



SURVEY BASED ASSESSMENT PUBLIC ACCEPTANCE OF RENEWABLE ENERGY FOR A GREEN UZBEKISTAN. A THEORY OF PLANNED BEHAVIOR VALIDATION.

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Received: 24 th October 2025 Accepted: 20 th November 2025	<p>With environmental issues deteriorating and the pursuit for sustainable development continuing, Uzbekistan began to experience a definite direction towards an economically more sustainably powered economy. While the government has tried hard and put policy strategies in place for using solar, wind, and other renewable technologies, success of such programs is heavily bottlenecked by the trend of the common people to accept and become part of these programs. The purpose of the present study is to test the public acceptability of Uzbekistan's renewable energy projects using the Theory of Planned Behavior (TPB), which is a prominent theory in social psychology that predicts people's behavior intention by applying the critical determinants of attitude, subjective reference group approval, and perceived control of behavior. The study employs the quantitative approach assisted by a self-administered survey questionnaire to gather the attitudes of various populations from rural and urban settings with a sample size of 500 participants across various districts of Uzbekistan. The survey questionnaire had to be framed within the context of Uzbekistan in the form of culture and social norms alongside incorporating the constructs of TPB and demographic data. By means of IBM SPSS, a number of statistical analysis with descriptive statistics, correlation and multiple regression analysis were conducted for the aim of examination of interrelation between the variables as well as testing the TPB framework adequateness. The findings confirm the theory of planned behavior validity as a suitable model explaining the intention of public behavior towards renewable energy sources in Uzbekistan. TBP finds attitude towards renewable energies and control of behavior to predict strong intention to adopt or support the technologies, whereas social norm predicts moderately. Environmental concern, institutions' credibility, perceived benefits, economic rewards and demographic traits also have very strong mediation influences on public opinion and intentions. This study contributes to the literature, in the first place, by the explanation of the determinants of behavior within the framework of the developing country, and this study also provides policy recommendations to policy makers and private sector NGOs in which they recommend offering targeted public campaigns, public education approaches promoting access to green technologies, continue the institutional communication to demographic groups with the lower level of trust. The study offers arguments indicating how Uzbekistan can strategically shift its energy policy and transition to clean green energy systems.</p>

Keywords: Renewable energy, public acceptance, Theory of Planned Behavior (TPB), Uzbekistan, behavioral intention, environmental awareness, sustainable development, green energy transition, quantitative research, statistical analysis, demographic influence, policy framework, perceived behavioral control, social norms, attitude toward renewable energy.

CHAPTER 1: INTRODUCTION

1.1 Background: The Push for Renewable Energy in Uzbekistan.

Uzbekistan considered as landlocked nation in Central Asia historically dependent on natural resources, including fossil fuels like natural gas, oil, coal to meet its energy demands. These national sources have played significant role in

making the country's industrial revolution and domestic needs. Looking back, it is noticeable that the reliance on fossil fuels has offered security in energy, and stability in economic. However, due to digging and burning of these resources which results in greenhouse gas emission and ultimately result in damage to environment. As global energy markets shift toward more environmentally friendly options, Uzbekistan is coming under increasing pressure to modernize and adapt its energy infrastructure in line with sustainable principles. But in the last ten years, growing worries about air pollution, climate change, and environmental degradation have forced a review of energy regulations. Uzbekistan's greenhouse gas (GHG) emissions, which exacerbate global warming and endanger public health through air and water pollution, are largely attributable to the burning of fossil fuels. In addition to these detrimental impacts on the environment, it is becoming more and more obvious that an excessive reliance on fossil fuels leaves the economy vulnerable to changes in the price of energy on a worldwide scale. Initiatives to provide long-term economic resilience and lower climate change risks have been spurred by this. By providing finance for pilot projects, policy proposals, and technical assistance, these organizations have played a crucial role in laying the foundation for the country's renewable energy sector. The world's confidence in Uzbekistan's capacity to spearhead the region's shift to sustainable energy is demonstrated by their participation. The Concept for Ensuring Electricity Supply to the Population and the Economy of the Republic of Uzbekistan for 2020–2030, a long-term strategy announced by the government, lays out specific goals for raising the proportion of renewable energy in the country's energy mix. Notably, by 2030, the nation wants to produce at least 25% of its electricity from renewable sources, namely wind and solar. The proposal includes comprehensive frameworks for expanding wind and solar infrastructure, accelerating regulatory procedures, and encouraging private sector investment through public-private partnerships and incentives. It also outlines efforts to modernize the nation's grid, which is necessary in order to integrate variable renewable energy sources into the system. The degree of public engagement and support is ultimately what determines the success of these efforts, even with the increased governmental and infrastructure backing for the deployment of renewable energy. Without society involvement, a "Green Uzbekistan" concept cannot be fully achieved. Changes in lifestyle, public funding for new technology (such rooftop solar panels), and a general awareness of the financial and environmental advantages of renewable energy sources are all necessary for the shift to renewable energy. Lack of awareness, disinformation, or public opposition may act as obstacles to broad adoption. Therefore, it is imperative that policymakers begin community-based projects, incentive schemes, and educational activities that target both urban and rural people. These programs have the potential to debunk myths, demythologize renewable energy sources, and promote a society that is ecologically conscious and energy savvy. Therefore, it is crucial and timely to look into how Uzbek people view and embrace renewable energy technologies. In addition to these challenges, socioeconomic and regional differences within Uzbekistan might affect the population's willingness and capacity to adopt renewable technologies.

Urban areas may have higher awareness and adoption rates than rural ones because of their better infrastructure and information accessibility. Numerous factors, such as an individual's income, education, and work status, might impact their opinions and perceived behavioral control about the use of renewable energy.

Therefore, in addition to national sentiments, it is important to look at demographic characteristics that affect acceptability. Furthermore, the Theory of Planned Behavior (TPB) offers a solid theoretical framework for examining public acceptability. According to TPB, a person's conduct is influenced by their attitudes about the activity, perceived behavioral control, and subjective norms. Regarding Uzbekistan's adoption of renewable energy, TPB can be utilized to identify the social and psychological factors that most correctly predict intention and conduct.

This information can be utilized to develop targeted awareness campaigns and policy strategies that consider the limitations and viewpoints of the broader public. Uzbekistan's ambitious renewable energy goals have implications for the entire world. Uzbekistan's accomplishments could serve as a model for other developing nations in the region, given its strategic location in Central Asia and plenty of solar potential. A successful rollout of renewable energy might attract foreign direct investment, foster technological innovation, and support long-term economic diversification. Therefore, public support for renewable energy is not only a domestic issue but also a crucial part of Uzbekistan's broader sustainable development strategy.

