

Community Entrepreneurship Potential for Renewable Energy Adoption in Trinidad and Tobago

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ABSTRACT

The urgent need to mitigate Greenhouse Gas (GHG) emissions and combat the devastating impacts of climate change has led many countries to focus on renewable energy (RE) transition. This paper explores the extent to which communities can produce RE through community energy (CE). It identifies the barriers and drivers to RE implementation within their community, through local entrepreneurship in Trinidad and Tobago (TT). Through reviewed literature and considering factors unique to TT, a survey instrument was developed, validated, and administered to key stakeholders in communities throughout TT. The survey revealed that the respondents' demographic characteristics were diverse, with a strong sense of belongingness and rootedness to their communities. Economic barriers, particularly the high cost of RE equipment and low electricity cost were identified as the main concerns, while technological barriers for siting solar farms were also noted. A lack of confidence in the system's capability to educate and train in RE technologies was indicated. Local control and participation were well-favored, with a strong acceptance that community owned RE can bring about sustainable employment and add value. Results of the survey revealed that barriers to RE in TT are those of trust even within the communities, the sometimes-unfriendly business environment, and the discouragement created by strong administrative control and bureaucracy. The findings highlight the need to promote and facilitate local control and participation in RE projects to create sustainable employment opportunities. This study suggests the need for policy and regulatory frameworks that support community-based entrepreneurship in the RE sector and encourage the participation of communities in shaping the unavoidable energy transition. Thus, it is useful to inform policy development for CE and adoption of RE among communities in TT.

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1 INTRODUCTION

TT, also known as a Small Island Developing State (SIDS) with an economy based on oil and gas production, is experiencing challenges due to low oil production and fluctuating oil and gas prices in the world market. TT oil production went from 243,000 barrels per day (B/D) in 1980 to 60,000 B/D in 2021¹. The availability of fossil fuel resources has resulted in power generation rates in TT being among the lowest in the region, which is now considered unsustainable². Although fossil fuels continue to play a dominant role in the supply of energy in the world today, it is associated with several negative impacts, including carbon dioxide (CO₂) emission, which is a source of air pollution and the most significant driver of global climate change³. As low-carbon sources of energy such as RE become readily available, the world needs to transition away from fossil fuels rapidly. TT is a signatory to the Paris Agreement and the Country's Nationally Determined Contributions (NDC), which sets to reduce overall carbon dioxide emissions by 15% (equivalent to 103,000,000 tonnes of CO₂e) by 2030 from a Business as Usual (BAU) 2013 baseline⁴. TT, as documented in its National Development Policy Vision 2030 document, aims to develop, and implement appropriate policy instruments to create the environment required for the development of RE technologies at the national level⁵.

TT's geographic location near the equator makes it favorable for solar energy generation of approximately (1,600-1,800 kWh per kWp per year and a land wind power density distribution potential at 100 ft of approximately 260-420 W m⁻²)⁶. Table 1 shows some key indicators associated with TT.

Table 1. TT's key indicators⁶

Total area / Evaluated area	5,130 / 5,130 km ²
Population (2018)	1,389,858
GDP per capita (2018)	US\$ 16,844
HDI / rank (2017)	0.78 / 67
Electricity consumption per capita (2014)	7,093 kWh per year
PV installed capacity (2018)	3 MWp
Average theoretical potential (GHI) / rank	5.385 kWh m ⁻¹ / 75
Average practical potential, level 1 / rank	4.349 kWh per kWp / 93
PV equivalent area	0.87%
PVOUT seasonality index (country range)	1.19 (1.14-1.24)
LCOE average (country range)	0.10 (0.09-0.10)

In many Western countries, RE has emerged through decentralized and small-scale organizations which are often categorized as CE, unlike energy production which occurs at commercial levels⁷. Despite the advantages of CE which include environmental, social transformations and civic participation⁸, CE development in RE adoption is limited to developed nations, as governments of developing countries such as TT do not have comprehensive strategies or plans in place to address the development of RE systems and CE initiatives⁹. Although CE projects frequently originate as niches with limited scope, they are significant examples of socio-economic innovation¹⁰. Several international studies have looked into the potential and barriers of CE in promoting RE technologies in the Caribbean^{11,12,13}. CE projects such as community solar experienced a major barrier due to the market dominance of corporate, large-scale developments rather than community solar projects, whose success depends on the state implementing better community policies and regulations. Other barriers involved conflict between individual community members on how the organization should function, and some not wanting a project erected close to home¹⁴. A high level of government autonomy has proven to be a drawback since the power of grassroots innovations and local entrepreneurship are required for success^{14,15}. Another case study examining entrepreneurship for RE in Morocco revealed that unclear policies and a heavy reliance on foreign investments resulted in problems related to coordination, cooperation, and collaboration between stakeholders and political groups¹⁶. Consequently, banks and financial institutions are not motivated to participate in such projects. Although the high cost of electricity and the abundance of solar and wind resources in Cuba drive RE uptake, the country faces challenges for RE development due to lack of finance and strict government control¹⁶. The high capital cost associated with RE technologies and the Socialist political system are hampering development, as to date, RE projects are government-controlled and executed by foreign investors¹⁶. To add, a survey based study by Seetharaman et al.¹⁷ identified barriers that inhibit RE deployment from a broader business perspective, which also restrict CE entrepreneurship. It was found that certain barriers directly affect one another. In descending order, the most influential

barriers to RE are regulatory, technological, and social, with economic barriers existing due to sociality, technology, and regulations. Research using survey questionnaires and the Likert-type scale was also conducted in communities in Europe and the drivers of CE identified were categorized in descending order of importance as follows: ethical and environmental commitment, local investment and income generation, influencing local energy policy, lower energy cost and reliable supply, strong cooperative enterprise history and tradition in your region, supportive policy environment and cooperative enterprise, sufficient average regional personal income and/or wealth, and supportive policy environment for regional energy systems deployment¹⁸. The outcome of the study supports the work conducted by Brummer¹⁹ which concluded that environmental impacts are more critical than financial impacts in CE. A summary of the various barriers and drivers obtained from previous studies is shown below in Table 2.

