.org/10.1111/0022-4537.00175

Stimson, L. (2024, August 12). ISPs Want SCOTUS to Strike Down NY Broadband Law. *Inside Towers*. https://insidetowers.com/isps-want-scotus-to-strike-down-ny-broadband-law/?utm_source=New+Inside+Towers+List&utm_campaign=41d3670469-EMAIL_CAMPAIGN_2024_08_09_02_08&utm_medium=email&utm_term=0_-41d3670469-%5BLIST_EMAIL_ID%5D

Straub, D. W. (1989). Validating Instruments in MIS Research. *MIS Quarterly*, *13*(2), 147. https://doi.org/10.2307/248922

Tahon, Mathieu, Jan Van Ooteghem, Koen Casier, Sofie Verbrugge, Didier Colle, Mario Pickavet, and Piet Demeester. "Improving the FTTH Business Case–A Joint Telco-Utility

Network Rollout Model." Telecommunications Policy 38, no. 5–6 (June 2014): 426–37. https://doi.org/10.1016/j.telpol.2013.01.004.

Taylor, G. (2018). Remote Rural Broadband Systems in Canada. *Telecommunications Policy*, *42*(9), 744–756. https://doi.org/10.1016/j.telpol.2018.02.001

The jamovi project (Version 2.6.13). (2025). [Computer software].

The Pew Charitable Trusts. (2022). *Virginia taps electric companies to help expand rural broadband access* [Issue brief]. The Pew Charitable Trusts. https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2022/10/virginia-taps-electric-companies-to-help-expand-rural-broadband-access

Torgler, B., & Schneider, F. (2006). *What Shapes Attitudes Toward Paying Taxes? Evidence from Multicultural European Countries*.

Torstveit, L., Sütterlin, S., & Lugo, R. G. (2016). Empathy, guilt proneness, and gender: Relative contributions to prosocial behaviour. *Europe's Journal of Psychology*, *12*(2), 260–270. https://doi.org/10.5964/ejop.v12i2.1097

Turner-Zwinkels, F. M., Johnson, B. B., Sibley, C. G., & Brandt, M. J. (2021). Conservatives' Moral Foundations Are More Densely Connected Than Liberals' Moral Foundations. *Personality and Social Psychology Bulletin*, *47*(2), 167–184. https://doi.org/10.1177/0146167220916070

United Nations. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development (A/RES/70/1)*. https://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E

U.S. Census Bureau. (2025, March 11). *United States Profile: Population and People*. U.S. Department of Commerce. https://data.census.gov/profile/United_States?g=010XX00US#populations-and-people

Van Stekelenburg, J., Klandermans, B., & Akkerman, A. (2016). Does Civic Participation Stimulate Political Activity? *Journal of Social Issues*, *72*(2), 286–314. https://doi.org/10.1111/josi.12167

Verbrugge, Sofie, Marlies Van der Wee, Morten Falch, and Wolter Lemstra. "Is Policy Shaping the Market, or Is the Market Shaping Policy? Evaluation of Policy Measures on the Fixed and Mobile Broadband Market." Telecommunications Policy 42, no. 9 (October 2018): 659–60. https://doi.org/10.1016/j.telpol.2018.07.001.

Wallrich, L., West, K., & Rutland, A. (2021). Civic understanding mediates of the effect of educational tracks on voting intentions in German schools. *Citizenship, Social and Economics Education*, *20*(2), 84–102. https://doi.org/10.1177/20471734211016501

Warren, M. (2007). The digital vicious cycle: Links between social disadvantage and digital exclusion in rural areas. *Telecommunications Policy*, *31*(6), 374–388. https://doi.org/10.1016/j.telpol.2007.04.001

Westaby, J. D. (2005). Behavioral reasoning theory: Identifying new linkages underlying intentions and behavior. *Organizational Behavior and Human Decision Processes*, *98*(2), 97–120. https://doi.org/10.1016/j.obhdp.2005.07.003

Whitacre, B., Gallardo, R., & Strover, S. (2014). Does rural broadband impact jobs and income? Evidence from spatial and first-differenced regressions. *The Annals of Regional Science*, *53*(3), 649–670. https://doi.org/10.1007/s00168-014-0637-x