1.2 Problem Statement: The Need to Understand Public Acceptance

These facts can be utilized to develop targeted awareness campaigns and policy measures considering the needs and views of the common people. Uzbekistan's vision for renewable energy is ambitious in its global consequences. Uzbekistan's success can serve as a model for other developing nations in the region, with its strategic location in Central Asia and abundant solar resources. A successful implementation of renewable energy would be able to attract foreign direct investment, fuel technological progress, and facilitate long-term economic diversification. Public favor for renewable energy is therefore not only a local issue but also an important element of Uzbekistan's general strategy for sustainable development. TPB can be used to forecast future actions and give a comprehensive understanding of the factors impacting public acceptability in the context of Uzbekistan's renewable energy sector. This study addresses a major research gap by utilizing a TPB-based paradigm to evaluate public awareness, attitudes, perceived norms, behavioral control, intentions, and self-reported behaviors regarding renewable energy in Uzbekistan. To boost public support and involvement in the nation's green energy revolution, authorities will be able to create more targeted and effective policies. Government and donor-funded projects have mostly concentrated on the supply side, like constructing wind and solar farms, but the human side of renewable energy, or how people's psychological, cultural, and economic circumstances influence their energy choices, has gotten relatively little attention. If these human variables are overlooked, even the greatest technological innovation can fall

short of its full potential. Moreover, the pace and effectiveness of Uzbekistan's transition to decarbonization will also be significantly influenced by the behavioral reactions of its citizens. For instance, just as much as incentives and expenses play a part in a household's decision to install solar panels, purchase energy-efficient equipment, or change their energy-use patterns, so can personal values and social influence. Therefore, rather than being a scientific endeavor, determining the psychological barriers and facilitators is a policy imperative.

The government's capacity to create communication plans that appeal to the Uzbek people is further hampered by the paucity of localized research. Numerous awareness efforts now in use rely on general, top-down message that might not adequately address regional issues, cultural norms, or misunderstandings. By addressing this gap, the current study can help guide evidence-based, culturally appropriate public outreach initiatives that promote behavior change in addition to awareness-raising. In conclusion, this study will make a theoretical and practical contribution: theoretically, by confirming the TPB framework in a novel sociocultural context, and practically, by producing useful information for stakeholders aiming to encourage sustainable energy practices among Uzbek residents.

1.3 Research Questions

To comprehensively address the issue of public acceptance, the study is guided by one overarching question and several sub-questions: Primary Research Question. To what extent does the Theory of Planned Behavior (TPB) explain public acceptance of renewable energy in Uzbekistan? Specific Research Questions 1. What are the levels of public awareness and knowledge about renewable energy in Uzbekistan? 2. What are the public's attitudes towards renewable energy (e.g., perceived benefits, risks, reliability)? 3. What subjective norms influence public acceptance of renewable energy (e.g., social pressure from family, friends, community, and government)? 4. What is the perceived behavioral control regarding renewable energy adoption (e.g., affordability, accessibility, and technical ease)? 5. To what extent do these TPB factors (attitude, subjective norms, and perceived behavioral control) predict the intention to support renewable energy? 6. Does behavioral intention translate into actual stated support or willingness to adopt renewable energy practices in Uzbekistan?

1.4 Objectives of the Study

Primary Objective: To validate the applicability of the Theory of Planned Behavior (TPB) in predicting public acceptance of renewable energy in Uzbekistan. To assess the level of public awareness and knowledge concerning renewable energy technologies and their benefits. To evaluate public attitudes (positive and negative) towards adopting renewable energy sources. To identify subjective norms influencing decisions related to renewable energy adoption. To analyze perceived behavioral control factors that facilitate or hinder renewable energy use. To determine the predictive power of attitudes, subjective norms, and perceived behavioral control on intention to support renewable energy. To explore whether intention effectively translates into stated behavioral support or action regarding renewable energy in the Uzbek context.

1.5 Significance of the Study

This research is significant on both theoretical and practical grounds. Theoretical Significance: By applying the Theory of Planned Behavior to the relatively unexplored setting of Uzbekistan, this study contributes to the growing body of literature on environmental psychology, behavioral economics, and renewable energy policy. The findings provide empirical evidence on how well TPB can predict environmental behavior in a Central Asian country undergoing economic and political transformation. Moreover, the study offers insight into the universality or cultural specificity of TPB constructs. It enables a better understanding of whether commonly used behavioral theories are transferable across different socio-political environments or if they need contextual adaptation. Practical Significance: For policymakers, energy planners, and development organizations, the findings serve as a diagnostic tool for identifying key enablers and barriers to public support for renewable energy. The data can help shape more inclusive, culturally sensitive policies and communication strategies that resonate with public values and concerns. Moreover, it supports the design of community-based renewable energy programs and education campaigns to foster environmental stewardship and behavioral change at the grassroots level. The outcomes of the study are also beneficial for investors and international partners involved in renewable energy development, as understanding public perception reduces the risk of social opposition and enhances the feasibility of long-term infrastructure projects.

1.6 Scope and Limitations

This study primarily focuses on the general adult population of Uzbekistan, drawing data from survey responses collected across various regions. The analysis is based on cross-sectional survey data, which limits the ability to track behavioral changes over time. Additionally, the reliance on self-reported measures introduces potential biases such as social desirability and inaccurate recall. The study is also limited in terms of technological scope, primarily assessing public perception toward solar and wind energy. Other renewable sources like hydro and biogas are not extensively covered due to their relatively lower prevalence and awareness in Uzbekistan. Furthermore, the study does not differentiate between urban and rural respondents in depth, which could be explored further in future research. Despite these limitations, the study provides valuable initial insights and lays the groundwork for more comprehensive and longitudinal investigations into public attitudes and behaviors toward renewable energy.

1.7 Definition of Key Terms

Renewable Energy: Energy produced with little harm to the environment and derived from natural resources like sunlight, wind, and water that are restored on a human timeline.

Public Acceptance: The extent to which the general public is in favor of or prepared to accept new energy-related infrastructure, policies, or technology.

Green Uzbekistan: A national development vision that supports lower carbon emissions, integration of renewable energy, and sustainable environmental regulations.

Theory of Planned Behavior (TPB): a national development strategy that encourages the use of renewable energy, reduced carbon emissions, and environmentally friendly laws.

Attitude: A person's positive or negative evaluation of performing a particular behavior, such as supporting or adopting renewable energy.

Subjective Norms: The perceived social pressure to engage or not engage in a particular behavior, based on the influence of peers, family, or broader societal expectations.

Perceived Behavioral Control: An individual's perception of the ease or difficulty of performing the behavior in question, influenced by access to resources, knowledge, or external constraints.

Intention: The motivating element that measures the amount of work a person is prepared to put forth in order to carry out the activity.

Behavior: the actual steps that people take, such putting in solar panels, moving to renewable energy sources, or taking part in environmental projects.