Table 2. Barriers and drivers to community energy initiatives in TT

Barriers	Drivers
Lack of awareness ²⁰	Prospects of a healthier environment ¹⁹
Rejection by individual citizens and groups ²¹	Ethical ²²
Lack of experienced professionals ²³	Local investment ²⁴
Lack of sustained approach by successive administrations and TT cultural factors of values, attitudes, and behaviors (VABs) ⁵	Income generation ²⁵
Poor values, attitudes, and behaviors (VABs), in the case of TT ⁵	
Political, in the case of TT ⁵	
Lack of transparency and trust ¹⁴	Influencing local energy policy ²⁶
Competition from fossil fuels ²⁷	Local control ¹¹
Lack of economic motivation, in the case of TT ²	Lower cost for community RE ⁷
Lack of financial institutions ²⁸	Tradition in your area ¹⁴
Intangible cost ¹³	Supportive policy environment ²⁹
Space constraint ³⁰	Regional personal income and/or wealth ³¹
Regulatory ³²	Supportive policy environment ¹⁴
Energy policies ³³	
Corporate laws ^{7,34}	

For TT, specific barriers to RE implementation include limited economic motivation to explore and expand RE generation due to the availability of oil and gas resources and the provision of subsidized electricity (electricity rates at US\$ 0.04 per kWh compared to the regional average of US\$ 0.330 per kWh)². Other barriers include the lack of sustained approach by successive administrations, as well as TT cultural factors of values, attitudes, and behaviours (VABs)⁵.

Currently, there is an existing information gap pertaining to drivers and barriers associated with CE potential for decentralized RE systems in TT (CEDRETT). The drivers and barriers for the integration of RE technologies in any particular country is determined by the country's unique economic, sociological and cultural characteristics in which, TT may be distinct from those identified in the literature review in other countries. Stakeholders in the energy sector in TT have limited expertise and knowledge of this form of entrepreneurship in RE development and the use of research-based policies to implement required strategies for RE penetration.

To identify the opportunities and barriers for community participation and entrepreneurship in RE in TT, the methodology of a non-experimental, descriptive designed survey instrument was utilized, consistent with previous studies^{17,18,35,36}. The survey was validated by peer reviewers, subject matter experts and industry stakeholders, which was then administered to key participants and eventually, the results obtained were analyzed and reported.

2 METHODOLOGY

The flow chart shown in Figure 1 describes the research methodology used in this study. The methodology adopted in this paper is consistent with other similar research^{17,18,35,36}. Based on the literature review, the drivers and barriers of CE for RE implementation in other jurisdictions were compiled and shown in Table 2. This provided the basis for the development of the survey instrument (see Appendix 1) to determine the relevant drivers and barriers of CE for RE implementation in TT. Questions were formulated based on a neutral statement to minimize the possibility of biased answers. The survey instrument was validated by peer reviewers, subject matter experts and industry stakeholders, which was then administered to key participants in the communities of TT.

The final questionnaire was distributed to 163 participants in the community for data collection over a period of five (5) weeks. A total of 51 completed responses were received, representing a response rate of approximately 31%. The questionnaire was designed to gather data as follows: questions 1 to 5 - demographic data; questions 6 to 11 -

information on the levels of awareness and perceptions of RE among the communities in TT; questions 12 to 17 - government commitment and consistency; questions 18 and 19 - RE infrastructure in terms of education and training facilities as well as land availability; and questions 20 to 27 - benefits of community owned RE.