Wray-Lake, L. (2023). Prosociality and Civic Engagement. In T. Malti & M. Davidov (Eds.), *The Cambridge Handbook of Prosociality: Development, Mechanisms, Promotion* (pp. 542–559). Cambridge University Press; Cambridge Core. https://doi.org/10.1017/9781108876681.031

Xiao, A., Xu, Z., Skare, M., Qin, Y., & Wang, X. (2024). Bridging the digital divide: The impact of technological innovation on income inequality and human interactions. *Humanities and Social Sciences Communications*, *11*(1), 809. https://doi.org/10.1057/s41599-024-03307-8

Yasa, I. N. O. S. (2020). Locus of Control as a Moderation of the Effect of Distributive Justice and Procedural Justice on Taxpayers Compliance of Hotel Tax in Gianyar District. *International Journal of Innovative Science and Research Technology (IJISRT)*, *5*(12), 737–745. www.ijisrt.com

Zhuravskaya, E., Petrova, M., & Enikolopov, R. (2020). Political effects of the Internet and social media. Annual review of economics, 12, 415-438.

APENDIX A: CONSTRUCT DEFINITIONS AND MEASURES

Construct	Abbr.	Type	Definition	Source	Indicators
Intention to Vote for Rural Broadband Infrastructure Investment	INV	DV	Attitude\behavior that will inform government policy recommendations regarding tax increases	Adapted from Chen, Y., & Barnes, S. (2007). Initial trust and online buyer behavior. Industrial Management & Data Systems, 107(1), 21–36. https://doi.org/10.1108/02635570710719034	2
Personal Values	PV	IV	Attitudes, and standards that individuals use to guide their actions (egotistic, altruistic)	Adaptation of VBN (Value, Belief, Norm) model - misc. works such as: Steg, Linda, Like Dreijerink, and Wokje Abrahamse. "Factors Influencing the Acceptability of Energy Policies: A Test of VBN Theory." Journal of Environmental Psychology 25, no. 4 (December 2005): 415–25. https://doi.org/10.1016/j.jenvp.2005.08.003.	6
Social Norms	SN	IV	Adoption of a behavior because one believes that others like her or the community practice the behavior	Adaptation of Shulruf, B., Hattie, J., & Dixon, R. (2007). Development of a new measurement tool for individualism and collectivism. Journal of Psychoeducational Assessment, 25(4), 385-401.	4
Perceived Economic Inequality	EI	IV	Perception of unequal distribution of income and opportunity between individuals	PEIEL scale from Juan Diego García-Castro, Guillermo B. Willis & Rosa Rodríguez-Bailón (2019) I know people who can and who cannot: A measure of the perception of economic inequality in everyday life, The Social Science Journal, 56:4, 599-608, DOI: 10.1016/j.soscij.2018.09.008	5
Civic Engagement	CE	IV	Participating in individual and collective actions addressing issues of public and social concern	Doolittle, A., & Faul, A. C. (2013). Civic Engagement Scale: A Validation Study. SAGE Open, 3(3). https://doi.org/10.1177/2158244013495542	4
Trust in Government	TG	IV	Confidence of the citizens in the actions of government to do what is right	Grimmelikhuijsen, S., & Knies, E. (2017). Validating a scale for citizen trust in government organizations. International Review of Administrative Sciences, 83(3), 583–601. https://doi.org/10.1177/0020852315585950	9
Perceived Usefulness of Broadband	PU	IV	The perception that a technology or service such as Broadband can improve the life and economic opportunity of an individual	Adapted from Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. MIS Quarterly, 13(3), 319. https://doi.org/10.2307/24900	4
Locus of Control	LOC	IV	Locus of control and political efficacy - explores how an individual's belief in their ability to influence life events shapes their engagement in the political arena	Adopted from Reid, D., & Ware, E. E. (1974). Multidimensionality of internal versus external control: Addition of a third dimension and non-distinction of self versus others. Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement, 6(2), 131.	11
Income level	IL	CV		Ratio	1
Employment status	EST	CV	Currently employed (Y/N)	Nominal	1
Age	A	CV	>18	Ordinal	1
Gender	G	CV		Nominal	1
Race	R	CV		Nominal	1
Household Type	HT	CV	Family\non-family	Nominal	1
Education Level	EL	CV		Ordinal	1
Broadband Internet Availability	BA	CV	Broadband available where you live (Y/N)	Nominal	1
Are you a resident of the US	CoUS	SV	Screening question	Nominal	1
What is your zip code	ZIP	SV	Screening question	Ordinal	1
					55

