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Nurturing Green Consumer Values and Renewable Energy Reliance through Societal Education in Uttar Pradesh for Inclusive Capacity Building

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Abstract: The main focus of this research has been on examining the renewable energy sources (RESs) consumption with respect to green consumer values (GCVs). These GCVs have primarily been examined with regard to different products and services. The most significant strategy for strengthening everyone is social education. While GCVs are assumed to be nurtured through education, specific understanding about the long-term benefits of renewable energy for a sustainable life is measured with the belief that the greater the training and development the better shaped the society can be, which boosts morale and increases their energy reliance with RES, assessed by the respondents of Uttar Pradesh (UP), as the outcome of the research. The implications for the stakeholders are the long-term advantages of renewable energy for a sustainable existence, since a society may be better formed and its reliance on RESs for energy rises the more training and development it receives. The advantages are visible, though we may not be able to completely transition soon, but it is crucial that we think for the future. The quantitative research method applies statistical analyses, such as ANOVA, spectral analysis, and multilayer perceptron analysis, justifying the requirement of education. The results justify that the solution to this problem—that green consumer values are being learned—can be nurtured by societal education. Learning about green consumer values can make society understand the renewable energy benefits, which can better shape society and lead to capacity building.

Keywords: education; green consumer values; hydro; renewable energy; societal; solar; wind

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1. Introduction

Learning is a continuous process that comes through education, which is a formal process. The changing society has proven that education can transform an existing system and, at the same time, act as an enabler of change. Because of breakthrough technological developments, it is widely assumed that the current generation must understand the process of unlearning, learning, and relearning. The change is only constant, so the sooner it is accepted, the faster it can grow. Continuous learning through change stimuli can be felt in almost all aspects of life. The conditioning of upbringing, behavior, and brain causes some people to learn faster than others. Education can be implemented either through an institutional or societal process. Though different processes of education have their own importance and implications, the learning outcome is always the most important, measured as the transformed thought process of an individual. Institutional education is a curriculum-based teaching method that takes longer to implement but has a greater impact after a longer period. However, societal education is an informal process in which every individual continues to develop in accordance with the norms of any given society, which can be an unspoken code of conduct. Societal education is a faster method to enforce

change by learning. In such a condition, society itself acts as an educator, shaping one's conduct in a specific situation.

Green consumption is the call of the time for a sustainable life [1]. Consumers are the ones who decide whether to accept or reject a seller's offer. There may be many different criteria for each individual consumer behind the selection or rejection of an offering. For a sustainable future, the current generation must be responsible by keeping their commitments to the call for good change. Consumers consume any product, service, or mixed offer based on the benefits offered, their education, and capabilities to understand the available information. Many a time it was found that consumers are not aware of the non-financial benefits and losses of an offering. Consumers must be educated enough for a critical analysis and rational decision making. This is possible by educating them on the required understanding of the offerings. Business houses have exaggerated the value of business and the image it presents to society, which is a mirage. Education also has remained focused on acquiring skills in order to make the most profit, losing sight of the importance of sustainability. There must be education on spending money with a sense of everyone's well-being, although it sounds slightly impractical, which may pose challenges to implement. However, the first step toward overcoming this challenge is to educate consumers about global well-being.

Energy is the most essential requirement to run life and activities of everyday life for everyone. We are living in an era of many options and substitutes for any necessity. Energy options are also widely available depending on the choice of an individual, such as fossil-based or nonrenewable sources of energy or nature-based renewable sources of energy [2]. Humans have relied on fossil fuels for centuries, and our reliance on these energy sources is growing. At the same time renewable energy sources (RESs) are more beneficial, but they are a recent development of this century [3,4]. The lack of accurate information about long-term benefits and sustainability has slowed their reach to the general public. However, the changing times are demanding a higher level of dependence and reliance on the RESs [5]. Governments and corporations are committed to the United Nations Sustainable Development Goals (UNSDGs) to transform their energy production and supply with a minimum pollution and a higher quality of fuel that can have a minimal effect on the environment and living organisms [6,7]. Reaching the UNSDGs is possible only through the holistic implementation by including all stakeholders in the value chain, where the end consumers are the most important [8–10]. End consumers' choice over options will determine the speed of reaching the goal.

Green consumer values (GCVs) are individual preferences that consider the betterment of the environment or not depleting the environment as a call for everyone. They investigate variables that influence an individual's belief in environmentally friendly consumption [11,12]. Millennial consumers are more likely to accept and promote brands that embrace sustainability. Seemingly, this is the right time and the best opportunity to bundle a sustainable offering. Companies with green offerings are claiming a higher growth rate in their business compared to their counterparts on the traditional path. However, green offerings are always fraught with difficulties when consumers want to be environmentally conscious, but price becomes a barrier. In many cases, consumers have the intent to buy but do not follow through. Now the business goal is to convert this intention into action, which is easier than creating awareness about the benefits of green consumption. Sustainable consumption has been the subject of study in the research, literature, and academia for several years. The theoretical understanding has provided a deeper sense of the benefits and the requirement of practical implementations and usage. Much has been said about policy formulation and government interventions, but the real implementation is possible only by making consumption a reality.

Social inclusivity itself makes a society self-reliant and creates many new avenues for prosperity and growth. People in the Indian society differ greatly based on some visible and many invisible criteria. In this circumstance, inclusivity is limited to just a few people with a specific identity, and that is considered the sample for representation, which is unfair

and far from reality. In the case of Uttar Pradesh (UP), India's largest state, it registers its presence in the Indian parliament by holding the most seats for Members of Parliament. As per the current situation, the Prime Minister of the country is also elected from one of the constituencies of the state. Still, the gap among people and the reach of services are comparatively less satisfactory. The support of the public distribution system (PDS) from the government agencies for the needy has been a successful initiative. However, the question arises: 'Can we call this inclusivity'? Society needs a full-fledged, continuous support for skill development. A systematic training for skill development can connect everyone and shape them to be more thoughtful in their choices and decisions. The United Nation Sustainable Development Goal (UNSDG) [13] has a special focus on 'Ensuring sustainable consumption and production (SCP) patterns' under SDG 12 (Figure 1), which can be achieved only by implementing capacity-building activities in society that include everyone without any discrimination.

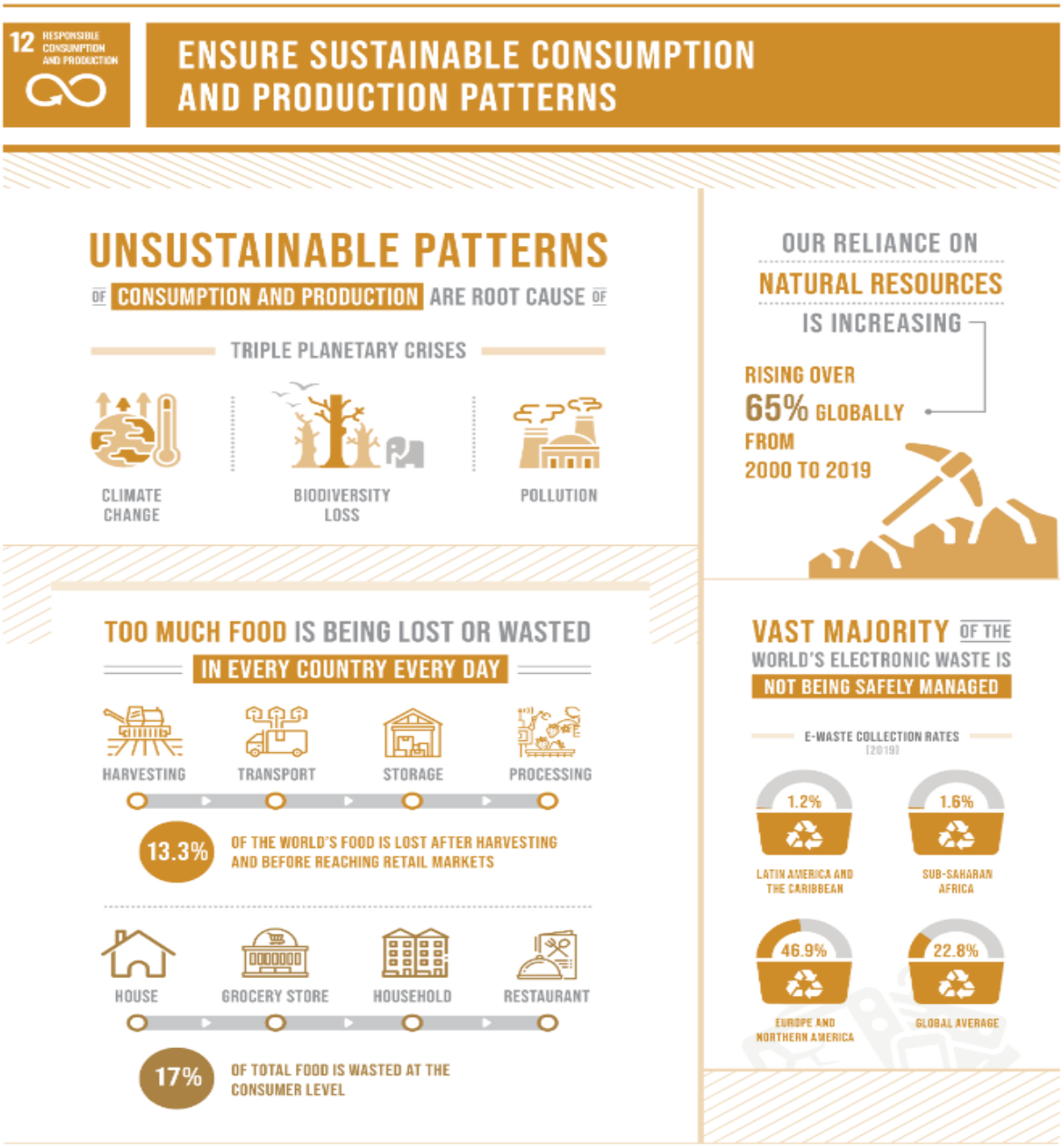

Figure 1. United Nations Sustainable Development Goals, and SDG 12. Source: https://sdgs.un.org/goals/goal12 (accessed on 29 October 2022) [14].