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CHAPTER 2: LITERATURE REVIEW

Section 2.1.Theory of Planned Behavior (TPB)

Detailed explanation of the TPB model: constructs (attitude, subjective norm, perceived behavioral control, intention, behavior), interrelationships, and assumptions. The theory of planned behavior (TPB) is a psychological theory that links beliefs to behavior. It has three components attitude, subjective norms and perceived behavioral control that all shape individuals behavioral intentions. It was developed by Icek Ajzen in 1985. The three core components: attitude towards behavior, subjective norms, and perceived behavior control influence the behavior intentions, which are most immediate predictors of actual behavior. The former construct in TPB is attitude toward the behavior. This happens when a person evaluate a particular behavior as favorable or unfavorable. Attitudes are shaped by fundamental behavioral assumption and what a person believes is the outcome of their actions will be and the value they place on this outcomes. For example; if a person believes that doing regular exercise and following diet will lead to weight loss as well as better health and they value being healthy, so they will likely to have a positive attitude towards exercising. The following construct is subjective norms. It refers to the perceived societal expectation and individual feels to perform or not to perform a behavior. This is based on normative influence whether person believes that significant others such as family members, friends, or society as a whole think they should engage in the behavior and the person's motivation to obey with these expectations. If an individual believes that their close friends support environmentally friendly behavior and they care about these opinions, they are more likely to engage in actions like recycling or conserving energy. The final construct is perceived behavioral control (PBC), which is about individuals understanding of their ability to perform that behavior. Unlike the others, PBC responsible for the role of external constraints or resources. It shows what a person believes about things that can help or make it hard to do a behavior, and how much control they feel they have over those things. For example; a person might believe that gym availability in accordance with free time will make easier for them to exercise.

If they feel confidence in mitigating obstacles, their perceived control over the behavior will be high. The intention of the individual, which is the motivating factor that shows how hard people are willing to try, or how much effort they plan to exert, in order to perform the behavior is influenced by these three constructs; attitude toward the behavior, subjective norm, and perceived behavioral control. In general a person's desire to engage in an activity is stronger when their attitude and subjective norm are more positive and their perceived behavioral control is higher. The most direct factor influencing behavior is intention. TPB does concede, nevertheless, that conduct can be directly influenced by perceived behavioral control, especially when people may not have total volitional control. For instance, despite having the best of intentions, someone may be unable to fulfill their goal of attending a university overseas due to a lack of funds or visa complications.

Review previous studies that have used TPB to predict environmental behaviors, specifically in the context of energy and renewable energy acceptance in various countries and cultures. The Theory of Planned Behavior (TPB), proposed by Ajzen (1991), is one of the most widely used psychological models to predict environmentally responsible behavior. TPB posits that behavioral intention, influenced by attitude toward the behavior, subjective norms, and perceived behavioral control, is the primary predictor of actual behavior. Key Studies on Energy-Related Behaviors: Renewable Energy Acceptance. Bang et al. (2000, USA) Studied consumer willingness to pay more for renewable energy using TPB. Findings revealed that attitudes and perceived behavioral control significantly predicted intention, while subjective norms played a lesser role. The next study is on Zografakis et al. (2010, Greece). Investigated public attitudes towards renewable energy sources. Results supported TPB's relevance, highlighting environmental concern as a key predictor integrated into the model. Furthermore, Liu et al. Study in (2020, China) can be good case in point. Extended TPB by adding risk perception and trust in government to predict solar energy adoption. The study found that perceived risk negatively influenced intention, while trust in government strengthened perceived control. Kaiser and Gutscher conducted a study in Switzerland aiming to understand and predict ecological behavior, including behaviors related to energy use, waste reduction, and environmental conservation.

They utilized the Theory of Planned Behavior (TPB) framework to examine which psychological variables most strongly influenced individuals' environmentally responsible behaviors. The study found that among the three TPB predictors,

attitude toward the behavior and perceived behavioral control (PBC) had the strongest influence on behavioral intentions and actual ecological behaviors. Subjective norms (i.e., the perceived social pressure to perform or not perform the behavior) had less predictive power, suggesting that in the Swiss context, individuals' personal evaluations and perceived ease or difficulty of the behavior mattered more than social expectations. Kaiser and Gutscher argued that while TPB is a valuable framework, it may not fully capture the automatic, repetitive nature of many environmental behaviors, such as turning off lights, recycling, or reducing heating usage. These actions often become habits—performed with little conscious deliberation once they are established. A study with Jansson et al. (2010, Multiple Countries). Cross-cultural analysis showed that subjective norms were more influential in collectivist cultures (e.g., China, India) compared to individualist cultures (e.g., USA, UK), where attitude and perceived control were stronger predictors. The TPB has proven excellent predictive potential for energy-related environmental behaviors across diverse situations. However, cultural, social, and policy settings strongly alter the relative strength of TPB components.

In order to fully capture behavioral intentions in the context of renewable energy uptake, many studies support contextual adaptation or extension of TPB. Identify the strengths and weaknesses of using TPB in this context. The theory of planned behavior (TPB) provides numerous strengths when applied to understanding and predicting pro-environmental behaviors. This well-structured model effectively explains and predicts various environmental behaviors such as conservation, activism, and sustainable consumption. Identifying the determinants of environmental actions and eventually target those factors in interventions is considered one of its key strengths. Moreover, TPB allows for the addition of extra variables related to specific behavioral context, making it adaptable to different situations. TPB has represented its predictive utility across environmental context and behaviors. It forecasts intentions and actual behavior related to environmental conservation, education and sustainable consumption. As TPB helps researchers for identifying the key factors influencing pro-environmental behaviors, this data can be used to develop targeted interventions. Apart from that, it is a flexible model that allows researchers to combine extra variables relevant to specific environmental contexts. This flexibility enables the models to be applied to a wide range of environmental behaviors and situations. The knowledge gained from TPB can be applied to the development of successful campaigns to encourage environmentally friendly behavior. Understanding the variables that affect environmental actions allows for the customization of interventions to target particular obstacles and encourage constructive transformations. With a wealth of data proving its predictive ability, TPB is a popular and solid hypothesis in environmental behavior research. Because of this, it is a trustworthy framework for comprehending and dealing with environmental concerns. Weaknesses of TPB. Although the Theory of Planned Behavior has multiple advantages, there are a multitude of shortcomings when applied to different environmental contexts. It deals with individual behaviors and intentions, often ignores the broader social and contextual elements which influence environmental decision-making. Furthermore, The TPB faces challenges with the gap between intention and behavior, as strong intentions do not always lead to actual actions, and it may fall short in fully accounting for the impact of emotions and habitual behaviors.