APENDIX B: QUESTIONAIRE

Likert scale (Strongly Agree – Strongly Disagree, 1 to 7)

no	Abbr.	Question	Source
1	Screening	Are you a resident of the US?	Demographic
2	Screening	What is your zip code?	Demographic
3	CV1	What is your age?	Demographic
4	CV2	Broadband refers to high-speed internet access that allows for the simultaneous transmission of multiple signals and types of data, such as video, voice, and text at the same time, delivered over networks and technologies that can be wireline (such as fiber optic, cable, DSL, etc.), wireless, or satellite. Do you have Broadband high-speed internet at your place of residency?	Demographic
5	CV3	What is your gender?	Demographic
6	CV4	What is your race?	Demographic
7	CV5	Please indicate your household type.	Demographic
8	CV6	Please indicate your education level.	Demographic
9	CV7	Please indicate your income level.	Demographic
10	CV8	Are you currently employed?	Demographic
11	CV9	Please indicate your political views	Demographic
12	PV1	My own interests always take priority over those of others.	Adaptation of VBN (Value, Belief, Norm) model - misc. works such as: Steg, Linda, Like Dreijerink, and Wokje Abrahamse. "Factors Influencing the Acceptability of Energy Policies: A Test of VBN Theory." Journal of Environmental Psychology 25, no. 4 (December 2005): 415–25. https://doi.org/10.1016/j.jenvp.2005.08.003
13	PV2	I am not affected by bad things that happen to others.	
14	PV3	I don't feel shame or remorse if I only look out for my own interests.	
15	PV4	Everyone has a responsibility to be helpful to others.	
16	PV5	I feel good when I help those in need.	

17	PV6	I would act to help other even it's harmful to me.	
18	SN1	If my friends support of Broadband high-speed internet taxation, I feel I also must do the same.	Adaptation of Shulruf, B., Hattie, J., & Dixon, R. (2007). Development of a new measurement tool for individualism and collectivism. Journal of Psychoeducational Assessment, 25(4), 385-401.
19	SN2	I am influenced by the opinions of my friends and peers regarding Broadband high-speed internet taxation.	
20	SN3	I would feel excluded if I did not agree with my friends on Broadband high-speed internet taxation.	
21	SN4	My community and friends have different values that others around us.	
22	EI1	Among the people I surround myself with, there are some people who can afford access to a better health service than others.	PEIEL scale from Juan Diego García-Castro, Guillermo B. Willis & Rosa Rodríguez-Bailón (2019) I know people who can and who cannot: A measure of the perception of economic inequality in everyday life, The Social Science Journal, 56:4, 599-608, DOI: 10.1016/j.soscij.2018.09.008
23	EI2	Among the people I know, some have bigger and more luxurious homes than others.	
24	EI3	I know both: people who undergo many problems to pay for their home expenses (rents, mortgages) and others who do not.	
25	EI4	Among the people I know some cannot afford unforeseen expenses and others cope with them without any difficulty.	
26	EI5	I know people who have to work more than others to earn the same amount of money.	
27	CE1	I believe I should make a difference in my community.	Doolittle, A., & Faul, A. C. (2013). Civic Engagement Scale: A Validation Study. SAGE Open, 3(3). https://doi.org/10.1177/2158244013495542
28	CE2	I am committed to serve in my community.	
29	CE3	I believe that all citizens have a responsibility to their community.	