The UNSDGs are offering a roadmap for the inclusive development of societies. However, the real success depends on their implementation, which is in the hands of local executive partners. Consumers are at a nascent stage in their understanding of green consumer values. The better the understanding, however, the better the implementation. There are many studies conducted on the understanding of GCVs that look at green consumer values with respect to a specific product or service and offering. An extensive literature review led to the formulation of the research problem, i.e., education is the most important tool for strengthening society. The GCVs are assumed to be nurtured by education and training. The specific understanding of the long-term benefits of renewable energy for a sustainable life must also be measured, as the higher the influx of training and development, the better shaped the society can be, which boosts morale and increases their energy reliance with RESs, which must be assessed with a representative sample of Uttar Pradesh.

Furthermore, the research triggers the problem observed by answering some research questions. Research Question 1: do consumers connect themselves with GCVs for RESs? Research Question 2: what is the variation of opinions among consumers based on their education? Research Question 3: how do we ensure that the GCVs for RESs can be nurtured by education? Testing propositions to justify assumptions is also presented, rather than just research questions. Proposition 1: GCVs for RESs are existing among all consumers of energy. Proposition 2: education is an important influence that impacts GCVs in the consumption of RESs. Proposition 3: Renewable energy reliance can be established by education about GCVs for capacity building. The study's main goal is to justify the belief in nurturing GCVs for RES consumption. However, subobjectives are knowing the current status of GCVs among consumers in UP for RESs, developing connectivity among populations in nurturing GCVs for RESs, and measuring the role of education in inclusive capacity building.

The research is presented in five sections, and wherever required some subsections are also added for better clarity. The Section 1 is framed to introduce the research by providing a basic understanding of each variable, leading to the issue with the statement of the research problem, questions, hypotheses, objectives, and the presentation of research, titled 'Introduction'. The Section 2 is based on the literature review that has provided the basis for the formulation of the research problem, titled 'Research Conceptualization'. This section goes through four subsections and many subsections are more elaborated with some other subsections providing clarity on the chosen concept. The Section 3 is the methodological know-how, presenting the stepwise process for the adoption of methodology and the required analysis, named 'Methodology and Analysis'. The Section 4 is a detailed discussion of the analysis and findings, which consequently, lead to the result, provided as 'Results and Discussion'. The Section 5 is the last section and has the concluding remarks based on the analysis and findings of the results followed by future research, named 'Conclusions and Future Research'.

2. Research Conceptualization

The present section of this study deals with the conceptualization of various aspects related to the study. A thorough and in-depth literature analysis was conducted to frame the following concepts. A number of issues are discussed, such as green consumer values, which refers to how consumers' attitudes about green products influence their intentions to make green purchases [15]. Additionally, the concept of renewable energy production and consumption is discussed, which mentions that due to the negative environmental effects of conventional modes of energy production and consumption and the limited availability of conventional sources, the use of RESs is viewed as vital in today's situation. The section proceeds with statistical information on India's performance on energy resources along with Uttar Pradesh's demand and supply of energy and its growing potential. The literature available in the related area provides the record on the usage of renewable energy and the

status of production with an estimated demand for the future. This study has attempted to fulfil the requirement of the literature's research gap.

The section further discusses the role of education in transforming society. It focuses on the use of education as a social change instrument and it refers to how it empowers individuals to impact change in their communities. The relevance and urgency of need-based education in present times is also deliberated upon. The concept of societal education and its role in bringing about social change at both the individual and community levels is also discussed in this section of the paper. The current section proceeds further with the discussion on capacity building for inclusivity, which focuses on programs and activities that are most effective in strengthening the abilities, skills, and knowledge of people directly participating in the development process, and the current status of capacity-building activities, and concludes with the benefits of capacity-building activities.

2.1. Green Consumer Values

The United Nations focused on the adoption of 17 sustainable development goals while advocating for a new sustainable approach to development policy [16]. The 12th SDG clearly mentions ensuring "sustainable consumption and production patterns" [17]. People all throughout the world are becoming increasingly concerned about globalization, industrialization, the rise in global population, and the fast exploitation of natural resources. Consumers are starting to express an interest in buying goods that generate less waste, are reusable, and were made in an environmentally beneficial manner. Consumer behavior is crucial in both promoting and preventing change, as the ideas of sustainability and environmentally friendly consumption become more popular as environmental issues worsen [18]. Understanding the nature of customers' decision-making processes around the adoption of green and ecologically sustainable products is crucial for a sustainable world [19].

One of the key issues of the present era is sustainability, with many conversations centered on how sustainable consumption might help mitigate negative environmental effects [20]. The behavior and actions of humans have a major role in environmental protection [21]. Customers are encouraged to change their lifestyles and consumption habits to more environmentally friendly alternatives [22]. According to recent findings, those who are concerned about the environment and believe that they have a responsibility to safeguard it prefer to purchase green items [23]. When it comes to environmental behavior, choosing environmentally sustainable items is known as a "green purchase" [24]. The phrase "green consumption," which has been described by several scholars, has taken on personal and societal importance as a result of the quick development of sustainability issues, environmental consciousness, and ecological consumption behaviors (Figure 2) [25].

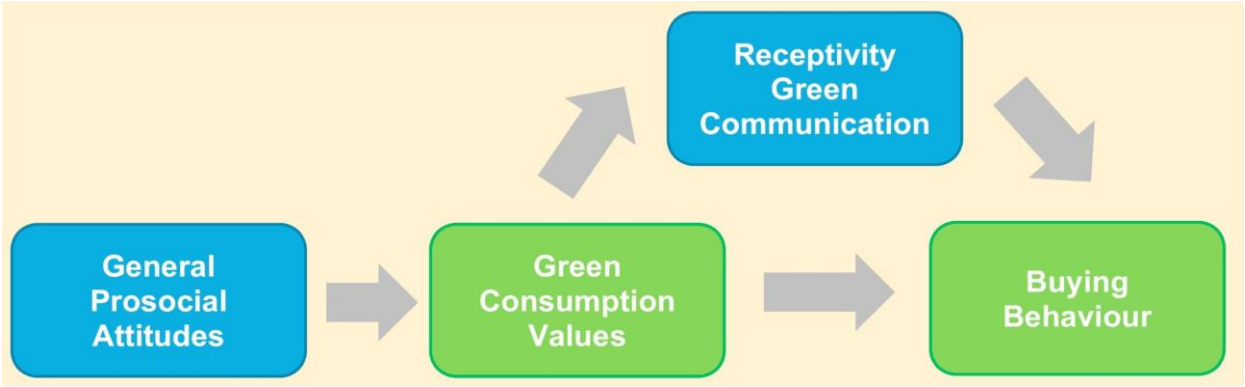

Figure 2. Green consumer behavior model. Source: https://www.sciencedirect.com/science/article/abs/pii/S0959652618331196 (accessed on 29 October 2022) [26].

Green consumption values refers to when an individual's purchasing and consumption habits show that they value the environment [27]. The green consumer values indicate the preference for consumption of those products that are environmentally friendly and sustainable [28]. The ideals associated with green consumerism heavily influence green consumers' buying habits [29]. The consumers who value green products are aware that their consumption will not be detrimental to the environment [30]. Recent research has discovered that green consumer values mediate consumer attitudes and environmental behavior. Additionally, the relationship between green consumer behavior and green consumer values may be mediated by the green purchasing intention. [31]. However, it is pertinent to mention that consumer attitude is a subjective idea and that it may vary with the product [32]. Sustainable products are those that may be recycled and benefit both society and the environment [33].

2.2. Renewable Energy Production and Consumption

There has been an ongoing transition over the past few decades towards non-conventional energy sources [34]. The use of RESs is considered essential due to the detrimental environmental consequences of traditional forms of energy production and consumption and the limited availability of conventional sources [35]. Therefore, different policies are advocated to encourage the production and consumption of renewable energy. About 19% of the world's energy consumption comes from renewable sources, and by 2050 strategic planning calls for a 50% rise in this type of consumption [36]. India's need for energy is rising as a result of the country's current economic growth initiatives. A crucial condition for a nation's economy to flourish is the availability of growing energy resources [37]. Energy is a crucial component of socioeconomic progress. Energy consumption has surged in recent decades as a result of the rising economic expansion of developing countries. The escalation of this pattern is anticipated [38].

Energy supply and security have become critical challenges not only for human society's progress, but also for worldwide political, as well as economic processes [39]. As per the data analysis for the OECD's member nations from 1980 to 2011, their research shows a long-term connection between energy usage, both green and conventional, and industrial output and economic expansion [40]. In the short run, there was also proof of an association between conventional energy use and GDP growth. Previous studies show that increasing the usage of RESs is a practical way to address energy supplies and climate change, while gradually replacing fossil fuels with them would also encourage the development of a sustainable economy. Additionally, there is a short-term two-way link between non-renewable energy and RESs, making it possible to switch between them [41]. According to projected global energy consumption estimates, India's energy consumption is steadily increasing and will continue to do so in the coming years, even in 2040 [42].