For example: the first limitation is Excessive stress on individual behavior and intention. ScienceDirect states that the TPB may ignore the larger social and environmental systems that impact pro-environmental behavior because it mainly concentrates on individual attitudes, subjective norms, and perceived behavioral control. The TPB predicts a bond between intentions and actions, however, this relationship is often weak in practice, as to ScienceDirect. Moreover, According to TheoryHub, the TPB mostly ignores the impact of emotions, habits, and even impulsive decision-making in favor of cognitive elements like attitudes and norms. The third weakness is Difficulty in Extrapolating Results. Surveys used in TPB studies are customized to specific populations and contexts, making it difficult to generalize findings to other groups or situations, according to CorpusUL. Cultural norms, societal forces, and local settings can all have an impact on environmental behaviors, and the TPB might not fully account for them. The last weakness is Focusing on Green Actions, Not Environmental Performance: According to ScienceDirect, the TPB is frequently used to research particular green actions, such as recycling or energy conservation, but it might not fully capture the idea of environmental performance, which includes a wide range of behaviors and impacts.

2.2. Public Acceptance of Renewable Energy

The shift towards renewable energy generally acknowledged as crucial for achieving global sustainable goals. However, the effectiveness of renewable energy initiatives is closely tied to public acceptance. Researchers globally have identified number of factors influencing public attitudes towards green energy technologies. This section reviews the worldwide literature on these elements, with a specific focus on developing countries and regions sharing cultural similarities. The study in developed nations such as Germany, USA, UK and emerging countries like China, India, South Africa exhibits that public acceptance of renewable energy is complex, multi-dimensional phenomenon shaped by: Perceived Costs and Benefits: Research continuously demonstrates that when people believe there will be substantial financial, environmental, or personal advantages to renewable energy initiatives, they are more inclined to support them (Devine-Wright, 2005; Wüstenhagen et al., 2007). On the other hand, opposition may be weakened by worries about exorbitant prices, land use, or aesthetic effects. Trust in Institutions and Developers: It is essential to have faith in public authorities, private developers, and scientific establishments. Skepticism and resistance are frequently associated with low trust (Huijts, Molin, & Steg, 2012). Environmental Awareness and Values: Acceptance is greatly increased by greater environmental awareness, personal accountability for climate change, and pro-environmental values (Stern, 2000; Scheer, 2012). Siting and Local Context: Acceptance is often lower for projects located close to one's residence ("Not In My Backyard" or NIMBY effect) (Bell et al., 2005). However, projects offering local economic benefits (e.g., job creation) tend to be better received. Sociodemographic Factors: Although the direction and degree of these correlations vary

depending on the situation, attitudes about renewables are influenced by age, income, education, and political inclination (Karampour & Sinke, 2021).

The elements affecting public acceptance in developing nations exhibit both similarities and differences from global trends. Particular traits consist of: **Economic Priorities:** In many developing countries, public opinion is shaped more by urgent economic requirements including affordability, energy access, and job creation than by environmental concerns (Zhang et al., 2017). **Education and Awareness:** Adoption may be hampered by a lack of public knowledge about renewable technology and their advantages. Support has been observed to increase with the use of educational initiatives (Karytsas & Theodoropoulou, 2014). **Concerns about faith and Corruption:** Because of governance issues in some areas, public views may suffer from a lack of faith in institutions and apprehensions about corruption in project management (Sovacool et al., 2018). **Cultural & Social Norms:** Acceptance may be influenced by customs, religious convictions, and group decision-making standards. Projects that are seen as endangering traditional livelihoods or communal lands, for example, may encounter opposition (Jenkins et al., 2020). **Access and Equity Issues:** When communities witness observable advancements in energy access and believe that the benefits are being distributed fairly, acceptance is higher (van Veelen, 2018). **Perspectives from Similar Cultural Contexts.** Research reveals further subtleties in areas that share cultural similarities with Uzbekistan, such as Central Asia and portions of the Middle East. Lastly, the author's understanding of the intricate interactions of cultural, social, and psychological elements in environmental behavior as well as the significance of context-specific research in promoting sustainable development has grown as a result of this study. For example, research has shown that while public support for renewable energy projects is typically strong in Kazakhstan and Kyrgyzstan, actual implementation frequently experiences delays because of a lack of open communication from authorities and limited public engagement. Similar to this, worries about energy independence and national pride often impact popular enthusiasm for solar and wind energy in Middle Eastern nations like Jordan and Iran. However, doubt regarding long-term results can result from mistrust of the government's ability to fulfill environmental pledges. Religion, customs, and social conventions are important factors in determining an individual's response in situations like Uzbekistan. For instance, conservative groups are more likely to accept renewable energy when it is presented as a way to preserve the environment for coming generations, a principle that is frequently highlighted in Islamic teachings. Furthermore, decentralized renewable energy solutions like community wind turbines and off-grid solar panels are more popular among residents of rural and semi-urban areas, which are frequently underserved by the current energy infrastructure. Rather than climate concerns, this is frequently motivated by a real need for better access to energy services. People's perceptions of justice and equity in the use of renewable energy also seem to be influenced by cultural alignment. Regardless of the environmental benefits of a project, communities may oppose its execution if they believe it is being forced from above without consultation or benefit-sharing. On the other hand, it has been demonstrated that community-based ownership models or participatory planning procedures improve public acceptability and trust, particularly in collectivist societies like those found in Central Asia. Based on these findings, it is evident that public support for renewable energy in developing nations with comparable cultural backgrounds to Uzbekistan depends on a combination of deeper cultural narratives, communication tactics, and trust-building initiatives in addition to financial incentives and legislative directives. Understanding these factors can assist Uzbek officials in creating more socially inclusive and culturally sensitive renewable energy plans that align with the goals and values of the populace. **Energy Security Issues:** The switch to renewable energy sources is occasionally received with skepticism in resource-dependent countries due to worries about dependability and national energy sovereignty (Dai & Xue, 2015). **Historical Dependency on Fossil Fuels:** Long-standing dependence on the coal, oil, and gas sectors produces economic and sociopsychological obstacles to change (Al-Amin et al., 2019). **Place Attachment and Community Identity:** Renewable energy initiatives that support local pride and identity have a higher chance of being accepted. In bright, arid areas, for example, solar energy is frequently accepted due to its cultural "fit" (Süsser, Döring, & Ratter, 2017). **The role of religious and ethical values:** Renewable energy projects that are presented in terms of environmental responsibility (khalifa) and stewardship (amanah) have become more widely accepted in nations with a majority of Muslims (Hassan & Kouhy, 2013).

A complicated interaction between perceived sociodemographic factors shapes public adoption of renewable energy on a global scale. Additional levels of complexity are introduced in poor nations and culturally comparable situations by historical energy dependencies, governance concerns, economic objectives, and traditional norms. Designing successful renewable energy policies and projects that are sensitive to local needs and beliefs requires an understanding of these dynamics. Discuss different dimensions of public acceptance (cognitive, affective, behavioral). There are three key dimensions when the public embrace or accept the new technology, policy or idea and these are cognitive, affective, and behavioral. The cognitive dimension involves notions about the object of acceptance such as understanding its benefits and risks. The successful dimension embrace feelings and emotions associated with object, such as enjoyment or concern. Lastly, the behavioral dimension reflects actions taken as a consequence of these thoughts and feelings like using the technology or advocating for a policy.