30	CE4	I believe that it is important to volunteer in my community.	
31	TG1	I believe the government always acts in the interest of the well-being of the citizens.	Grimmelikhuijsen, S., & Knies, E. (2017). Validating a scale for citizen trust in government organizations. International Review of Administrative Sciences, 83(3), 583–601. https://doi.org/10.1177/0020852315585950
32	TG2	Government regulations are implemented for the common good.	
33	TG3	I believe the government is helping citizens improve their lives.	
34	TG4	I believe the government possesses the highest level of skills and expertise in managing complex challenges and delivering effective solutions.	
35	TG5	I trust that the government effectively and efficiently handles public affairs.	
36	TG6	I believe the government is proficient at monitoring and managing policy implementation of policies.	
37	TG7	I believe the government keeps its commitments.	
38	TG8	I believe the government has sufficient checks and controls to protect the interests of the citizens.	
39	TG9	I believe that the government acts in accordance with the values of society.	
40	PU1	Broadband high-speed internet enables me to accomplish my tasks more quickly.	Adapted from Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. MIS Quarterly, 13(3), 319. https://doi.org/10.2307/24900
41	PU2	Having Broadband high-speed internet makes it easier for me to carry out my tasks.	
42	PU3	I find having Broadband high-speed internet useful.	
43	PU4	Overall, I find using Broadband high-speed internet to be advantageous.	

44	LOC1	There are institutions in our society that have considerable control over me.	Adopted from Reid, D., & Ware, E. E. (1974). Multidimensionality of internal versus external control: Addition of a third dimension and non-distinction of self-versus others. Canadian Journal of Behavioral Science/Revue canadienne des sciences du comportement, 6(2), 131.
45	LOC2	When I look at it carefully, I realize it is impossible for me to have any really important influence over what politicians do.	
46	LOC3	As far as the affairs of our country are concerned, most people are the victims of forces they do not control and frequently do not even understand.	
47	LOC4	It is difficult for people to have much control over the things politicians do in office.	
48	LOC5	It is easy for me to avoid and function independently of any social forces that may attempt to have control over me.	
49	LOC6	My behavior is frequently determined by other influential people	
50	LOC7	This world is run by a few people in power and there is not much the little guy can do about it.	
51	LOC8	Even when there was nothing forcing me, I have found that I will sometimes do things I really did not want to do.	
52	LOC9	I always feel in control of what I am doing.	
53	INV1	In the future, it is likely that I will vote for taxation intended for Rural Broadband infrastructure investment.	Adapted from Chen, Y., & Barnes, S. (2007). Initial trust and online buyer behavior. Industrial Management & Data Systems, 107(1), 21–36. https://doi.org/10.1108/02635570710719034
54	INV2	I would recommend to others to vote for taxation intended for Rural Broadband infrastructure investment.	
55	SD1	Would you smile at people every time you meet them?	Haghighat, R. (2007). The development of the brief social desirability scale (BSDS). Europe's Journal of Psychology, 3(4), 10–5964.
56	SD2	Do you always practice what you preach to people?	

57	SD3	If you say to people that you will do something, do you always keep your promise no matter how Inconvenient it might be?	
58	SD4	Would you ever lie to people?	

APENDIX C: MGA TABLES

Rural vs. Suburban area of habitation MICOM analysis

MICOM - Step 2

	Original correlation	Correlation permutation...	5.0%	Permutation p value
CE	0.998	1.000	0.999	0.017
EI	0.985	0.899	0.470	0.714
INV	1.000	1.000	1.000	0.659
LOC	0.998	0.836	-0.332	0.689
PU	1.000	0.929	0.603	0.881
PV	0.999	0.993	0.981	0.959
SN	1.000	0.999	0.998	0.699
TG	0.993	0.998	0.994	0.027

MICOM - Step 3a (mean)

	Original difference	Permutation mean diffe...	2.5%	97.5%	Permutation p value
CE	-0.208	0.007	-0.221	0.244	0.088
EI	-0.004	0.001	-0.227	0.238	0.981
INV	-0.089	-0.003	-0.246	0.247	0.460
LOC	0.023	0.001	-0.239	0.245	0.834
PU	-0.027	0.003	-0.239	0.238	0.824
PV	-0.045	0.003	-0.245	0.233	0.723
SN	-0.076	0.002	-0.233	0.232	0.546
TG	-0.244	-0.003	-0.254	0.221	0.041