2.2.1. India Statistical Performance on Energy Resources

Energy is a critical component of every country's economic success. In the case of emerging countries, the energy industry is crucial because of the ever-increasing energy demands that necessitate massive expenditures to satisfy them. Historically, India's economic growth has been driven mostly by the service sector as compared to the manufacturing sector, and the rate of urbanization in India has also been slower than in other comparable nations. India now consumes more energy than any other country in the world, due to rising income levels and rising standards of living [43]. Since 2000, energy consumption has increased, with coal, oil, and solid biomass still meeting 80% of the requirements. India uses and emits less energy per capita than any average country worldwide, and it also produces less steel and cement than others. As it rebounds from a COVID-induced slowdown in 2020, India will re-enter a very active phase in its energy growth. Millions of Indian homes plan to purchase new appliances, air conditioners, and automobiles in the upcoming years. To satisfy the future energy demand, India will need to increase its infrastructure and resources to reach levels similar to those of the European Union [44].

The demand for primary energy in India has grown along with the GDP and population of the nation. Electricity consumption has increased at a compound annual rate of 7.39%. Demand is generated across the board in the economy, from commercial and industrial to agricultural and domestic usage. Over the ensuing decades, this pattern will persist. The reduction in energy intensity will be a major component of demand-side management. As a result of the recent expansion of the renewable energy industry, it was anticipated that from 2017 to 2022, the percentage of India's energy mix would rise by 91%. The wind and solar sectors will see the most expansion [45]. India is developing a more effective clean energy mix because of increased attention being paid to green power projects and the development of regulations that encourage renewable energy (Figure 3). The government has greatly increased the budgetary allotment and spending for the renewable energy industry after signing the Paris Agreement. Research and development, industrial and commercial uses, grid purchasing, distributed renewable energy, rural, urban, and other supporting initiatives have all received funding. By providing upfront incentives to buy electric vehicles and add solar storage batteries, the government has also accelerated the adoption of electric vehicles [46].

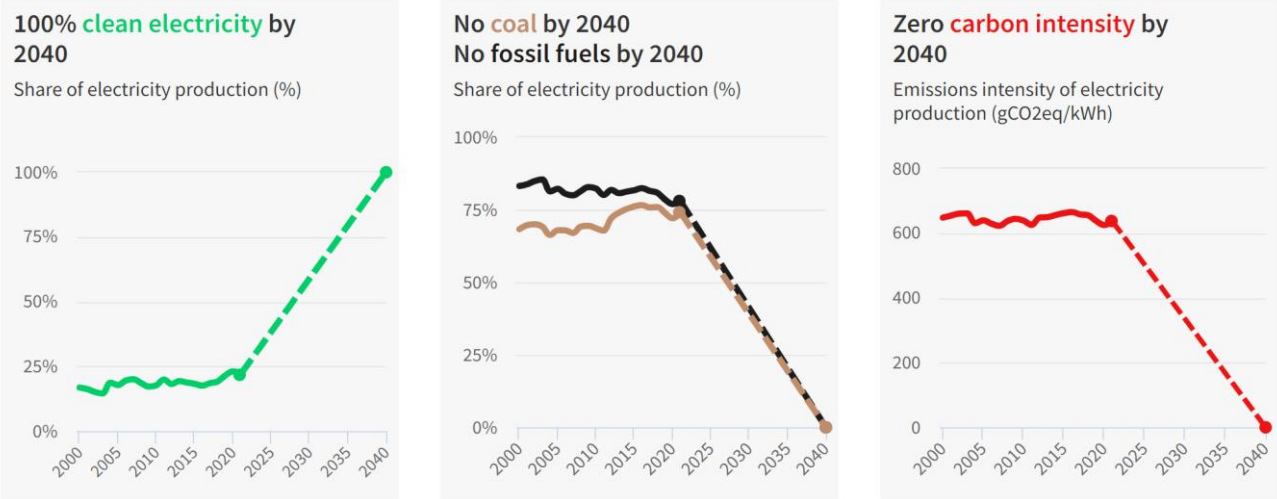

Figure 3. Progress towards clean power targets India 2000–2040. Source: https://ember-climate.org/countries-and-regions/countries/india/ (accessed on 29 October 2022) [47].

2.2.2. Uttar Pradesh Demand and Supply of Energy

In FY2020/21, six Indian states—Maharashtra, Gujarat, Uttar Pradesh, Tamil Nadu, Madhya Pradesh, and Rajasthan—provided around half of India's energy needs. The state of UP, which has 17 percent of the total population in India, made up a tenth of the nation's entire electrical market, placing it second only to Maharashtra (12%). The state's electricity industry has expanded quickly since independence, helping the state's industrial and agricultural sectors to prosper as well. The UP government is dedicated to reforming the state's electricity industry. The demand for electricity in UP has increased significantly over the past ten years and currently makes up to 10% of the overall demand for electricity in the nation. However, the state's capacity for renewable energy has expanded at a slow rate, and as a result, Uttar Pradesh has lagged behind other significant state power markets in meeting the requirements. If it achieves its solar ambitions, UP will use solar energy to provide the bulk of its increasing electricity demand in the future [48]. The energy transition of UP is at crossroads, reaching many targets and committing to install renewable-energy-generating devices specifically solar and biomass. The total installed capacity for renewable sources until October 2021 was 4.3 Giga Watts (GW). However, UP as a state has a commissioning target of 14.1 GW. Accounting as the 10th in demand for power with a higher rate of growth that almost doubled within a decade. The production ranked second with an estimation of 47 Tera Watt Hours (TWH) by the end of 2030.

The U.S. Energy Information Administration (EIA) released a study in November 2017 that stated that there was evidence of a growing decoupling between economic activity and power consumption and that rising energy productivity was limiting electricity demand growth to that of GDP. As a consequence of continued energy efficiency gains and the ongoing economic movement away from low-skilled manufacturing and toward services and more energy-efficient manufacturing, this transition has been underway in many of the member nations of the Organization for Economic Cooperation and Development (OECD). The economy of UP now depends equally on energy-intensive manufacturing activity and services [49]. If the state meets its 23.5 GW by 2030 objective, electricity output in the state is predicted to increase by FY2029/30, with solar energy accounting for nearly 88% of this increase [48].

2.2.3. Uttar Pradesh Growing Potential

Millions of individuals living below the poverty line are severely impacted by energy deprivation on a daily basis. Rural regions must be electrified in order to raise living conditions and educational standards. By 2022, India wants to have 175 Gigawatts of renewable energy capacity [50]. The state's prosperity has been accompanied by a steady rise in energy consumption. Production of resources based on innovative and renewable sources of power is given high importance and is being promoted due to the limited availability of conventional energy sources, their restricted exploitation, and the growing environmental degradation. There are more and better opportunities to take part in the energy industry's mainstream (Figure 4). With biomass and modest hydroelectricity, major projects utilizing MW of solar energy are being established. In the state, efforts are being made to develop rooftop and grid-connected solar power generation. Without a doubt, we are now making progress toward the objective that the agency's founders had in mind [51]. The most populous state in India is Uttar Pradesh, which is located in the country's north-central region. With the growth of the state, energy consumption is continually rising.

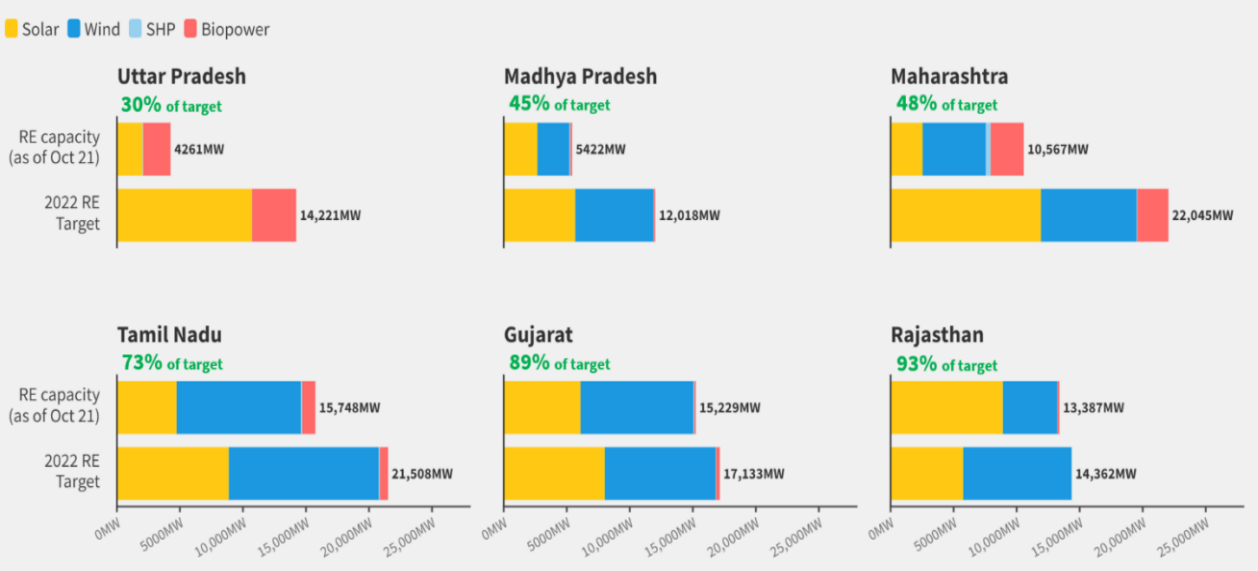

Figure 4. Renewable Energy Capacity in top 6 power demanding Indian states. Source: https://ieefa.org/wp-content/uploads/2021/12/Uttar-Pradesh_A-State-Critical-for-Indias-Energy-Transition_December-2021.pdf (accessed on 30 May 2022) [52].