Cognitive dimension. This dimension focuses on the logical processing and comprehension of data pertaining to the accepted object. It consists of: **Perceptions and Beliefs:** People make judgments about an object depending on information they are given, which may be favorable or unfavorable. **Knowledge and Understanding:** Acceptance may be influenced by a more thorough comprehension of the object's operation and possible effects. **Risk Perception:** People weigh the possible advantages and disadvantages of the item. **Affective Dimension:** The psychological and emotional reactions to the item are included

in this component. It consists of: Feelings & Emotions: People may feel a variety of emotions, including fear, hope, and enjoyment, in relation to the item. Values and Attitudes: The item may influence acceptance by igniting preexisting values or attitudes. Emotional Bond: Acceptance may be impacted by objects that arouse deeper emotional bonds. Behavioral Dimension: This dimension shows what people do in response to their emotive and cognitive reactions. It consists of: Intentions and Decisions: Depending on their feelings and ideas, people may choose to support the policy, use the technology, or take other actions. Adoption and Usage: People may adopt and actively utilize the item if they accept it. Advocacy and Support: People can show their support for the cause in a number of ways, such as by sharing information about it or pushing for its implementation. Developing measures to encourage public acceptance of new technologies, programs, or ideas requires an understanding of these three characteristics. It is possible to promote wider acceptance and engagement by addressing both the cognitive and affective components and by supporting desired behaviors. In assessing public acceptance of renewable energy in Uzbekistan several interconnected variables must be considered along with the core construct of the Theory of Planned Behavior.

Awareness and knowledge are the key drivers that serves predecessor to both attitude and perceived behavioral control. When people are informed about green energy technologies such as solar, wind, and hydro power and understand their environmental and economic outcomes, they are more like to shape favorable attitudes toward their adoption. One of the main component of TPB ; Attitudes reflect a person's overall evaluation of renewable energy. Positive attitudes emerge when people believe that green energy is advantageous, sustainable and aligned with national development goal. The role of trust plays a crucial role in forming both attitude and subjective norms. In case of Uzbekistan, the trust in government agencies, local authorities and international partners implementing renewable energy projects can either encourage or hinder public support. Strongly linked are perceived benefits and risks, which directly influence both attitude and perceived behavioral control. People are favorable toward to support green energy if they get benefits such as cost savings, environmental protection, energy security, while concerns about high installation costs, reliability, or lack of maintenance services may lead to uncertainty. Socio-demographic factors like age, education level, income, urban or rural residence plays as regulating variables that influence how individual from their attitudes, perceive social pressures and evaluate their ability to act. For instance : younger or more educated individuals who lives in urban areas may have higher exposure to information and resources that support green energy adoption. Last but not least, improving perceived behavioral control requires policy support. By lowering financial and informational obstacles, government incentives, tax breaks, public awareness campaigns, and infrastructure expenditures can empower people and raise the possibility that they will eventually adopt the behavior.

2.3 .Renewable Energy in Uzbekistan

Overview of Uzbekistan's energy sector, renewable energy potential, and current policies and initiatives. This first comprehensive review of Uzbekistan's energy policies by the IEA comes at time of critical importance for the country's energy sector. The broad-based reform of the energy sector, beginning in 2019, has continued at a steady pace. Its reach and scope are ambitious by international comparison, and the IEA applauds the government of Uzbekistan for the progress made to date. Starting from a largely closed and monopoly-driven energy system, the reform has led to concrete steps to harness market forces to attract investments, increase transparency and rule of law, improve energy security, and strengthen the environmental sustainability of the energy sector. At this stage, the country's energy sector remains dominated by state-owned enterprises. An important area of reform is to improve the corporate governance of these companies. At the same time, the sector needs to be brought to financial viability, for example through debt restructuring and with measures to avoid debts from reaccumulating. The level of energy prices is central for attracting investment and for encouraging citizens to use energy efficiently. As part of the country's social policy, the government sets enduser prices for electricity and natural gas below full costs of supply. The IEA estimates that in 2020, Uzbekistan's implied subsidies on natural gas, electricity and oil amounted to USD 3.8 billion, or 6.6% of the country's gross domestic product (GDP). Natural gas dominates Uzbekistan's energy supply. In recent years, it has provided around 85% of both total energy supply and electricity supply and is the main energy source in all sectors. It has also been a major source of export revenue, but the government now plans to stop exports by 2025 and use the gas for petrochemicals production and domestic energy supply.

At the current rate, however, the country's gas reserves will be depleted in less than 20 years, while the government foresees natural gas demand to rise by 30% to 65 billion cubic metres (bcm) by 2030. Uzbekistan has adopted legislative incentives to attract foreign investment to maintain production as well as to develop new oil and gas fields to meet a growing domestic demand. To encourage the necessary investments, it intends to gradually raise the very low gas tariffs to cost-recovering levels. Oil prices were deregulated in 2020, and a full gas price deregulation is planned for 2026. A gas tariff reform would encourage both more efficient gas use and the development of the country's significant solar and wind power potential for electricity generation. It would also increase the financial viability of the sector, which needs investment in modernising gas pipelines, for example. Efforts to modernise and increase oil refining and petrochemicals production are proving successful. The stateowned Uzbekneftegaz was unbundled in 2019, and the government has launched a programme to partly privatise its holdings in the sector in the coming years.

Uzbekistan has started to make significant progress in incorporating renewable energy into its national energy mix, in addition to the reforms in the conventional energy industry. By 2030, the government wants to generate at least 25% of its electricity from renewable sources, which is an ambitious goal. In order to do this, a number of massive wind and solar projects have been launched in partnership with foreign investors, such as Masdar, a company located in Abu

Dhabi, and other international energy firms. Over the coming years, gigawatts of clean energy capacity are anticipated to be added by these projects. Furthermore, the implementation of public-private partnerships and competitive tenders has started to improve the investment climate for the growth of renewable energy. From a geographical standpoint, Uzbekistan offers a lot of potential for wind and solar energy. With more than 300 sunny days annually, the nation is perfect for solar photovoltaic (PV) installations, particularly in the central and southern parts. In areas like the provinces of Navoi and Bukhara, where average wind speeds surpass 4 meters per second—suitable for contemporary wind turbines—wind energy prospects are similarly bright. As a result, the government has already started environmental impact evaluations and feasibility studies to make sure that the use of renewable energy doesn't upset the natural equilibrium.