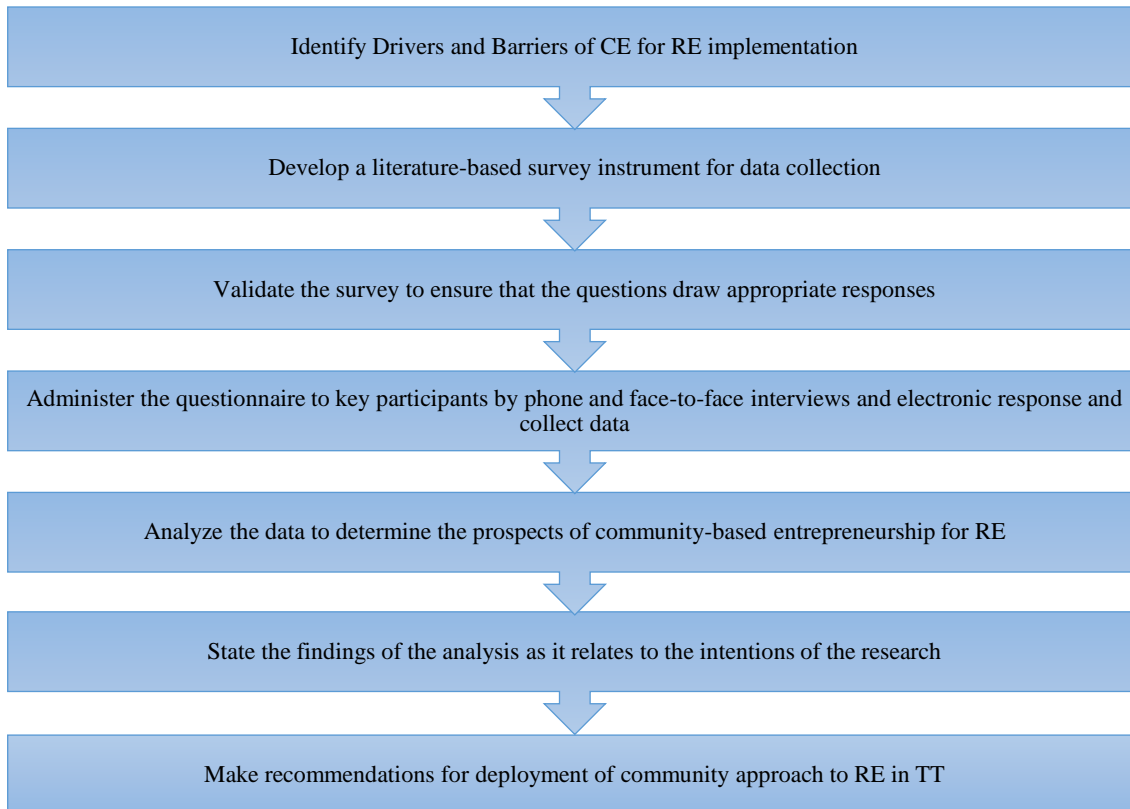


Fig. 1. Methodology flowchart.

3 RESULTS AND DISCUSSIONS

To determine the applicable drivers and barriers for CE and RE adoption in TT, a survey instrument was developed containing critical success factors obtained from literature review and considering the unique characteristics of TT. The questionnaire was validated and administered to members of the community in accordance with previous studies^{17,18,35,36}.

A survey instrument, consisting of 27 questions (see Appendix 1), was administered to members of the community. With regards to the demographics data obtained via questions 1 to 5 of the survey instrument, it was found that approximately 60% of respondents were between the ages of 20 to 50 years, arguably their most productive years of life, with the remaining 40% were between the ages of 60 and 80 years old.

Also identified was that the respondents' education level was evenly distributed, with over 75% completing tertiary education – either degree or non-degree, reflecting the capacity of the respondents to answer appropriately as informed individuals.

Fig. 2 shows that respondents spanned most communities, except for the growing population in housing developments, which appeared not well-represented.

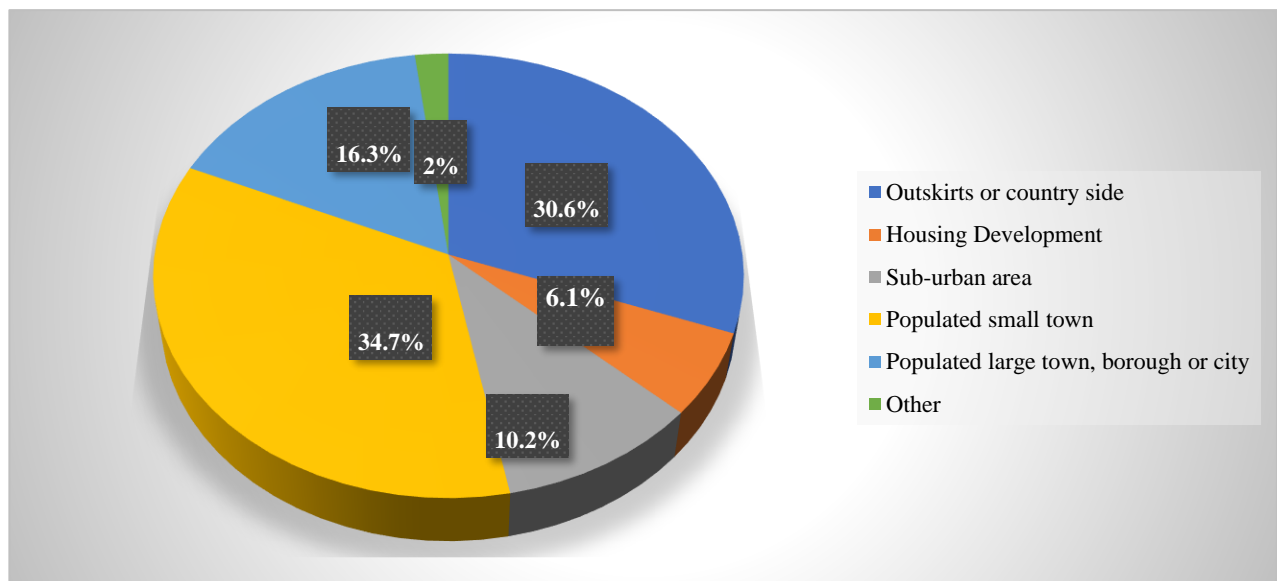


Fig. 2. Community type for respondents.