Given the scarcity of traditional energy sources and rising environmental degradation, the generation of energy from renewable sources is a top concern. The government of UP intends to meet an ambitious goal of generating 16,000 MW of renewable energy by 2026–2027 and creating 20 cities with 10 lakh homes as "solar cities" in the coming

five years [53]. Uttar Pradesh's energy shift to renewable sources is growing fast, due to significant investment in renewable sources of energy [54]. The state has faced many challenges in the implementation of plans, which has made UP fail in reaching of estimated targets. The cancellation of renewable energy power purchase agreements (PPAs), and the disagreement gap between the government and power distribution companies became the most difficult challenges. The changing governments and their varying priorities and way of project implementation also made the situation critical. However, the current government is very serious in the implementation of green projects and expected to reach the future targets for the implementation of renewable energy projects.

2.3. Role of Education in Transforming Society

The primary goal of education is to acquire information, skills, and values, and also to learn good conduct in the various institutions that comprise the social structure. The socialization process helps people to adapt to a wide range of behavioral patterns and changing conditions in a variety of role contexts [55]. In comparison to conventional education, modern education has a fundamentally different focus and organization. Education is often regarded as the most effective tool for social transformation. Any culture may enact desirable changes through education to keep up with the fast advancement of technology [56]. In today's world, education quality and progress are critical. Education is more than just a "market for educational services"; it is also the most significant social institution through which the reservoir of knowledge collected by human civilization is passed [57]. Education is one of the important sources for building human capital in any society or nation and it should be provided to every citizen without any form of discrimination. The financial gaps between various groups are not always eliminated by the equitable allocation of educational resources, but they are at least lessened. Additionally, it contributes to raising a nation's standard of living.

Over different periods, society experienced significant change. Both individual and societal activities have resulted in the emergence of new ideas and societal transformations. Due to the diversity and integration of various cultures, languages, and faiths in a community, changes are unavoidable. Cultural changes occur as a result of these societal changes. Social change, which is a component of cultural change, is an adjustment to the composition and operations of social organizations in a society [58]. Education is the most important factor in human transformation. Education not only imparts information but also helps the individual and society transform their worldview and perspective [59]. It is also true that the educational sector is part of society at large, and therefore, has an important role in influencing social transformation [60]. The use of education as a tool for social change refers to how it enables individuals to effect change in their communities. Education modifies perspectives and conventional wisdom about social and economic issues [61].

2.3.1. Need-Based Education

The workforce desires the freedom to migrate across nations with greater ease, and globalization leads to the internationalization of education as institutions expand their frontiers beyond traditional national or regional limits [62]. There is an occasional demand for uniform competences, curricula, and courses in the global context; however, given the diversity of the population and educational ability, this may not be a possible or desired conclusion. Traditional academic cultures may be resistant to the adoption of outcome-based learning, preferring to emphasize scientific domains of expertise over an integrated program that aims to develop professional abilities [63]. Asia has undergone significant educational reform attempts during the previous decade. These initiatives share greater emphasis on accountability and the redefinition of educational goals, aiming at the evaluation of quality, focusing on learning outcomes rather than teaching performance, and shifting the purposes of examinations from evaluation and screening to assessment for learning and development [64].

Inclusion has been characterized as satisfying the learning requirements of the learners regardless of their social, economic, political or cultural background [65]. To achieve this objective, schools and faculty must rethink how they use resources, implement pedagogies, and remove obstacles that exclude or marginalize individuals, especially those with special learning needs [66]. Different terms (such as differentiation, modifications, adaptations, and accommodations) are used internationally to describe the changes and supports that have been implemented to address each student's unique requirements [67]. To achieve stronger, inclusive, and sustainable development, it is critically necessary to find new sources of growth. Economic, social, and cultural challenges can be solved via innovation at a low cost. Innovative economies are better equipped to sustain greater living standards because they are more productive, robust, flexible, and resilient [68].

2.3.2. Societal Education

Every nation that is committed to democracy needs social education, often known as education for life in society. Given the high rate of illiteracy in India, a sizable program of general education is crucial to the survival of democracy. A paradigm of social education that is primarily concerned with literacy promotion is far too limited. In India, thus, the scope of social education is expanded to include understanding of spoken and written language, as well as successfully integrating into society [69]. Every citizen should understand their role in society as an individual, as well as a member of the community at large. Since social education is an evolving idea, there will always be a need for experimentation and the acceptance of new methods [70]. The emancipatory tendencies that education has by its very nature are indicated and accepted more frequently as education spreads across a community. Higher education graduates feel validated in their emancipatory impulses and are free to act on them. This is the mechanism for social confirmation. Higher education's emancipatory tendency is "amplified" by social validation [71].

Education teaches us to see problems as challenges to be faced without fear; to be open to new experiences. The purpose and role of education are influenced by societal and environmental factors. The communal aspect of education stands out as the most important aspect of the interaction between education and society. For education to be effective, the social context must be present. Education and society are complementary. Without education, society cannot function and vice versa. Education has an impact on not just the learner but on the entire community, beginning with the individual's family. In other words, educational institutions with specified roles in the community have a responsibility to raise a sufficient number of productive individuals for a more successful society [72]. Then, in line with his idea, education is a phenomenon and a social process that occurs in society. If a previous hierarchical sequence is formed, society may be seen as the goal, and education can be seen as the essential tool for achieving this goal.

2.4. Capacity Building for Inclusivity

The basic right to an education based on equal opportunity is designed to allow a child's personality, skills, and mental and physical abilities to grow to their maximum potential [73]. A number of intricately interconnected cultural, social, and pedagogical aspects when combined, form communities of practice; they are necessary for effective inclusion in schools [74]. Collaboration between these communities maximizes schools' ability to provide every student with access to a comprehensive education. Parents and instructors receive little or no training to assist them in understanding how to effectively teach students with intellectual challenges [75]. Classrooms are becoming more and more diverse, allowing students from all backgrounds to interact and share their learning. Building teachers' abilities for inclusive teaching is a crucial area of policy in order to develop inclusive educational environments for all students. Education systems must make sure that instructors have ongoing support and preparation for inclusive teaching [76].

To support all students' learning and wellbeing, it is crucial to provide inclusive learning environments for increasingly diverse student populations. To achieve this, it's

critical to view diversity as a strength rather than a problem. Accepting diversity and inclusion via multi-dimensional and intersectional perspectives may also assist in the process of inclusive teaching by helping to recognize and satisfy the needs of individual students while appreciating their distinct identities [76]. Today, inclusive education is being conceptualized more and more as an all-inclusive strategy. By valuing each student's distinctive identity and needs, it strives to enhance the learning and wellbeing outcomes of all students [77]. There have been initiatives to support a cultural change in the concept of diversity in light of today's attempts to develop inclusive schools and communities for all engaged individuals. Diversity used to be seen as a challenge to be overcome in many nations, but it is now widely seen as a strength that should be fostered in both the classroom and society [78].

2.4.1. Current Status of Capacity-Building Activities

Education is a lifelong process that involves the continuous accumulation of experiences. It entails having the capacity for all the skills necessary for someone to be in charge of their environment, adjust to it, and carry out all of their duties. The focus of education in the twenty-first century is on process-based skill sets. The ability or intrinsic propensity of a person or thing to be self-sustaining is known as capacity. Due to outside information, capacity is built from the inside out. The process through which people and organizations acquire, enhance, and maintain the knowledge, abilities, and other resources required to perform their professions successfully or to a larger extent is known as capacity building [79]. Education systems may help produce talented individuals who can successfully develop and use knowledge, hence, improving the quality of work and capabilities that would benefit the country as well. Capacity building primarily provides an established or rising industry with the information and experience it requires for renewal and innovation, and eventually, national growth [80].

All other sectors of a society must invest in increasing their collective capacity in the fields of higher education and research. National Education Policy (NEP) 2020 in India is a significant move that will transform the Indian educational sector. This step will dramatically revolutionize the market and successfully adapt to the changing demands of contemporary times. The goal of educational restructuring is to remove the segmentation of education system by making larger interdisciplinary higher education institutions, creative people, and changing the educational and economic landscape of other nations [81]. It is always effective to take an integrated transformational strategy that incorporates institutional and human development elements. In terms of exchanging and disseminating knowledge, a collaborative working style is preferred [82].

2.4.2. Benefits of Capacity-Building Activities

Capacity building focuses on what programs and initiatives work best to strengthen the talents, skills, and knowledge of individuals who are directly involved in the development process [83]. Capacity-building techniques are designed to reduce reliance on outside expertise as providers of solutions to community problems. Capacity building helps people take action on their concerns by preventing them from becoming dependent on outsiders. Capacity building develops a sense of responsibility and empowerment among community partners, allowing them to have more say in their own future development. Capacity development activities are attentive to the nuances of a community context and culture, and as a result, they frequently result in more realistic and suitable community solutions. By acknowledging that development, learning and change happen in phases; capacity-building methods help collaboration in a courteous and efficient manner [84].

Capacity development is an approach that improves an organization's ability to carry out its goals by supporting competent management, robust governance, and a consistent commitment to attaining outcomes. Lastly, there are three possible outcomes that can happen as organizations build their capacity: developmental, transitional, and transformational [85]. The field of capacity building has attracted a lot of knowledge throughout the

years. Although the knowledge and expertise originate from various fields, they complement one another in a positive way. As a result, moving forward with capacity building, we will be better equipped to avoid making the same mistakes repeatedly that we have made over the years [86]. Evaluation of capacity-building efforts might be difficult. One issue is the difficulty in separating capacity-building efforts from overall project operations; an assessment of capacity building should be focused on the capacity-building efforts rather than being an assessment of whether or not the organization accomplished its objectives [87].