MICOM - Step 3b (variance)

	Original difference	Permutation mean diffe...	2.5%	97.5%	Permutation p value
CE	0.069	-0.001	-0.371	0.354	0.692
EI	0.190	-0.002	-0.456	0.492	0.446
INV	0.135	-0.001	-0.239	0.247	0.287
LOC	0.155	-0.003	-0.374	0.325	0.411
PU	0.363	0.008	-0.409	0.446	0.110
PV	0.535	-0.001	-0.420	0.457	0.012
SN	0.095	-0.010	-0.344	0.314	0.574
TG	0.382	-0.004	-0.272	0.287	0.010

Urban vs. Suburban area of habitation MICOM analysis

MICOM - Step 2

	Original correlation	Correlation permutation...	5.0%	Permutation p value
CE	1.000	1.000	0.999	0.494
EI	0.902	0.824	0.186	0.430
INV	1.000	1.000	1.000	0.635
LOC	0.997	0.871	0.374	0.867
PU	0.996	0.935	0.628	0.682
PV	0.993	0.988	0.962	0.583
SN	1.000	1.000	0.999	0.767
TG	0.998	0.999	0.997	0.132

MICOM - Step 3a (mean)

	Original difference	Permutation mean diffe...	2.5%	97.5%	Permutation p value
CE	-0.259	0.002	-0.236	0.234	0.034
EI	-0.075	0.005	-0.241	0.245	0.556
INV	-0.164	-0.004	-0.255	0.234	0.180
LOC	-0.045	-0.003	-0.252	0.244	0.703
PU	-0.000	0.000	-0.234	0.237	0.994
PV	-0.120	0.002	-0.243	0.233	0.320
SN	-0.269	0.001	-0.230	0.236	0.020
TG	-0.271	0.001	-0.248	0.241	0.023

MICOM - Step 3b (variance)

	Original difference	Permutation mean diffe...	2.5%	97.5%	Permutation p value
CE	0.098	-0.007	-0.354	0.368	0.609
EI	0.018	0.011	-0.400	0.429	0.938
INV	-0.027	-0.004	-0.269	0.253	0.848
LOC	0.017	-0.012	-0.376	0.363	0.931
PU	0.119	0.006	-0.381	0.387	0.561
PV	0.369	-0.007	-0.395	0.382	0.065
SN	0.228	-0.006	-0.266	0.249	0.082
TG	0.361	-0.006	-0.279	0.272	0.004

Conservative vs. Liberal views MICOM analysis

MICOM - Step 2

	Original correlation	Correlation permutation...	5.0%	Permutation p value
CE	1.000	1.000	0.999	0.738
EI	0.942	0.873	0.318	0.440
INV	1.000	1.000	1.000	0.172
LOC	0.970	0.770	0.062	0.620
PU	1.000	0.922	0.459	0.718
PV	0.991	0.994	0.983	0.189
SN	0.999	1.000	0.999	0.063
TG	0.999	0.999	0.997	0.168

MICOM - Step 3a (mean)

	Original difference	Permutation mean diffe...	2.5%	97.5%	Permutation p value
CE	0.237	0.003	-0.216	0.226	0.041
EI	0.322	0.002	-0.226	0.247	0.006
INV	0.501	-0.001	-0.221	0.243	0.000
LOC	0.233	0.002	-0.228	0.217	0.042
PU	0.184	-0.002	-0.218	0.234	0.109
PV	0.350	0.005	-0.201	0.224	0.000
SN	-0.023	-0.003	-0.236	0.231	0.850
TG	-0.088	0.005	-0.233	0.225	0.435

MICOM - Step 3b (variance)

	Original difference	Permutation mean diffe...	2.5%	97.5%	Permutation p value
CE	0.276	-0.005	-0.379	0.336	0.140
EI	0.133	-0.008	-0.460	0.441	0.577
INV	0.294	-0.010	-0.248	0.221	0.015
LOC	-0.074	-0.002	-0.356	0.327	0.672
PU	0.102	-0.011	-0.422	0.435	0.685
PV	0.219	0.004	-0.387	0.399	0.276
SN	0.260	-0.007	-0.301	0.246	0.054
TG	0.180	-0.008	-0.257	0.248	0.173