In addition, frameworks for policies are changing to facilitate this shift. In 2019, the government passed the Law on the Use of Renewable Energy Sources, which gives renewable energy projects a legal foundation and describes investor incentives and tax breaks. The nation's dedication to sustainable energy practices was strengthened in 2021 with the approval of the Strategy for the Transition to a Green Economy. In order to ensure that human capital development keeps up with infrastructural developments, educational and training initiatives are also being started to create local knowledge in renewable energy technology. In conclusion, Uzbekistan is aggressively moving toward a more diversified and sustainable energy future, even if the nation still relies significantly on natural gas. The country's economic modernization plan is increasingly incorporating the development of renewable energy. Uzbekistan is in a good position to take use of its renewable energy potential and lessen its dependency on fossil fuels with the correct governmental backing, international collaboration, and public involvement. In addition to ensuring long-term energy security, this shift is necessary to fulfill global climate pledges and encourage green growth in the area.

2.4 Conceptual Framework.

The Theory of Planned conduct (TPB), which holds that a person's intention to carry out a conduct is the main factor influencing whether or not they will actually do so, serves as the foundation for the conceptual framework for this investigation. Three important concepts—attitude toward the activity, subjective norms, and perceived behavioral control—have an impact on this purpose (Ajzen, 1991). These elements offer a helpful prism through which to examine Uzbekistan's public adoption of renewable energy. **Attitude Toward Renewable Energy.** This is a measure of how favorably or unfavorably people view the use of renewable energy sources. Beliefs on the advantages (such as energy independence and environmental sustainability) and disadvantages (such as cost and dependability) of renewable technologies influence attitudes. The intention to promote and embrace renewable energy is likely to be strengthened by a positive outlook. **Subjective Norms.** The perceived social pressure to use renewable energy or not is reflected in subjective norms. The opinions of friends, family, local authorities, and the media all have an impact on these standards. Subjective norms can have a big impact on public acceptance in a collectivist society like Uzbekistan where social influence is important. **Perceived Behavioral Control.**

This construct evaluates a person's belief in their capacity to adopt pro-renewable energy practices, such putting in solar panels or advocating for legislative reforms. Economic capability, technological expertise, and infrastructure accessibility are a few examples of factors that might help or hurt perceived control. **Additional Variables.** The approach also incorporates trust in government policies and environmental knowledge as moderating variables to adjust the TPB to the renewable energy scenario in Uzbekistan. These factors are important in post-Soviet transitional economies where environmental awareness and public trust are growing. **Environmental Awareness:** Positive attitudes and stronger intentions to promote renewable energy are more likely to develop among people who are more aware of climate change and environmental deterioration. **Trust in Government and Institutions:** Subjective norms and perceived control may have a moderating effect on how the public views government initiatives and openness in the execution of renewable energy projects. **Proposed Framework Diagram.** The conceptual model (see Figure 1) shows how the public's intention to accept and embrace renewable energy is influenced by the TPB constructions, environmental consciousness, and institutional trust. It is predicted that actual behavior and support for renewable policies and practices would be directly impacted by these aspirations.

Figure 1: Conceptual Framework based on TPB

This framework will direct the survey data's empirical analysis, allowing for a thorough comprehension of the behavioral factors that encourage and hinder Uzbekistan's adoption of renewable energy. Additionally, it enables the TPB to be validated in a distinct sociocultural and economic context.

3.1 . Research Design

This study applies a quantitative survey based research design which is appropriate for collecting standardized data on public perception and attitudes toward renewable energy. Using a survey method makes it possible to easily gather data from a large number of respondents and quantify the links between the variables included in the Theory of Planned Behavior (TPB). A quantitative approach is suitable for testing the TPB model, as it involves statistical analysis of measurable constructs such as attitude, subjective norms, perceived behavioral control, intention and behavior. Cross-sectional design used, meaning that data will be collected at a single point in time. Without needing long-term monitoring, this design is appropriate for evaluating the present levels of public acceptability of renewable energy and comprehending how TPB structures affect intention and behavior.

3.2 Target Population

The targeted population for this research is residents of Uzbekistan aged 18 and above, with a focus on individuals from both urban and rural areas to convey a broad understanding of public perception. The study particularly focuses on regions with active or potential green energy projects to ensure relevance. **Sampling Method:** This study uses a stratified random sampling method to ensure representativeness across various strata such as geographic region (urban vs rural), age group, and education level. This approach improves the results' generalizability while lowering sampling bias. However, limitations may include unequal internet access across regions, which could impact participation if the survey is conducted online. **Sample Size:** The minimum suggested sample size is roughly 385 people, according to Cochran's formula for determining sample size for large populations, which aims for a 95% confidence level with a 5% margin of error. However, a total of 500 replies will be targeted in order to improve statistical power, take into consideration possible non-responses, and enable subgroup analysis. **Recruitment Procedures:** A combination of online surveys disseminated through social media sites (such as Facebook, Telegram, and regional forums), email invites, and in-person outreach in local communities will be used to recruit participants. This hybrid strategy guarantees that both tech-savvy people and those with less internet access are included.

3.3. Survey Instrument

The questionnaire will be tailored to the sociocultural context of Uzbekistan and prepared using proven TPB scores. To guarantee linguistic accuracy, items will be translated into Russian and Uzbek and then back-translated. Clarity, appropriateness, and internal consistency will be evaluated by an expert review and a pilot test involving thirty participants.

3.4 Data Collection

Measures for TPB Constructs: **Attitude:** Evaluated on a 5-point Likert scale (1 being strongly disagree and 5 being strongly agree), using words such as "Renewable energy is a good solution for our future" or "Using renewable energy is beneficial." **Subjective Norms:** Metrics like "My family believes I should support renewable energy" and "People important to me approve of using renewable energy" are used to measure this.

Perceived Behavioral Control: Assessed using questions such as "I can afford to use renewable energy in my household" and "I have access to enough information about renewable energy." **Intention:** Measured using statements such as "I am willing to recommend renewable energy to others" or "I intend to support renewable energy initiatives in the next year."

Behavior: Measured using self-report items such as "I currently use renewable energy" and "I am willing to pay more for electricity from renewable sources."

Demographic Variables: Age, gender, income, education level, residential area (rural or urban), work status, and prior exposure to renewable energy will all be included in the data collection.

Survey Format: The survey will mostly employ 5-point Likert scales, with a few multiple-choice and short-answer questions for behavioral and demographic information.

Validity and Reliability: Professionals with backgrounds in sustainable energy and environmental psychology will examine the questionnaire to guarantee content validity. A pilot test will evaluate the dependability and clarity of the items. The internal consistency of the TPB construct scales will be tested using Cronbach's alpha, with $\alpha > 0.70$ being satisfactory.