3. Methodology and Analysis

The research should go through a scientific process following predefined methodological approaches. The current research is following a deductive approach to explore variables and measure them statistically. The research is widely based on the concept of green consumption, which advocates the UNSDGs where Goal 12 is targeted to ensure sustainable consumption and production (SCP) patterns. The study assesses green consumer values, which is an explored and established variable. An instrument is implemented, which is tested earlier in the study. The instrument incorporates demographic data as one part, and the six items measuring green consumer values as another part [88,89]. These items assess respondents' green consumer values for six categories of renewable energy sources. So, in total, thirty items are used to gauge the overall GCVs for solar, wind, hydro, geothermal, and biomass RESs. The secondary data are used to build the base for conceptualization and the primary data have been tested statistically for the justification of the assumption.

The main theme of this section Is providing a clear picture of the process of this research, as well as a discussion over the applied tools and techniques. This study analyses primary data to identify gaps in Uttar Pradesh's understanding of renewable energy and its application. At the same time we should look at societal education as a tool to develop green consumer values among societies, aligning them with inclusivity in global development. This research applies a quantitative approach for the analysis of data and the interpretation of the statistical results. For this purpose, this study applies the statistical tests ANOVA, spectral analysis, and multilayer perceptron analysis [90–92] believing their best application is in this research. ANOVA is the acronym of analysis of variance, which is a statistical technique to measure the variance in opinion of some specific factor for the chosen variable (Table 1). Spectral analysis is the statistical technique that measures the behavior pattern periodically similar to the time series analysis. It is based on the spectral density analysis as a periodogram with the observed frequencies of responses (Figures 5–10) [93]. Multilayer perceptron analysis is an artificial neural network to feedforward generate outputs based on inputs with three different input, output, and hidden layers (Figure 11). The numerical values are the weighted sum of the perceptron inputs.

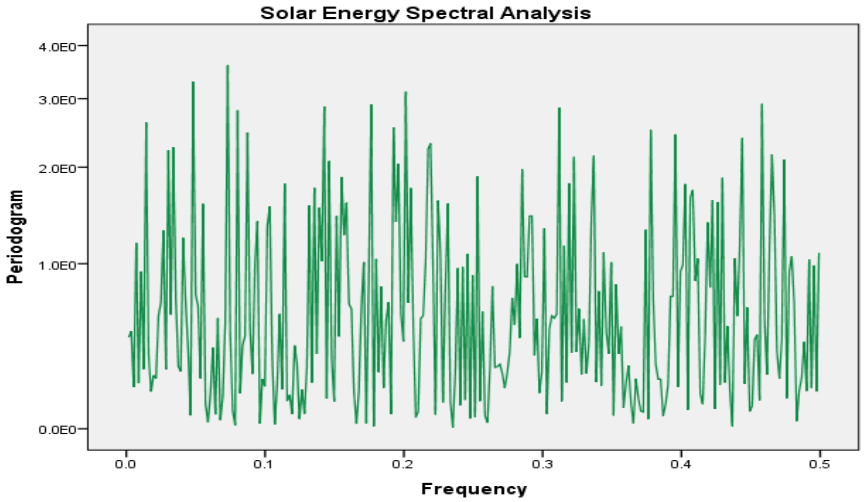

Figure 5. Solar energy spectral analysis. Source: forecasting spectral analysis SPSS by authors.

Table 1. Renewable energy sources ANOVA analysis with education.

Renewable Energy Sources	F Value	Significance Level 0.05
Solar Energy	0.694	0.596
Wind Energy	0.340	0.851
Hydro Energy	0.363	0.835
Geothermal Energy	0.226	0.924
Biomass Energy	0.217	0.929
Overall Renewable Energy Sources	0.136	0.969

Source: Author's Self Contribution.

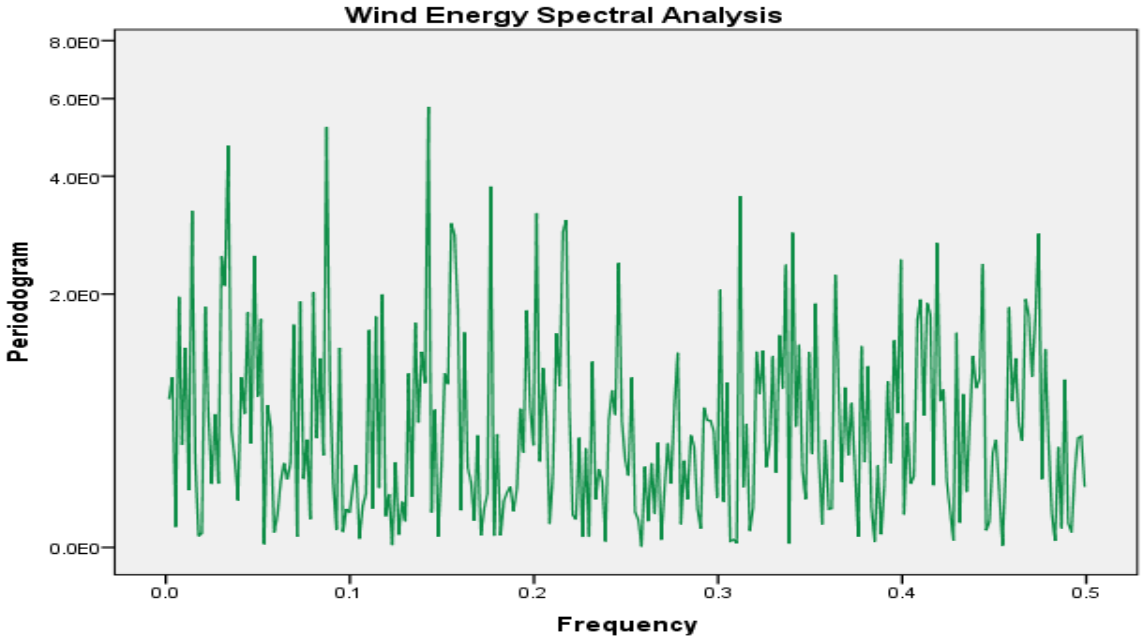

Figure 6. Wind energy spectral analysis. Source: forecasting spectral analysis SPSS by authors.

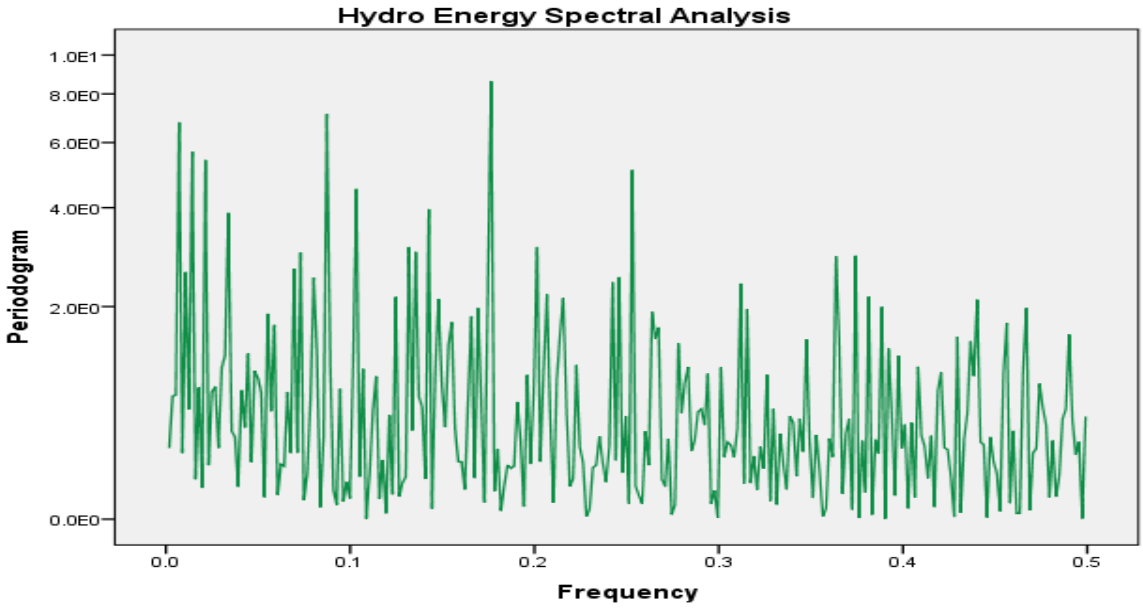

Figure 7. Hydro energy spectral analysis. Source: forecasting spectral analysis SPSS by authors.

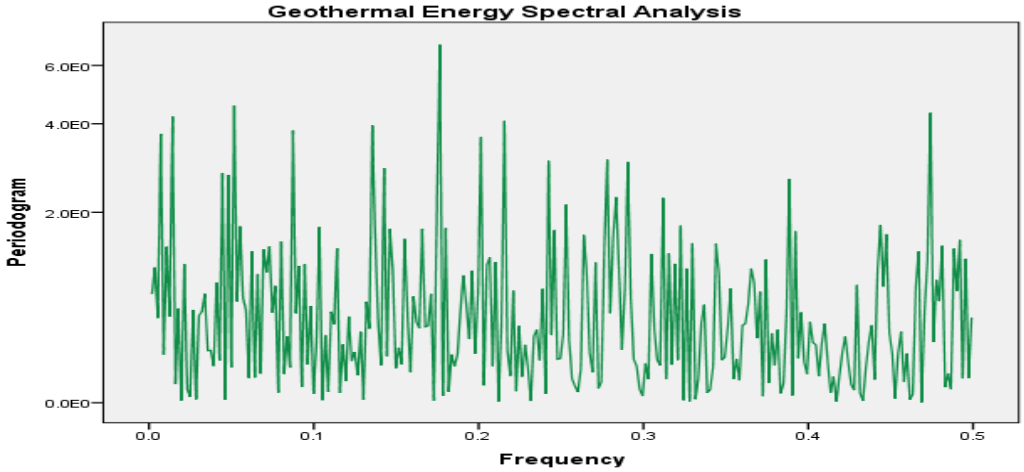

Figure 8. Geothermal energy spectral analysis, Source: forecasting spectral analysis SPSS by authors.