Fig. 3 indicates that almost 77% of the respondents have been residing in their community for more than 20 years, and 93% for more than 10 years, reflecting a sense of belongingness and rootedness to the community, which is important for CE development. This attachment to place is also reflected favorably in question 8, where over 76.4% of the respondents agreed or strongly agreed that they do have a strong sense of community attachment. This was also found to be similar for Reubenkoge, Germany¹⁴.

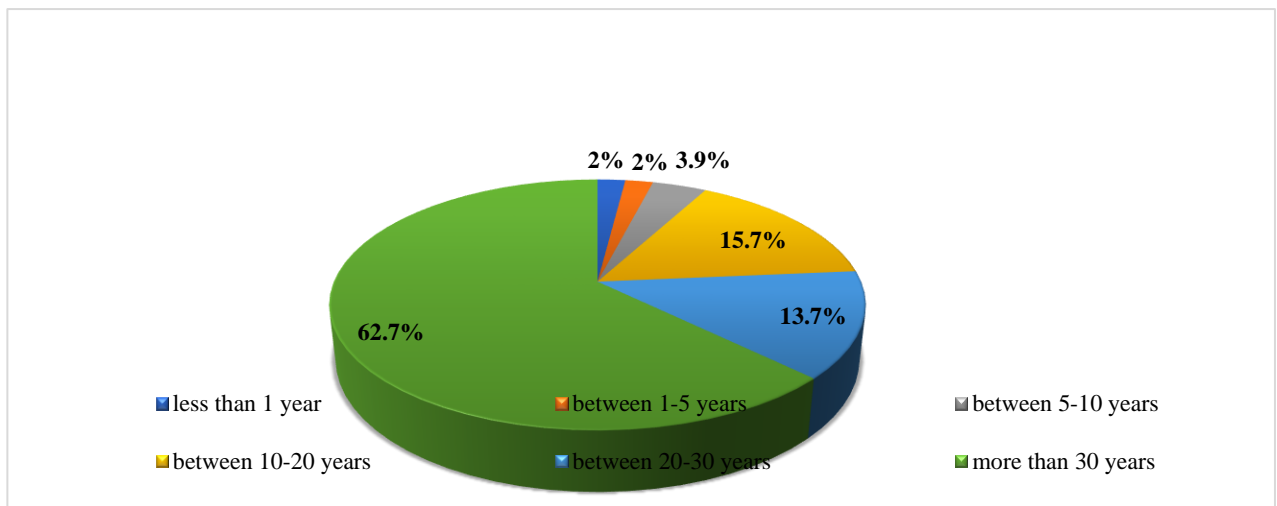


Fig. 3. Duration of residence in communities.

Fig. 4 shows that the occupation of the respondents was quite evenly distributed amongst the sectors surveyed, except for the working class - labor force or auxiliary staff. This sector may have to be reached by more traditional methods.

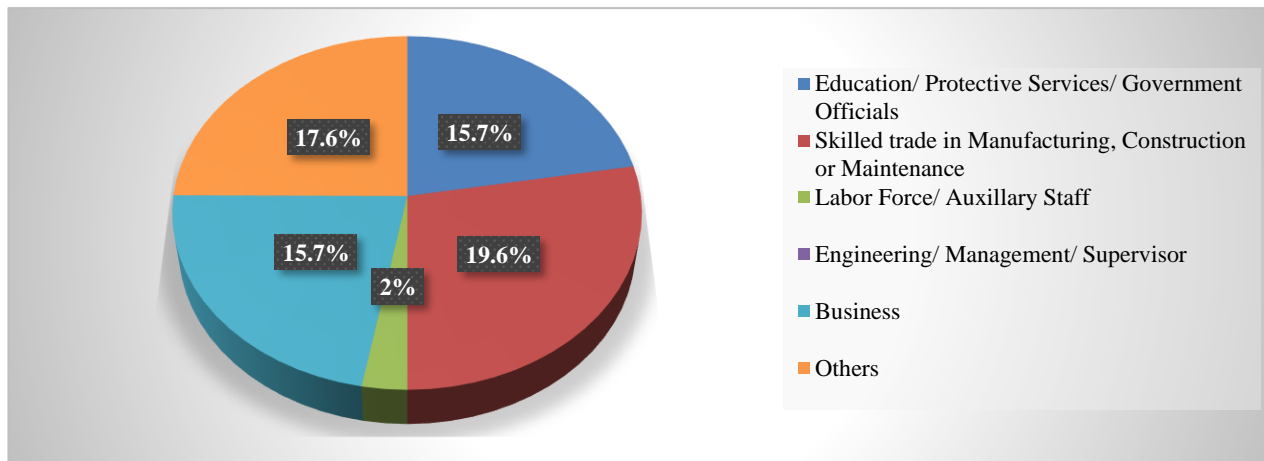


Fig. 4. Occupational categories of respondents.

Fig. 6 presented a condensed version of Fig. 5, merging the ‘agrees’ on one curve and the ‘disagrees’ on another, providing a clearer comparison between agree and strongly agree, and disagree and strongly disagree.