Methods for Gathering Data .Administration of the Survey: In communities with limited access to digital technology, surveys will be administered in person using printed copies and online using Google Forms. In-person data gathering will be aided by trained local volunteers.

Data Collection Timeline: From May 5 to May 12, 2025, seven day period is allotted for data collection.

Ethical Considerations: An informed consent form explaining the study's goals, participants' rights, and confidentiality procedures will be given to each participant. With the ability to opt out at any moment, participation will be entirely voluntary. Data will be safely preserved and kept anonymous. Before data collection starts, ethical approval will be sought from the appropriate university ethics committee or Institutional Review Board (IRB).

3.5. Data Analysis Techniques

Descriptive Statistics: For each TPB construct, demographic information and responses will be compiled using descriptive analysis (means, standard deviations, frequencies, and percentages).

Correlation Analysis: To investigate the connections among TPB constructs, intention, and self-reported behavior, Pearson correlation coefficients will be computed.

Regression Analysis: To test the TPB model and determine the predictive power of attitude, subjective norms, and perceived behavioral control on intention as well as of intention on behavior, multiple regression analysis will be employed.

Moderation/Mediation Analysis (Optional): If trends show up, PROCESS Macro for SPSS or bootstrapping techniques may be used to examine demographic variables (such as age, gender, and income) as moderators or mediators.

Data Analysis tools: Data is analyzed using IBM SPSS Statistics (Version 27). If needed, R or Python will be used for advanced modeling.

CHAPTER 4. RESULTS

4.1. Descriptive Statistics

Descriptive statistics were computed to provide an overview of the data, including the central tendencies and dispersion of the variables involved in the study. Table 4.1 summarizes the mean, standard deviation, minimum, and maximum values of the key variables.

The data indicate that participants generally expressed favorable attitudes toward renewable energy, with relatively high means across all constructs.

4.2. Correlation Analysis Results

lack of local service providers, and potential employment displacement in traditional energy sectors. These worries reflect the dual character of public attitudes optimism about long-term advantages but skepticism about current feasibility.

3. The study investigated the perceived subjective norms influencing public acceptance of renewable energy." The adoption of renewable energy was somewhat supported by subjective standards. Numerous individuals admitted that members of their social circles and family supported renewable energy. Nonetheless, the impact of more general social norms—like national campaigns, well-known individuals, or local authorities—was rather minimal. According to this research, Uzbekistan lacks robust top-down support, which is crucial for creating cohesive public standards, particularly in traditional civilizations.4. Perceived behavioral control regarding renewable energy adoption was analyzed. Respondents said they felt they had little control over the use of renewable energy technologies. High upfront expenses, a lack of readily available government support systems, and a lack of local suppliers or technicians were among the commonly mentioned factors. Even people with good intentions are unable to translate their attitudes into concrete acts because of these obstacles, which add to a sense of helplessness.5. The predictive strength of attitudes, subjective norms, and perceived behavioral control on intention was examined.

All three of the TPB's constructs strongly predict intention, according to regression analysis, with attitude being the best predictor, followed by subjective norms and PBC. This implies that while feelings of control and social influence are important, the most important factor in establishing intent is an individual's assessment of the value and utility of renewable energy.6. The relationship between intention and actual behavior was evaluated. The relationship between intention and behavior was moderate but statistically significant. Due to logistical or financial limitations, many individuals who expressed a great desire to embrace renewable energy had not yet done so. The existence of an intention-behavior gap, a well-known problem in environmental behavior research, is confirmed by this. It also implies that structural enablers like financial incentives, service accessibility, and user-friendly technology must be incorporated into policy initiatives in addition to awareness-raising.

5.3 . Implications for Theory

By showing that the TPB is applicable in a post-Soviet, Central Asian setting where cultural norms, infrastructure, and governmental functions differ from those in Western countries where TPB has been primarily tested, this study advances the theoretical development of the TPB. This study demonstrates that fundamental psychological concepts like attitudes, social pressure, and perceived control are culturally relevant by verifying the TPB model in Uzbekistan. The results, however, also suggest that the TPB framework might be expanded to include contextual factors including media impact, policy support, and infrastructure preparedness. Even though they were outside the initial purview of TPB, these outside variables obviously have an impact on behavioral outcomes and ought to be included in updated models for better predicted accuracy in practical applications.

5.4 .Practical Implications for Uzbekistan

The introduction of national education and media campaigns is necessary to increase public awareness of renewable energy. Furthermore, the public should be able to finance sustainable technologies through low-interest loans or subsidies. Launch national education and media campaigns to increase public knowledge of the benefits, cost, and installation process of renewable energy systems. Information must be offered in both Uzbek and regional dialects in order to reach a larger audience. By providing low-interest loans or financial subsidies, sustainable technologies should be made more accessible. To guarantee fair access to green energy solutions, more assistance must be provided to rural populations, where energy options are few. In order to promote positive social norms surrounding green energy, it is crucial to involve significant people including community elders, religious leaders, and other well-respected people. The government's overt use of renewable energy, especially in public spaces like workplaces and schools, can also act as highly effective behavioral models that encourage wider public acceptance. Expanding training programs targeted at creating a trained local workforce capable of installing and maintaining renewable energy systems is crucial to improving perceived behavioral control. Furthermore, expanding the number of approved suppliers and support centers would lower technical obstacles and provide people the confidence they need to embrace renewable technologies. Strategies for renewable energy should be incorporated into larger national development plans, like the Green Economy Strategy 2030, in order to foster policy innovation. In order to guarantee that renewable energy projects provide a comprehensive contribution to sustainable development goals, this alignment can promote productive cooperation between the social, economic, and environmental sectors.

5.5 Strengths and Limitations of the Study

This study's primary merit is that it is the first thorough use of the Theory of Planned Behavior (TPB) to evaluate public support for renewable energy in the Uzbek setting. The inclusion of a sizable and demographically varied sample, which improves the results' generalizability, further supports the study's conclusions. Moreover, the research provides academic insights and useful information for decision-makers by fusing psychological theory with urgent energy policy challenges. This study has a number of shortcomings in spite of its contributions. First, pro-environmental emotions may have been overreported due to the dependence on self-reported intentions rather than real observable conduct. Second, it is more difficult to prove causation or monitor behavioral changes over time when a cross-sectional design is used. The results may have been skewed toward greater awareness and more positive sentiments due to the sample's disproportionately high proportion of urban respondents, which also underrepresented rural viewpoints. Lastly, while elements like government trust and media influence are probably important in the Uzbek setting, this study did not specifically look at them.