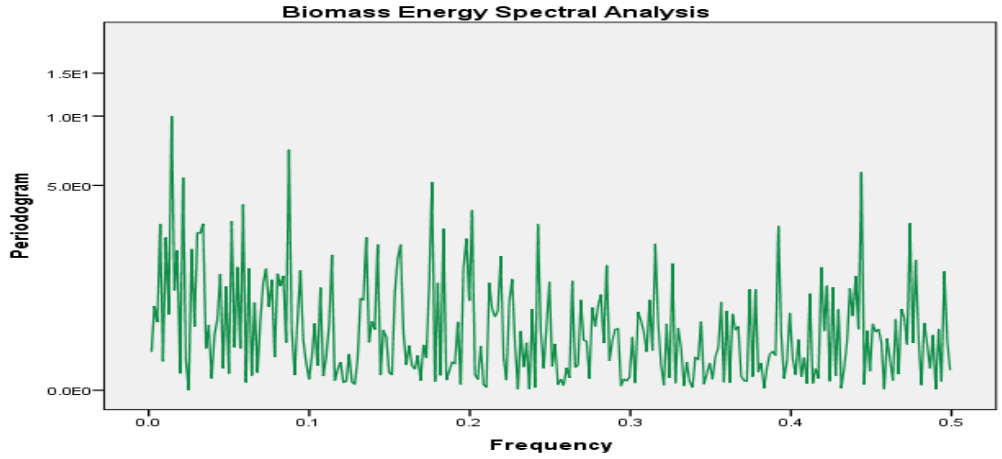

Figure 9. Biomass energy spectral analysis. Source: forecasting spectral analysis SPSS by authors.

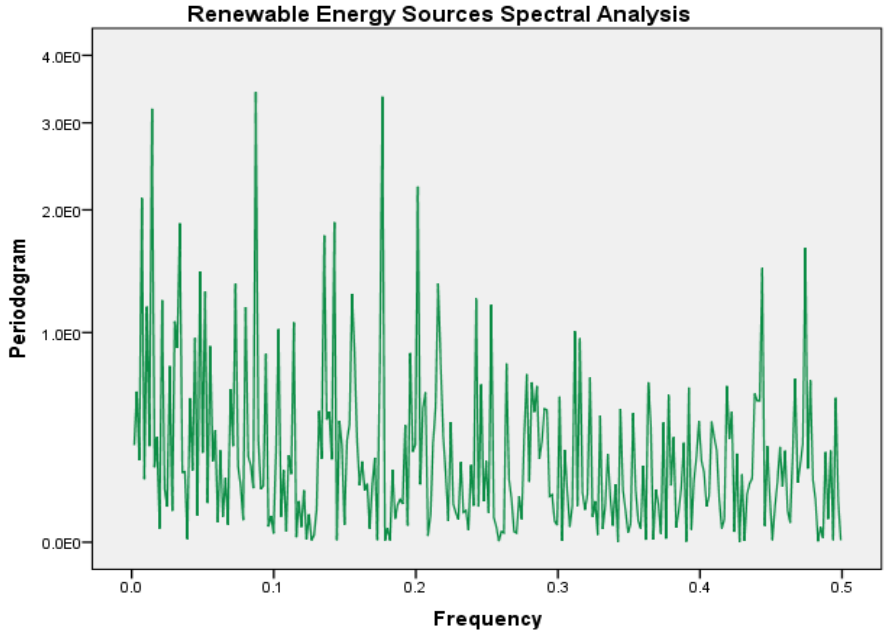

Figure 10. Overall Renewable Energy Sources spectral analysis. Source: forecasting spectral analysis SPSS by authors.

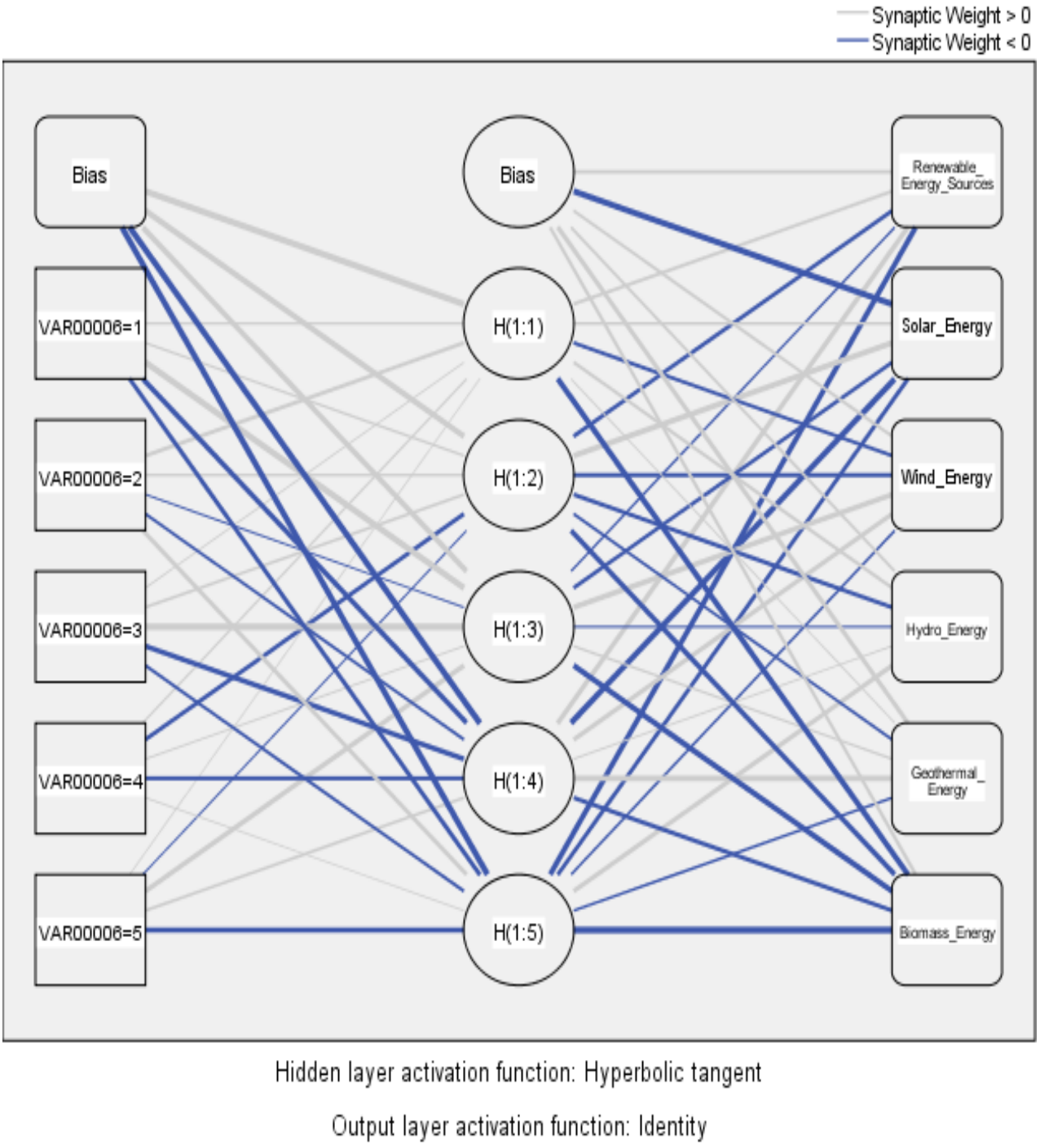

Figure 11. Multilayer perceptron network analysis. Source: neural networks multilayer perceptron network analysis SPSS by authors.

The study applied the simple random sampling of the probability sampling method, which is applied to collect a sample of 561 respondents, including rural and urban backgrounds from different districts of the UP state [91,93–95]. Gender, age, marital status, educational background, family income, and occupation are the seven demographical representations of the sample included for this study. Respondents were asked to fill up the survey questionnaire on the Likert scale. The author of the current study themselves took charge of conducting this research [96]. This study was conducted during January 2022 to September 2022. All items incorporated keep in mind the interrogation to answer research questions. Respondents were not much aware about the concept of GCVs and

RESs in most cases. A large sample of 688 respondents was collected, which was checked for the missing responses. After cleaning the collected data, the 561 valid responses were finally incorporated for the analysis. However, the originality of the research is influenced by green consumer values and extends the conceptual justification with a narrower and focused vision.

ANOVA for RESs with education as a factor is the foremost statistical analysis conducted justifying this research (Table 1) [93,95,97]. The five energy sources and the overall RESs for the GCVs were assessed based on the respondents' educational level, which was divided into five categories: secondary, intermediate, graduate, postgraduate, and PhD. The outcome for each was highly insignificant, and high F values. Solar energy shows the least value for significance 0.596 and the highest 0.694 F value compared to the others. The significance level and F values of wind energy were 0.851 and 0.340, of hydro energy were 0.835 and 0.363, of geothermal energy were 0.924 and 0.226, and of biomass energy 0.929 and 0.217 consecutively show a clear trend in the sequence. The overall renewable energy sources were 0.969 and 0.136, respectively for significance and F value. This analysis very clearly explains the importance of different renewable energy sources. A highly insignificant opinion shows that respondents do not have a similar opinion. Though all respondents are educated on different level, GCVs still need to be developed. Somehow, the understanding and importance of solar energy are known to respondents, but other renewable energy sources are not well known to them. The lack of information about other renewable energy sources lowers the overall F value of renewable energy sources.