Questions 6 to 11 were designed to capture information on the levels of awareness and perceptions of RE among the communities in TT. For question 6, almost 60% of the respondents indicated that they were aware of RE, with 30% indicating moderate awareness or a lack of in-depth knowledge in the field of RE. For question 7 which addressed TT's socio-economic status, approximately 94% either agreed or strongly agreed that the country is not where it should be in terms of energy transition. Most of the respondents showed a positive attitude towards RE and community involvement in RE projects. About 76% of the respondents in their response to question 8, agreed or strongly agreed that they had a strong sense of community attachment and would be willing to participate in a community RE project in their area. Also, 78% of the respondents agreed or strongly agreed that they would support the citing of RE projects close to their home even if it affected the aesthetics of the landscape (question 9). In comparison, 74% of the respondents agreed or strongly agreed that producing RE in their community would not affect employment in other areas of the energy sector (question 10). However, 61% of the respondents agreed or strongly agreed that poor work ethics and low productivity rate in TT would negatively affect community RE development (question 11), indicating some doubts about the feasibility and sustainability of such projects.

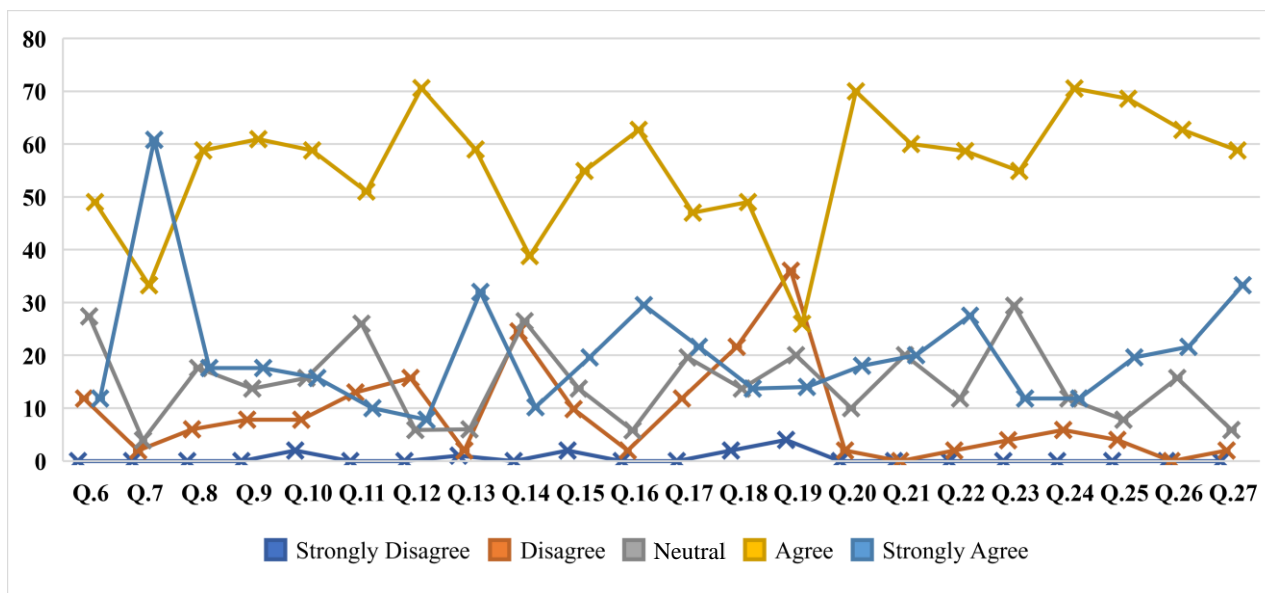


Fig. 5. Graphical representation comparing all five scales of percentage responses.

Questions 12 to 17 aimed at capturing information from respondents about their perceptions of government commitment and consistency. The respondents expressed a high level of concern about the trustworthiness and consistency of the government, alongside the business sector in relation to RE development. Interestingly, a similar situation exists in the case of Morocco where this hindrance is further reinforced in the 100% RE report, which laments a strong lack of a clear and ambitious vision to integrate RE into a holistic economic plan for the country²⁸. It was found from the survey results that about 78% of the respondents in response to question 12, agreed or strongly agreed that the lack of trust and transparency in the area of entrepreneurship in TT may prevent RE development in their community. Also, with regards to question 13, 91% of the respondents agreed or strongly agreed that government inconsistencies (especially when there are governance changes), create uncertainties that can discourage investments in community RE development. Furthermore, 92% of the respondents in their response to question 16 agreed or strongly agreed that there is a lack of financial institutions and insufficient financial incentives to facilitate entrepreneurship in RE. Also, 68% of the respondents agreed or strongly agreed in question 17 that TT lacks adequately trained personnel or workforce for RE deployment, indicating a need for more education and training. In their response to question 14, only 49% of the respondents agreed or strongly agreed that the low cost of electricity in TT, currently produced from fossil fuels, will hinder the development of RE, suggesting some awareness of the environmental and social benefits of RE. Meanwhile, 74% of the respondents in question 15, agreed or strongly agreed that the high capital cost for RE equipment such as solar panels and storage batteries presents a setback for RE investments.