Conservative vs. Moderate views MICOM analysis

MICOM - Step 2

	Original correlation	Correlation permutation...	5.0%	Permutation p value
CE	0.999	1.000	0.999	0.295
EI	0.924	0.730	0.117	0.646
INV	1.000	1.000	1.000	0.378
LOC	0.737	0.637	-0.040	0.510
PU	1.000	0.961	0.782	0.925
PV	0.965	0.981	0.957	0.079
SN	0.997	1.000	0.999	0.000
TG	0.997	0.999	0.998	0.009

MICOM - Step 3a (mean)

	Original difference	Permutation mean diffe...	2.5%	97.5%	Permutation p value
CE	0.099	0.001	-0.252	0.272	0.446
EI	-0.032	0.000	-0.262	0.256	0.804
INV	0.240	0.003	-0.237	0.276	0.063
LOC	-0.111	-0.001	-0.256	0.262	0.381
PU	-0.244	0.009	-0.269	0.277	0.073
PV	0.024	0.003	-0.258	0.254	0.868
SN	-0.061	0.003	-0.254	0.260	0.625
TG	-0.162	0.001	-0.261	0.259	0.248

MICOM - Step 3b (variance)

	Original difference	Permutation mean diffe...	2.5%	97.5%	Permutation p value
CE	0.292	0.001	-0.385	0.405	0.136
EI	-0.020	0.010	-0.419	0.432	0.929
INV	0.235	0.003	-0.237	0.266	0.073
LOC	-0.143	0.010	-0.359	0.373	0.457
PU	-0.050	0.019	-0.391	0.462	0.809
PV	0.164	0.014	-0.434	0.492	0.482
SN	0.314	0.006	-0.244	0.278	0.020
TG	0.277	0.010	-0.279	0.303	0.067

Liberal vs. Moderate views MICOM analysis

MICOM - Step 2

	Original correlation	Correlation permutation...	5.0%	Permutation p value
CE	1.000	0.999	0.997	0.699
EI	0.973	0.895	0.466	0.585
INV	1.000	1.000	1.000	0.192
LOC	0.565	0.556	-0.216	0.422
PU	1.000	0.990	0.990	0.917
PV	0.990	0.992	0.975	0.252
SN	0.999	0.998	0.995	0.417
TG	0.999	0.985	0.956	0.874

MICOM - Step 3a (mean)

	Original difference	Permutation mean diffe...	2.5%	97.5%	Permutation p value
CE	-0.147	0.003	-0.253	0.259	0.243
EI	-0.391	0.000	-0.240	0.256	0.004
INV	-0.279	0.006	-0.235	0.248	0.026
LOC	-0.212	0.008	-0.247	0.254	0.094
PU	-0.424	0.003	-0.253	0.255	0.001
PV	-0.340	0.002	-0.246	0.251	0.006
SN	-0.048	0.000	-0.246	0.234	0.714
TG	-0.076	-0.001	-0.249	0.255	0.522

MICOM - Step 3b (variance)

	Original difference	Permutation mean diffe...	2.5%	97.5%	Permutation p value
CE	0.014	0.005	-0.360	0.387	0.941
EI	-0.164	0.027	-0.409	0.469	0.482
INV	-0.058	0.014	-0.285	0.351	0.713
LOC	0.074	0.005	-0.345	0.350	0.706
PU	-0.154	0.005	-0.499	0.511	0.571
PV	-0.080	0.014	-0.406	0.435	0.723
SN	0.054	0.017	-0.322	0.379	0.770
TG	0.096	0.005	-0.293	0.321	0.534