Solar energy spectral analysis presents a diagram with periodicity and frequency, where the responses of respondents are presented showing each opinion to understand the trend (Figure 5). In this diagram, the periodogram represents the response and the frequency represents the different criteria chosen for the educational level. Solar energy respondents have provided a mixed opinion irrespective of educational level. The Intermediate level and PhD. level of responses are the most favorable compared to other categories. Other categories, however, show positive support for the acceptance of solar energy.

The spectral analysis of wind energy shows the distribution of responses on the periodogram and frequency matrix. The presented diagram for the outcome (Figure 6) depicts the trend of responses on the acceptance of wind energy. The different education criteria shows a different performance on the GCVs for wind energy. Wind energy is most popular among respondents with an intermediate level of education. A lower response rate compared to solar is seen as the overall response from all educational levels.

The hydro energy spectral analysis performed on the periodogram and frequency diagram displayed the frequency distribution based on dense or sparse opinion distribution (Figure 7). The responses are scattered at the lower level and very few reach the upper level. Intermediate levels of education again show higher responses compared to other levels of educational backgrounds. Responses are favored by other educational levels too, but the density is thinner compared to solar and wind energies on all educational levels. The responses decline, indicating a lack of support for and understanding of hydroelectric energy sources.

The intermediate level of education on the periodogram and frequency diagram is again favored in geothermal energy spectral analysis. Some of the responses are favored by other educational levels too. However, responses are generally lagging, with a downward trend (Figure 8). Based on educational levels, geothermal energy has a lower reach to respondents in terms of understanding and benefits when compared to solar, wind, and hydro energy sources. The sparse distribution of responses is higher compared to solar, wind, and hydro energies on all the educational levels, which is clearly visible and provides an understanding for the respondent's opinions.

The pattern of the analysis for biomass energy prediction using spectral analysis on responses from respondents on various educational levels is shown in (Figure 9). This is much lower regarding the respondents who performed poorly at all educational levels. Only a few responses reach higher than the mid-level of the frequency distribution. These

responses are insufficient to make the case for this energy source's high value. Respondents' understanding of biomass energy is at a nascent level, which requires special care to make them aware of its usage and benefits.

The final spectrum analysis accounting for all the previously mentioned renewable energy sources was performed (Figure 10). The outcome offers a new framework, which lowers respondents' participation and performance. Based on this pattern, it is possible to see and gauge the respondent's confusion. While most responses fail at the bottom, some graduate-level responses succeed at a higher level. These responses demonstrate that there is a significant knowledge gap among respondents on the use and advantages of renewable energy sources. Respondents' GCVs must increase in order to make them ecological consumers who care about the environment when making purchases.

Multilayer perceptron network analysis is conducted considering educational levels, i.e., secondary, intermediate, graduate, postgraduate and Ph.D., as predictors for measuring the performance of GCVs for five renewable energy sources solar, wind, hydro, geothermal, and biomass with an additional overall renewable energy Sources. The neural network analysis method applied with a multilayer perceptron network analysis using the Statistical Package for Social Sciences (SPSS) version 24 (Figure 11). The analysis outcome produces three different layers, predictor input layer, predicted hidden layers, and predicted output layers [90]. Predictor input layer took the five different levels of education, which are predicted as hidden layers. Hidden layers produce the predicted output layer. The analysis generates the connecting nodes, which is created based on synaptic weights. The higher the synaptic weights, the better the prediction; however, negative synaptic weights are presented too, providing a reality check on the different levels of education.

Multilayer perceptron network analysis further generated the statistical result of the analysis (Table 2), which is presented with modifications for a clear understanding. The analysis provides numerical values for synaptic weights. The negative values are removed to look at only the positive values, which are determinants of effects. The three similar but different layers are provided vertically one after another. The Predictor Input Layer predicts five hidden layers where H(1:1) includes all five levels of education, H(1:2) shows only those levels, H(1:3) shows four levels, and H(1:4), and H(1:5) show only one level, though educational levels are different for each hidden layer. Furthermore, these hidden layers predict the output layer. The five hidden layers predict the combinations of five renewable energy sources with an additional overall renewable energy source in a similar way. H(1:1) predicts three energy sources and overall renewable energy sources, though H(1:2) predicts only one energy source, whereas H(1:3) predicts two energy sources. At the same time, H(1:4) predicts three energy sources and overall renewable energy sources and H(1:5) predicts only one energy source.

Table 2. Multilayer prediction analysis.

Predictor Input Layer	[Education Level Secondary = 1]	0.076	0.083	0.398		
	[Education Level Intermediate = 2]	0.140	0.087			
	[Education Level Graduate = 3]	0.011	0.098	0.521		
	[Education Level Postgraduate = 4]	0.068		0.050		0.001
	[Education Level PhD. = 5]	0.005		0.252	0.105	
Predicted Hidden Layer		H(1:1)	H(1:2)	H(1:3)	H(1:4)	H(1:5)
Predicted Output Layer	Overall Renewable Energy Sources	0.118			0.273	
	Solar Energy	0.091	0.299			
	Wind Energy			0.271	0.215	
	Hydro Energy	0.127			0.038	0.227
	Geothermal Energy	0.03		0.076	0.323	
	Biomass Energy					

Source: Authors' self-contribution.

Combining these three layers, a pattern can be seen as the relationship between different educational levels and a specific renewable energy source. All educational levels

constitute H(1:1), which predicts solar, hydro, and geothermal energies, and the overall energy sources except from wind energy. Moreover, intermediate and graduate education levels H(1:2) predict only Solar with the highest synaptic weight of all predictions. Education levels graduate, postgraduate, and PhD. form H(1:3), predicting wind and geothermal energy sources. Only the educational level PhD. that forms H(1:4) shows the prediction for wind, hydro, and geothermal energies, and the overall energy sources, expect only solar energy. The last framing is from the graduate level of education, with a very small synaptic weight that makes it almost non-considerable; H (1:5) predicts Hydro Energy only. This analysis provides a clear depiction of the different educational levels' effects on the selection of specific renewable energy sources based on individual green consumer values.

4. Results and Discussion

Green consumer values have been studied in many earlier studies, but the poor understanding of RESs is the main constraint in the development of business models or a sustainable production and consumption model. An analytical result is presented based on the outcome of the primary data from the above section. The preceding sections also contribute to this section because they provide a solid foundation through the literature and the analysis relies on primary data based on a tested questionnaire from an earlier study. This section provides results for each renewable energy source, as well as the total renewable energy sources in separate paragraphs. Further paragraphs discuss the current status of the concept and the required solutions for solving the above stated research problem by reaching research objectives through answering research questions and validating propositions. The final paragraph summarizes the results explained in sections [95,97]. All the analysis is based on primary data, which is interpreted with statistical reasoning and supporting statements.

Solar energy as a renewable energy source is the most recent and promising research lead to make life on Earth more sustainable. This study uses the response data for GCVs on the solar energy and analyzes them based on the respondents' education level. The ANOVA outcome shows a significance level of 0.596 and F value 0.694. An insignificant result shows that opinions are scattered and varying on different educational levels. At the same time, the F value shows comparatively better acceptance for solar energy. A similar result obtained from spectral analysis on periodicity and frequency shows a mixed opinion irrespective of educational levels. A higher educational level shows more acceptance for the usage of solar energy, though almost all educational categories are positive towards the consumption of solar energy and they are able to correlate their GCVs with this renewable energy source. Multilayer perceptron analysis shows that the solar energy combination with two hidden layers H(1:1), and H(1:2) has a higher synaptic weight compared to other weights, including the maximum educational levels.

Wind energy is assessed on similar parameters as solar energy measuring the respondents' thoughts and personal GCVs connectivity with respect to this energy source. The ANOVA result is the first statistical test that reveals the variance in opinion based on the educational level, as the factor provides a highly insignificant level 0.851, and the F value 0.340 shows the variation in opinion. Based on a highly insignificant level of sampling, it is clear that respondents have widely disparate views on wind energy. A lower F value indicates that respondents for wind energy have less understanding than those for solar energy. A spectral analysis of the distribution of responses on the periodogram and frequency matrix is used to justify the research process. As a result, different education criteria with different performance levels are provided. Intermediate-level-educated respondents were able to connect their GCVs with wind energy. Wind energy is associated with two hidden layers in multilayer perceptron analysis, H (1:3) and H (1:4), where the predictor for H (1:4) is nearly zero. So, the outcome can be considered only for H(1:3) with the three highest levels of education.

The next evaluation in this series compares the GCVs of respondents' consumption of hydroelectricity. Consumers are usually educated but their understanding of RESs

and GCVs must be tested. ANOVA analysis shows a highly insignificant level 0.835 and 0.363 as F value. Variations in opinion are high compared to the other two energy sources, solar and wind, with a lower F value as compared to solar but lesser than wind energy. This shows that the educational level of respondents is critical factor in understanding individuals' opinion over GCVs connectivity with hydro energy. Furthermore, the spectral analysis shows the distribution of opinion. Responses are mostly made at a lower level of education. The density of responses is compared to solar and wind at all educational levels and displays poor support to hydro energy. The last statistical test validating the outcome from the above two statistical tests is multilayer perceptron analysis. Here, hydro energy demonstrates the relationship between the three hidden layers H(1:1), H(1:4), and H(1:5) and the various educational levels. The hidden layer H(1:1) is the only accepted layer, including all academic levels, though the synaptic weight is smaller compared to solar and wind energy. Hidden layers H(1:4), and H(1:5) are not better accepted because of the lower value of predictors and the lesser involvement of educational levels in prediction.