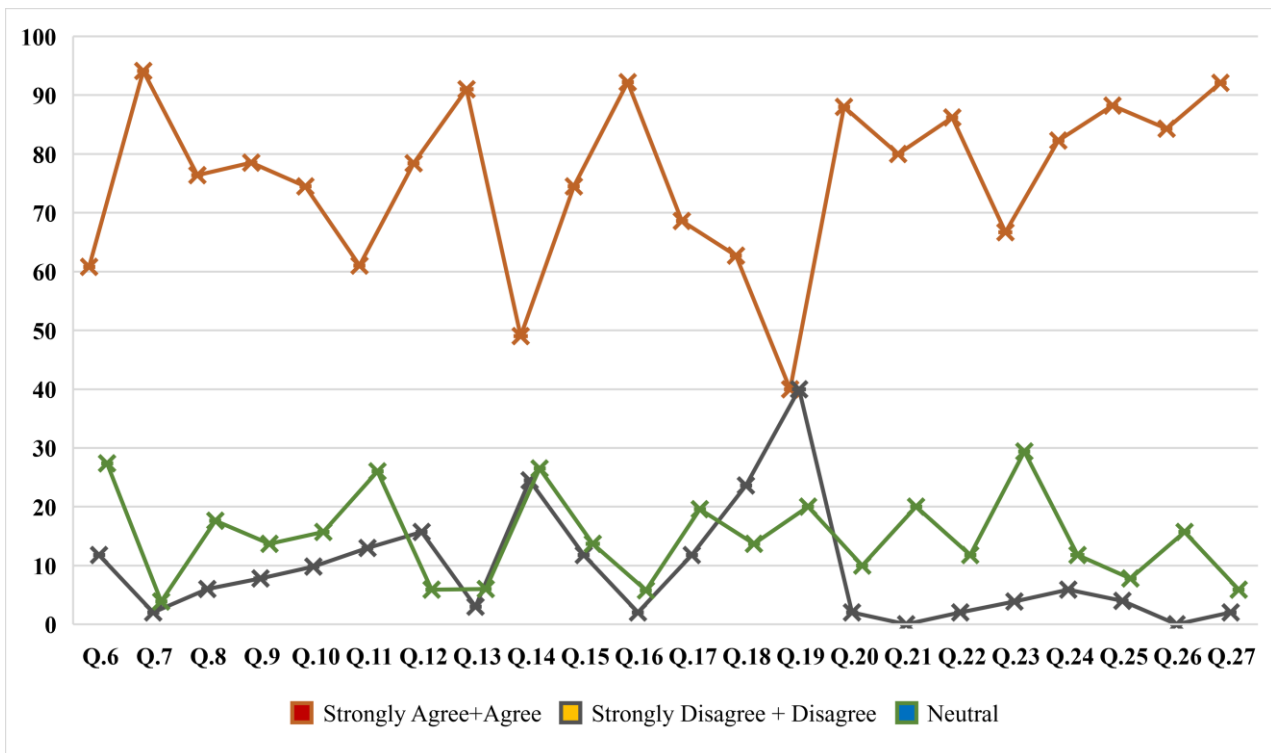


Fig. 6. Graphical representation showing a clear distinction between agree and disagree.

Moving forward, over 60% of the respondents agreed or strongly agreed to question 18, indicating that there is a perception that TT lacks the facilities and ability to educate and train individuals in RET. These respondents possessed either tertiary level education or vocational skills. Responses to question 19 showed an even 40% split between agreement and disagreement on whether the large space required for solar farm siting will be a problem for community solar projects in TT, with 20% of the respondents remaining neutral on this topic. Notably, those respondents who indicated that space requirement will be a problem for RE implementation, were largely from the more densely populated communities.

Question 20 to 27 were designed to obtain information on the benefits of community owned RE. The respondents showed a high level of support for community owned RE and a sense of moral obligation to engage in it. About 88% of the respondents agreed or strongly agreed that TT national policies such as control over the energy sector, and administrative norms such as slow implementation and paperwork processing, may hinder the deployment of community

RE (question 20). Also, 86% of the respondents agreed or strongly agreed that they felt a sense of moral obligation to engage and contribute to community RE as a citizen and an exemplar for future generations in their community (question 22). However, only 66% of the respondents agreed or strongly agreed that it was better to exploit opportunities in RE development in their community instead of investing in other localities or corporate enterprises in TT (question 23), indicating some reservations about the profitability and viability of community RE projects. Interestingly, 80% of respondents to question 21, agreed or strongly agreed that the environmental benefits that can be gained from community RE are more important than the financial benefits. This finding is further supported by Seetharaman et al.¹⁷ where it was stated that there is a moral obligation to reduce the damage being done to the environment with decades of harmful emissions.

Responses to questions 24 to 27 showed that under favorable conditions, citizens will participate in RE bringing about sustainable employment and adding value to their communities. Generally, respondents also believe that jobs created by community RE will not affect present employment in the energy sector. More than 80% of respondents agreed or strongly agreed to questions 24 and 25 indicating if support from the government is provided to communities, then CE in RE will flourish.

It was seen that over 86% of respondents agreed or strongly agreed to questions 26 and 27 demonstrating that local control and participation are well favored among residents, and there is a strong acceptance that community RE will lead to local energy independence, create sustainable income, and better quality of life in their local environment. This can be compared to the Cuban situation where the entrepreneurs' challenges are insurmountable as the state fears private sector competitiveness is putting the brake on the nation's economic liberalization¹⁶.

Table 3 shows the analysis of responses to questions 6 to 27 to determine public opinion on community RE in TT. The survey results revealed that there is moderate awareness of RE in TT and a consensus that the country is not where it should be in the energy transition. Respondents perceived technological and economic barriers as significant challenges to RE development. The respondents expressed a high level of concern about the trustworthiness and consistency of the government as well as the business sector in relation to RE development. However, respondents were willing to participate in CE under favorable conditions that include government support and believed it could bring about sustainable employment while adding value to their communities. The survey findings could be used to inform policy development for CE and adoption of RE among communities in TT.