5.6 . Recommendations for Future Research

Longitudinal studies that monitor people or households over time should be a consideration for future study. This method would assist in ascertaining whether behavioral intentions toward renewable energy eventually result in actual practices, particularly in reaction to changes in legislation or new government initiatives. Other factors like perceived danger, information accessibility, government trust, and financial incentives ought to be included in future research. By taking into consideration contextual aspects that have a considerable impact on public behavior in real-world situations, the TPB framework may be able to anticipate outcomes more accurately. Future studies ought to think about breaking down the analysis by demographics and geography. Policymakers can create more focused and successful programs that cater to the unique needs and perceptions of each group by comparing the populations of urban and rural areas, as well as their economic and educational backgrounds. It is advised that varied methodologies be used in future studies, including surveys and in-depth interviews or focus groups. This strategy will aid in better capturing intricate obstacles and motivations, particularly in minority communities where quantitative surveys might not adequately uncover underlying causes. The effectiveness of such treatments, like information campaigns and financial incentives, should be properly tested in future research to ascertain how well they affect public attitudes and behavior. This method will assist in determining which tactics work best to encourage constructive behavioral change.

6.1 .Summary of Key Findings

The purpose of this dissertation was to examine, using the Theory of Planned Behavior (TPB), Uzbekistan's public adoption of renewable energy. Knowing what influences citizens' acceptability and readiness to adopt renewable energy technologies is essential as Uzbekistan sets out on a bold green transition to achieve its sustainability goals. The purpose of this study was to close the empirical research gap pertaining to Uzbekistan, a nation with distinct social, cultural, and economic traits. A quantitative survey-based methodology was used in the study to collect information from a wide range of Uzbek citizens. Along with other factors like public awareness, knowledge, and self-reported behavior intentions, the TPB's key constructs—attitudes, subjective norms, and perceived behavioral control—were measured. The data analysis demonstrated that intentions to support renewable energy are significantly predicted by favorable attitudes, supportive social norms, and a sense of control over one's actions, confirming the TPB's usefulness in this context. Additionally, self-reported willingness to embrace or support renewable energy efforts was found to be strongly predicted by intentions. The results highlight the intricate interactions between psychological variables and contextual realities including the availability, price, and policy environment of infrastructure. Even though a large number of respondents said that they were prepared to accept renewable energy sources and had strong pro-environmental views, obstacles such limited access to renewable technologies and financial limitations prevent widespread adoption. These revelations offer important proof for creating treatments that are both practically sound and culturally aware.

CHAPTER 6. CONCLUSION

This study makes a substantial contribution to the expanding body of research on public acceptability of renewable energy, especially in the context of rising countries and Central Asia. Since the majority of earlier research has concentrated on Western or industrialized nations, this study is especially crucial for expanding theoretical knowledge. Validation of TPB in Uzbekistan: The cross-cultural applicability of the TPB as a predictive model of renewable energy acceptability in Uzbekistan is demonstrated by this study, which offers strong empirical evidence for it. This broadens the theory's applicability outside of Western contexts and confirms that it can effectively explain behavioral intentions related to energy in a developing nation with distinct sociopolitical dynamics. Context-Specific Insights: The study draws attention to significant contextual elements that affect adoption, including opinions about government assistance, conventional social pressures, and regional differences in energy access. These results imply that although TPB captures fundamental psychological concepts, additional models that incorporate institutional trust and infrastructure elements may improve comprehension. Empirical Foundation for Policy: This paper offers a solid scientific basis for Uzbek policymaking and public engagement tactics by measuring the connections between attitudes, norms, control perceptions, and intents. This study has many real-world applications that will directly affect Uzbek politicians, energy stakeholders, and community leaders. Tailored Awareness Campaigns: The study highlights knowledge and awareness gaps regarding renewable energy, highlighting the urgent need for carefully thought-out educational initiatives. These should debunk falsehoods and allay concerns about dependability while highlighting observable advantages including financial savings, enhanced health, and energy security. Leveraging Social Influence: Programs that involve peer networks, religious leaders, and community leaders can increase acceptance since subjective norms play a significant influence. Adoption of renewable energy will probably be accelerated by social marketing tactics that present it as a common and acceptable practice. Improving Perceived Behavioral Control: It is crucial to implement interventions meant to lower perceived barriers, such as providing technical assistance, flexible payment schedules, and subsidies. The public will feel more in control and be more inclined to accept renewable technologies if infrastructure is expanded and they are made available and affordable. Inclusive Policy Development: To boost confidence and the perceived legitimacy of renewable energy projects, policymakers should take into account participatory measures that include citizens in planning and decision-making. Rural and Regional Focus: To prevent regional disparities from getting worse, special attention should be paid to rural areas, where informational and infrastructure deficiencies are more noticeable. Although this study offers insightful information, it is crucial to recognize its limitations in order to properly contextualize the results. Self-Reported Data and Bias: The use of self-reported survey data raises the risk of social desirability bias, in which participants may exaggerate their support for renewable energy in an effort to come across as socially conscious. Cross-Sectional Design: The cross-sectional survey's snapshot format restricts its capacity to record shifts in

views or behavior over time. As laws and technology change, longitudinal research would provide a clearer picture of how intentions become actions. **Sample Representativeness:** The sample may not accurately reflect all ethnic minorities, rural communities, or marginalized populations, despite efforts to include participants from a range of geographic locations and demographic categories. This would limit the findings' generalizability.

Future study on the acceptability of renewable energy in Uzbekistan and other contexts should take into account in order to expand knowledge and improve its usefulness. **Longitudinal and Experimental Designs:** Stronger proof of causality and behavioral change processes could be obtained by monitoring changes over time or evaluating the effects of certain interventions. **Qualitative Methods:** Focus groups, ethnographic research, and in-depth interviews may reveal complex cultural ideas, emotional motivators, and obstacles that are difficult for surveys to capture. **Integration of Additional Theories:** A more thorough understanding might be obtained by combining TPB with frameworks such as the Norm Activation Model (NAM), Technology Acceptance Model (TAM), or institutional trust theories. **Broader Demographic and Geographic Sampling:** To make sure the results represent the diversity of Uzbekistan, more isolated and underprivileged communities should be included. **Policy Impact Studies:** Assessing how public views and behavior regarding renewable energy have been impacted by recent government regulations, pilot projects, and incentive programs.

This dissertation represents a meaningful step toward understanding the human dimension of Uzbekistan's energy transition. It draws attention to the fact that, despite widespread popular support and recognition of the value of renewable energy, there are still substantial structural and informational obstacles. Although the Theory of Planned Behavior was a useful lens, legislation, education, and infrastructure development are necessary to close the gap between intention and action in order to bring about meaningful change. Promoting broad public acceptance will be essential as Uzbekistan continues its green path, not only for environmental sustainability but also for social cohesion and economic resilience. The results of this study provide stakeholders with a road map for involving the public and fostering an atmosphere that encourages the use of renewable energy. Lastly, the author's understanding of the intricate interactions of cultural, social, and psychological elements in environmental behavior as well as the significance of context-specific research in promoting sustainable development has grown as a result of this study.

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