Education level up to Associates degree vs. Bachelors and above MICOM analysis

MICOM - Step 2				
	Original correlation	Correlation permutation...	5.0%	Permutation p value
CE	1.000	1.000	0.999	0.769
EI	0.941	0.921	0.634	0.299
INV	1.000	1.000	1.000	0.870
LOC	0.957	0.735	0.120	0.644
PU	0.735	0.939	0.611	0.068
PV	0.998	0.996	0.988	0.694
SN	1.000	1.000	0.999	0.460
TG	0.999	0.999	0.998	0.319

MICOM - Step 3a (mean)					
	Original difference	Permutation mean diffe...	2.5%	97.5%	Permutation p value
CE	-0.012	-0.001	-0.182	0.192	0.897
EI	-0.165	-0.001	-0.191	0.187	0.097
INV	0.005	0.000	-0.196	0.205	0.952
LOC	0.007	0.000	-0.193	0.201	0.938
PU	-0.058	-0.002	-0.200	0.181	0.544
PV	0.098	-0.001	-0.194	0.192	0.311
SN	0.178	-0.001	-0.187	0.195	0.077
TG	0.079	-0.002	-0.190	0.193	0.403

MICOM - Step 3b (variance)					
	Original difference	Permutation mean diffe...	2.5%	97.5%	Permutation p value
CE	0.016	-0.001	-0.287	0.273	0.913
EI	-0.115	0.003	-0.367	0.336	0.523
INV	0.180	-0.004	-0.208	0.210	0.088
LOC	0.036	0.007	-0.290	0.299	0.818
PU	0.037	-0.003	-0.352	0.351	0.841
PV	0.183	-0.006	-0.342	0.349	0.270
SN	-0.113	0.002	-0.219	0.242	0.377
TG	-0.112	-0.002	-0.212	0.220	0.282

Lower income bracket vs. Upper Income bracket MICOM analysis

MICOM - Step 2

	Original correlation	Correlation permutation...	5.0%	Permutation p value
CE	0.999	1.000	0.999	0.244
EI	0.996	0.872	0.351	0.946
INV	1.000	1.000	1.000	0.800
LOC	1.000	0.736	0.110	0.987
PU	0.997	0.943	0.642	0.645
PV	1.000	0.991	0.975	0.992
SN	0.999	1.000	0.999	0.291
TG	0.999	0.999	0.997	0.463

MICOM - Step 3a (mean)

	Original difference	Permutation mean diffe...	2.5%	97.5%	Permutation p value
CE	0.273	-0.003	-0.242	0.224	0.027
EI	-0.351	0.002	-0.249	0.254	0.006
INV	0.005	-0.004	-0.258	0.232	0.977
LOC	-0.216	-0.003	-0.254	0.239	0.087
PU	-0.061	0.000	-0.276	0.254	0.634
PV	0.123	0.004	-0.233	0.247	0.328
SN	0.084	-0.006	-0.245	0.229	0.506
TG	0.327	0.000	-0.253	0.234	0.006

MICOM - Step 3b (variance)

	Original difference	Permutation mean diffe...	2.5%	97.5%	Permutation p value
CE	0.043	0.002	-0.387	0.388	0.827
EI	-0.330	-0.007	-0.430	0.447	0.158
INV	0.048	0.003	-0.275	0.257	0.722
LOC	-0.010	0.004	-0.381	0.412	0.961
PU	-0.067	-0.003	-0.510	0.491	0.795
PV	0.543	0.007	-0.428	0.426	0.009
SN	-0.072	0.013	-0.276	0.314	0.631
TG	-0.230	0.009	-0.265	0.306	0.113

Lower income bracket vs. Middle Income bracket MICOM analysis

MICOM - Step 2

	Original correlation	Correlation permutation...	5.0%	Permutation p value
CE	0.999	0.999	0.998	0.335
EI	0.973	0.854	0.363	0.757
INV	1.000	1.000	1.000	0.933
LOC	0.863	0.760	-0.110	0.366
PU	0.909	0.965	0.829	0.078
PV	0.999	0.995	0.985	0.835
SN	1.000	0.999	0.998	0.580
TG	0.998	0.999	0.996	0.217

MICOM - Step 3a (mean)