Table 3. Survey results of public opinion on community RE in TT

Public opinion on community RE in TT	% Responses to strongly agree and agree	Question number (% Responses to strongly agree and agree)
Awareness and perception of RE	60 - 94	6(60), 7(94), 8(76), 9(78), 10(74), 11(61)
Confidence in government commitment and consistency, and TT general business trustworthiness	49 - 92	12(78), 13(91), 14(49), 15(74), 16(92), 17(68)
Perceived challenges and opportunities for RE technologies in TT (Deviation from the Norm)	62, 40	18(62), 19(40)
Benefits of community owned RE	66 - 88	20(88), 22(86), 23(66)
Environmental awareness and motivation for RE in TT	80	21(80)
Potential benefits and impacts of community RE on employment and economy in TT	82 - 92	24(82), 25(88), 26(84), 27(92)

4 CONCLUSION

To identify the drivers and obstacles for community participation and entrepreneurship in RE in TT, a survey instrument was utilized that was consistent with previous studies^{17,18,35,36}. The survey was validated by peer reviewers, subject matter experts and industry stakeholders, which was then administered to key participants, where the results were then analyzed and reported. Out of the 163 emails sent, 51 completed surveys were returned, representing a response rate of approximately 31%. The respondents' demographic characteristics were diverse, with 60% of respondents were in their most productive years of life, and the education level evenly distributed, with a significant percentage having completed tertiary education. Respondents spanned many communities, and almost 77% had been living in their area for more than 20 years, reflecting a sense of belongingness and rootedness to the community, which is essential for CE development. The survey revealed moderate awareness of RET, and an overwhelming belief among 94% of the respondents that the country is not where it should be in the energy transition. Economic barriers, with the high cost of RE equipment and low electricity cost, were ranked among the highest concerns, while technological barriers for siting solar farms were seen as problems by the respondents. There was also a lack of confidence in the

system's capability to educate and train in RETs. Local control and participation were well-favored among residents, and there was a strong acceptance that community owned RE can bring about sustainable employment and add value to their communities. Most importantly, this research has revealed that TT's unique and diverse culture will demand a significantly different approach for successful CE, compared to other countries, giving adequate justification to a paper of this nature to inform policy development for CE and adoption of RE in communities in TT. Future work will involve increasing the span of the survey to include more respondents.

5 RECOMMENDATIONS

For the successful deployment of RE with entrepreneurship at the local or community level, much restructuring needs to be done. One economic stumbling block unique to TT as a Caribbean nation is the low cost of electricity, and the only way to overcome this is through tangible incentives. Since TT does not have any RE production with community entrepreneurship, and any one model may not work for every locality, further research needs to be done before implementation on a large scale. Pilot projects of small scales need to take root which will further fine-tune research for more acceptable systems. About 40% of the respondents admitted to not being quite knowledgeable on the topic of RE which reveals that the subject needs to be integrated into the TT early education system in order to reduce the barrier to awareness and increase acceptance. The respondents understood the importance of bringing together people and technology at the local level for economic sustainability and a pollution-free environment. As the TT government moves forward to fulfill its Intended Nationally Determined Contribution (iNDC), and 2030 vision, strong policies are required to favor community RE, including funding, education and training to realize the full potential of RE production for climate change mitigation, energy transition, and sustainable employment with grassroots innovation.

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CONFLICT OF INTEREST

The authors declare that there was no conflict of interest.

AUTHORS' CONTRIBUTIONS

Conceptualization: B. Bachan, S. Maharaj, R. Maharaj, & D Boodlal

Data curation: B. Bachan

Methodology: B. Bachan, S. Maharaj, R. Maharaj, & D. Boodlal

Formal analysis: B. Bachan

Visualisation: Not applicable

Software: Not applicable

Writing (original draft): B. Bachan

Writing (review and editing): B. Bachan, S. Maharaj, R. Maharaj, & D. Boodlal

Validation: S. Maharaj, R. Maharaj, & D. Boodlal

Supervision: S. Maharaj, R. Maharaj, & D. Boodlal

Funding acquisition: Not applicable

Project administration: Not applicable

APPENDICES OR SUPPLEMENTARY MATERIAL

Survey for Academic Research (Questionnaire)

Purpose: Survey to establish the prospect of entrepreneurship in renewable energy development with community participation in Trinidad and Tobago (TT).

Details: My name is Bissoondath Bachan. I am at the Thesis stage of my MSc in Energy Engineering at the University of Trinidad & Tobago. My research paper is on the topic, 'Sustainable Entrepreneurship in TT: Conceptual Analysis of Opportunities and Challenges.

Gas and oil reserves in TT are fast depleting because of high domestic consumption and exportation. The energy and petroleum sector has faced economic challenges as oil and gas production is steadily decreasing. In addition, countries are investing heavily in renewable energy (RE) production reducing their dependency on oil and gas, and presently, gas and oil remain the life of the TT economy. This means that TT energy independence and energy economy are becoming increasingly vulnerable leaving no choice but to begin the clean RE transition. These ruinous issues will have to be addressed now as the country has experienced economic downturns in the past, all energy-related, partly due to a lack of future planning. Evidence shows, to produce, and properly store to utilize RE is expensive and takes time and planning from even well-organized wealthy countries.