Geothermal energy is also assessed on the same criteria as solar, wind, and hydro energy, including the respondents' opinions and personal GCV connectivity. As a result of the ANOVA, a highly insignificant level 0.924, and F value 0.226 is the first statistical test to show the variance in opinion based on educational level, indicating a difference in opinion. Based on a high level of insignificance, it is evident that the respondents' opinions on geothermal energy are highly varied. A lower F value indicates that the respondents' understanding of this energy is less advanced than their comprehension of solar, wind and hydro energy. A spectral analysis result provides a narrower scope for geothermal understanding and benefits. At all educational levels, there is a sparse distribution of source compared to solar, wind, and hydro energies. The multilayer perceptron analysis is the final support to outcomes exhibiting a correlation with the three hidden layers H(1:1), H(1:3), and H(1:4). Despite the fact that the synaptic weight is very low, only H(1:1) can be considered, as predicted by all educational levels. With only one predictor with a very low value, hidden layers H(1:3) and H(1:4) are unacceptable.

Biomass energy is the last energy source out of the five renewable energy sources considered in this study, which compares respondents' GCVs for this energy use. To understand respondents' GCVs with respect to this energy, an ANOVA analysis was performed. A very high degree of insignificance 0.929 and a much lowered F value 0.217 compared to the other four solar, wind, hydro, and geothermal energy sources was displayed. There are more variations in opinion, which demonstrates that the respondents' level of education is an impactful consideration when determining how each person feels about the connection between GCVs and biomass energy. Additionally, the distribution of opinions is shown by the spectral analysis. A much lower percentage of respondents shows a very poor performance on all educational levels, making an assumption that these responses are not enough to make the decision, and their understanding on biomass energy needs to be shaped. The multilayer perceptron analysis provides the final outcome and support for the acceptance of this energy source. Biomass energy demonstrates no connection with any hidden layers on various educational levels. As a result, none of this is accepted for prediction, despite the fact that the predictor and hidden layers both have zero or lower synaptic weights.

Overall, renewable energy sources represent all five energy sources together, and are assessed for respondents' opinion on their understanding of GCVs altogether. Many contemporary studies suggest that the only way to ensure the sustainability of life on Earth is to use renewable energy sources. All of the analysis was based on five different levels of education. The results of the ANOVA have the highest insignificant level 0.969 and the F value 0.136 is the least among all. It is evident that the respondents have varying opinion and lesser trust with overall renewable energy sources. Regardless of ANOVA, a similar result from spectral analysis on periodicity and frequency shows a divided opinion with a different structure and a lowered involvement of respondents. The responses reflect large gaps in the understanding of renewable energy sources with their GCVs. The last one is

the multilayer perceptron analysis on the combinations of predictors, hidden layers, and predicted values. There are two hidden layers formed H(1:1) and H(1:4) with a higher synaptic weights, though, H(1:4) cannot be accepted as the only predictor with a very poor synaptic weight. So, only H(1:1) is acceptable when all educational levels are involved as predictors.

A critical discussion is provided here based on the above presented results clarifying the framed research questions with enough evidence to provide satisfactory answers. Here, on the basis of the results mentioned in the previous section, a comprehensive analysis is offered, explaining the research questions with sufficient support. Multilayer perceptron analysis validates the first research question, "Research Question 1," which states that consumers are aware of GCVs and associate them with some renewable energy sources. Consumer attitudes toward renewable energy sources are improving, and respondents believe that it is critical to develop and create more solar power. All respondents, regardless of their level of education, agreed that solar energy is the most widely acknowledged renewable energy source. The response to the second question, "Research Question 2," is answered through the ANOVA analysis. The results of the ANOVA have an F value of 694 and a significance level of 596. A negligible outcome demonstrates that views are diverse and dependent on educational attainment. The F value also indicates a comparable improvement in the acceptability of solar energy. Therefore, it reveals a significant variance and gaps in consumer opinions based on educational attainment. Each renewable energy source receives a distinct response from people on various educational levels. The third question, "Research Question 3," is addressed based on spectral analysis to ensure that consumer awareness of GCVs for RESs can be increased. It is observed that regardless of educational levels, the spectrum analysis on periodicity and frequency shows a mixed perspective. Although practically all educational groups are favorable toward solar energy consumption and are able to associate their GCVs with this renewable energy source, a higher educational level reveals greater approval for its use. This can be achieved by societal education in a more effective manner to foster green consumer values with regard to solar, wind, hydro, geothermal, biomass, and other renewable energy sources.

A detailed discussion further continued justifying a pre-stated proposition because only research questions are not enough; rather, testing propositions to justify assumptions is also required. The first proposition in this series, "Proposition 1," is statistically tested and proven through multilayer perceptron analysis that GCVs for RES exist among all energy consumers, though the understanding of different energy sources varies depending on education level. The second proposition, 'Proposition 2', shows enough statistics as ANOVA, spectral analysis, and multilayer perceptron analysis that education is an important influence that impacts GCVs in the consumption of RESs. All the above statistical analysis justifies that different educational levels have a different approach to each RESs. The third proposition, 'Proposition 3', is very clear with the multilayer perceptron analysis; the renewable energy reliance can be established by education on GCVs for capacity building. We live in a society, and exposing education from a societal perspective can result in a positive shift in consumer understanding of the long-term benefits of renewable energy sources.

5. Conclusions and Future Research

To make the outcome understandable, a continuation of research must have a strong foundation justifying the overall study in a snapshot. A good research should provide a summarized report of the broad study including all key issues of the study. This section provides the conclusion drawn from the research and the roadmap for future research. The organization of the research through the various sections provides a stepwise move with clarity on the adopted research process. The research's theme is the green consumer values looking at renewable energy sources, which we mostly looked at earlier with specific products or services or their offerings. The Section 1 presented three research questions and three research propositions, which were answered and justified in the Section 4 [98]. The

answers to research questions and propositions are justified based on the ANOVA, spectral analysis, and multilayer perceptron analysis statistical tests with justified precision values.

Research problem initiated in the beginning of the paper have reached an end with a justifiable statistical clarification. The underlying research problem, a specific understanding of the long-term benefits of renewable energy for a sustainable life, is addressed through societal education. Education is the most vital tool to strengthen everyone, which is an undeniable statement. However, there are different modes of education in an institutionalized manner, but the implementation of understanding the benefits of renewable energy sources are not reflected among consumers. This study states the solution to this problem, which is that green consumer values are learning that can be nurtured by societal education. Green-consumer-value education can help society understand the benefits of renewable energy. This can boost their morale and enhance their energy reliance with RESs. Uttar Pradesh's population has a high potential to adapt to a greater influx of training and development, which can better shape society and lead to capacity building.

The objectives, which were stated in the introduction and provided as the conclusion in this section, and are the foundation of this research. This paragraph provides justification for the goals stated earlier in the study. This study aimed to justify the belief in nurturing GCVs for the consumption of RESs as the main research objective. The research outcome has dedicated evidence of the importance and impact of education on an individual's understating of different renewable energy sources. ANOVA, spectral analysis, and multilayer perceptron analysis ensures the requirements of education. So, green consumer values can be nurtured for the consumption of renewable energy sources through societal education. Furthermore, the sub objectives are embedded with the main objective. However, the research provides clarity for each subobjective too. The current status of GCVs among consumers in UP for RESs is very poor. They are lacking in understanding the usage and benefits justified in the analysis section. The multilayer perceptron analysis demonstrates the critical importance of developing connectivity among populations in the cultivation of GCVs for RES. Education is the most powerful tool to bring change, and inclusive capacity building is supported with the statistical tools of ANOVA and spectral analysis.

Future research on this topic will be conducted, with the study being implemented for practical application. Furthermore, the research will concentrate on the implementation of capacity-building exercises for societal inclusivity in renewable energy capacity-building by cultivating green consumer values. Insights are leading to a synthesis of actions, such as social media usage for influence, an emphasis on shaping good habits, the domino effect at the heart of action, communication decisions to connect with emotions, and most importantly, a focus on experiences over ownership, which can be a key to implementing change. The next study in this series will focus on the application of multi-criteria decision analysis [99–102], and the application of cognitive neuroscience [88]. With the use of Python's word cloud, a qualitative analysis may be performed as well. Nevertheless, the scope of the research can be expanded to include more variables, reshaping the problems and providing tested solutions.

To put things into perspective, the current energy scenario is difficult. Whether governments are primarily focused on promoting economic development, environmental protection, or energy supplies, it is obvious that if current energy trends continue, there will be a wide range of negative effects at best, and a serious global threat to the survival of humanity at worst. In many respects, the scenario in developing nations is more challenging than it is in developed economies. In addition to the apparent resource limitations, a sizable portion of the population is unlikely to have access to essential energy services. Many renewable energy sources are anticipated to continue to be more highly priced than their conventional counterparts in the foreseeable future. Strong market failures and impediments frequently hinder efficient technologies. The ability to change incentives and remove those obstacles today depends more on political will and cooperation than it does on having enough resources.

The most crucial resource for advancing society is education. It provides individuals with the necessary knowledge, training, and skills, and enables them to comprehend their obligations to their communities and society. Education broadens one's perspective and attitude towards things. It is believed that education and training foster the GCVs. The specific comprehension of the long-term advantages of renewable energy for a sustainable existence must also be assessed since a society may be better formed, and its reliance on RESs for energy rises the more training and development it receives. The advantages of renewable energy are astounding. Even though we may not be able to completely transition to renewable sources soon (a process that requires the balancing of renewable energy, as well as other sources for the time being), it is crucial that we think for the future.

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