	Original difference	Permutation mean diffe...	2.5%	97.5%	Permutation p value
CE	0.110	0.002	-0.240	0.227	0.335
EI	-0.247	-0.003	-0.243	0.213	0.036
INV	0.040	-0.001	-0.225	0.209	0.709
LOC	-0.164	0.003	-0.227	0.230	0.174
PU	0.060	0.001	-0.237	0.238	0.594
PV	0.091	0.004	-0.223	0.238	0.436
SN	0.024	0.004	-0.213	0.207	0.818
TG	0.072	0.001	-0.219	0.240	0.506

MICOM - Step 3b (variance)

	Original difference	Permutation mean diffe...	2.5%	97.5%	Permutation p value
CE	0.029	-0.000	-0.361	0.375	0.865
EI	-0.194	-0.010	-0.421	0.387	0.352
INV	-0.079	-0.002	-0.245	0.236	0.522
LOC	-0.008	0.002	-0.321	0.315	0.964
PU	0.186	-0.004	-0.450	0.404	0.388
PV	0.249	0.006	-0.381	0.408	0.224
SN	-0.124	-0.005	-0.269	0.233	0.333
TG	-0.097	-0.003	-0.260	0.247	0.467

Upper income bracket vs. Middle Income bracket MICOM analysis

MICOM - Step 2

	Original correlation	Correlation permutation...	5.0%	Permutation p value
CE	1.000	1.000	0.999	0.704
EI	0.990	0.891	0.419	0.830
INV	1.000	1.000	1.000	0.950
LOC	0.851	0.743	0.080	0.455
PU	0.937	0.878	0.378	0.294
PV	0.997	0.992	0.975	0.756
SN	1.000	1.000	0.999	0.774
TG	1.000	0.998	0.995	0.789

MICOM - Step 3a (mean)

	Original difference	Permutation mean diffe...	2.5%	97.5%	Permutation p value
CE	-0.163	-0.003	-0.248	0.236	0.187
EI	0.107	0.006	-0.234	0.259	0.422
INV	0.035	-0.002	-0.244	0.233	0.787
LOC	0.008	0.002	-0.252	0.251	0.946
PU	-0.022	0.003	-0.224	0.273	0.854
PV	-0.028	0.004	-0.242	0.251	0.826
SN	-0.058	-0.002	-0.243	0.231	0.643
TG	-0.251	-0.002	-0.245	0.239	0.042

MICOM - Step 3b (variance)

	Original difference	Permutation mean diffe...	2.5%	97.5%	Permutation p value
CE	-0.020	-0.013	-0.382	0.339	0.934
EI	0.158	0.004	-0.438	0.477	0.494
INV	-0.127	-0.008	-0.275	0.248	0.342
LOC	-0.078	-0.003	-0.383	0.381	0.691
PU	-0.132	-0.011	-0.748	0.760	0.728
PV	-0.294	-0.010	-0.409	0.401	0.186
SN	-0.052	-0.001	-0.331	0.302	0.735
TG	0.126	-0.005	-0.297	0.265	0.387

VITA

KOSTAS STAMATIADIS

Senior telecommunications and IT professional with 30 years' experience in Project Management and Telecom Deployment; engaging leader of cross-functional teams with a track record of significant accomplishments.

Experience

2026 - Doctor of Business Administration, Florida International University

2025 - Harvard BOK Higher Education Teaching Certificate

2022 - Six Sigma Green Belt, SSGI # 73270625

2019 - ongoing - IT Project Manager, Dominion Energy

2017-2019, AT&T, Program Manager

2016-2017, Regional Program Manager, Calix

2008-2016, Program Manager, AT&T Mobility

2008, Project Management Professional PMP® #484367

2007, Project Manager, American Tower Corporation

2003-2006, Market Deployment Manager, True Position, Inc.

2003, Co-founded Voiceglobe USA, Inc.

2001-2002, Management Consultant, KKINC

1994-2000, Miscalleneous telecom management roles in the US, and Europe

1993-1994, Doctoral studies, Economic and Regional Development Panteion University

1991-1993, Master of Business Administration, California State University, Sacramento

1989-1991, Lieutenant (CO1), Greek Army, Infantry

1984-1990, B.A. Public Administration, Panteion University, Greece