TT will now have to embark on a transition drive to reduce its reliance on an oil and gas economy and position itself into bolstering other sectors of the economy and creating new economic pillars including harnessing new sustainable sources of RE.

The government has from time-to-time has been making statements relating to the energy transition, but from what we have seen so far, there is no study done for TT toward entrepreneurship for RE.

The implementation of projects related to RE can bring meaningful economic, environmental, and social benefits to the citizens of T&T. This survey intends the find out how renewable energy can be produced involving a broad base of the citizenry in the form of community participation entrepreneurship.

I thank you in advance for your support in completing this survey. The survey should take about 15 minutes to complete. Your information will be treated with the strictest confidentiality and will be used solely for academic research purposes.

Start of Questionnaire

1. What is your age?

▼

2. Please indicate your education level

▼

3. Will you consider yourself living in (type of community)

▼

4. How long have you been residing there?

▼

5. To what category will you say your occupation belongs?

▼

6. Do you agree that you are well informed of RE technology in terms of its environmental benefits, financial feasibility, and global installation projects?

Strongly Disagree: Disagree: Neutral: Agree: Strongly Agree:

7. Considering our depleting reserves in gas and oil, will you agree that there is an urgent need to harvest (RE) from solar and wind in TT?

Strongly Disagree: Disagree: Neutral: Agree: Strongly Agree:

8. Do you consider yourself as having a strong sense of community attachment so much as to be part of a community RE project in your area?

Strongly Disagree: Disagree: Neutral: Agree: Strongly Agree:

9. Will you agree to support the siting RE projects close to your home even if it affects the aesthetics of the landscape

Strongly Disagree: Disagree: Neutral: Agree: Strongly Agree:

10. Do you agree that producing RE in your community will NOT affect employment in other areas of the energy sector?

Strongly Disagree: Disagree: Neutral: Agree: Strongly Agree:

11. Do you agree that the TT culture of work ethics and productivity rate will negatively affect community RE development?

Strongly Disagree: Disagree: Neutral: Agree: Strongly Agree:

12. Do you agree that the often lack of trust and transparency with entrepreneurship in TT may prevent RE development in your community?

Strongly Disagree: Disagree: Neutral: Agree: Strongly Agree:

13. Do you agree that government inconsistencies especially when an administration changes create uncertainties that can discourage investments in community RE development?
Strongly Disagree: Disagree: Neutral: Agree: Strongly Agree:
14. Do you agree that the low cost of electricity in TT, currently produced from fossil fuels, will hinder the development of RE?
Strongly Disagree: Disagree: Neutral: Agree: Strongly Agree:
15. Do you agree that the high capital cost for RE equipment such as solar panels and storage batteries presents a setback for RE investments?
Strongly Disagree: Disagree: Neutral: Agree: Strongly Agree:
16. Do you agree that there is a lack of financial institutions as well as not many financial incentives to facilitate entrepreneurship in RE?
Strongly Disagree: Disagree: Neutral: Agree: Strongly Agree:
17. Do you agree that TT does NOT have adequately trained personnel or workforce for RE deployment?
Strongly Disagree: Disagree: Neutral: Agree: Strongly Agree:
18. Do you agree that TT does NOT have the necessary institutions for the education and training for RE development?
Strongly Disagree: Disagree: Neutral: Agree: Strongly Agree:
19. Do you agree that the relatively large space required for Solar farm siting will be a problem for community solar projects in TT?
Strongly Disagree: Disagree: Neutral: Agree: Strongly Agree:
20. Do you agree that TT national policies such as control over the energy sector, and administrative norms such as slow implementation and processing of paperwork, may hinder the deployment of Community RE?
Strongly Disagree: Disagree: Neutral: Agree: Strongly Agree:
21. Do you agree that the positive environmental impacts of community RE are more important than the financial benefits it may bring? Bear in mind that RE production will help reduce emissions from burning fossil fuel which is primarily responsible for global warming.
Strongly Disagree: Disagree: Neutral: Agree: Strongly Agree:
22. Do you feel a sense of moral obligation to engage and contribute to community RE as a citizen and an exemplar for the future generation in your community?
Strongly Disagree: Disagree: Neutral: Agree: Strongly Agree:
23. Do you think that it is better to exploit opportunities in RE development in your community instead of investing in other localities or corporate enterprises in TT?
Strongly Disagree: Disagree: Neutral: Agree: Strongly Agree:
24. Do you agree that it is more favorable to participate in community RE if the entrepreneurs are community-based?
Strongly Disagree: Disagree: Neutral: Agree: Strongly Agree:
25. Do you agree that new regulations to support RE development including options to connect to T & TEC grid and a stronger and direct focus on community RE from the government will increase participation in community RE?
Strongly Disagree: Disagree: Neutral: Agree: Strongly Agree:
26. Considering our depleting gas and oil reserves, and that research has shown producing never-ending clean energy from solar will employ more citizens, compared to fossil energy production, will you be motivated to invest in community RE transition?
Strongly Disagree: Disagree: Neutral: Agree: Strongly Agree:
27. Do you agree that producing RE in your community will add local value to your community in terms of energy independence, real estate value, a better quality of life, and providing sustainable income to citizens?
Strongly Disagree: Disagree: Neutral: Agree: Strongly Agree:

End of the questionnaire

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