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GREEN BANKING AND FINANCIAL INSTITUTIONS' CONTRIBUTION TOWARD GREEN ENERGY ADOPTION AND ENVIRONMENTAL SUSTAINABILITY

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Abstract

Climate change is a very complex issue in today's society and people are more aware of global warming and its implications for human life. To cater this type of concerns and energy security of the country, it is imperative to work and implement means of energy that are more reliant on green sources such as solar, wind or hydro type of energy sources. This is a concern for governments and other stakeholders such as financial institutions to work in this direction and see the ways of world energy trends moving. It is also direct duty of commercial banks and other financial institutions to introduce technologies that are more near to nature. To significantly reduce the carbon footprint of the environment, banks must promote compliant products, processes and technologies. The bank therefore adopts green strategies in its buildings, operations, investment and funding strategies.

The purpose of this study is to determine the benefits of green finance on green energy technologies; this study give an initial status of moving trends in favor of green energy. Primary data are collected from questionnaires and secondary data are collected from his different journals. The questionnaires were asked from common public, banking employees and other seller companies to find their response on use of green finance and green energy technologies. Collected data are analyzed using both qualitative and quantitative data analysis techniques. The survey concludes that there was a significant awareness about the use of green technologies form domestic and commercial application and use of solar technology was every growing in the country. The need of green finance was found necessary in the study to use in green ways of energy in the country. Green finance seemingly, good for financial growth and economy of the financial institutions and there were no significant issues with performing on green initiatives by the banks etc. seller companies intend to grow their business in this field and find it helpful for their economic growth.

INTRODUCTION

The Pakistani economy is currently facing two challenges: rapidly increasing fuel cost and change in environment of country. The value of oil imports reached $13 billion in 2017-2018 (30% increases over the previous year) (Latif et al., 2020). Although the country's energy mix reconfigured in recent years with target to reduce oil import bill, however there is a need to make energy mix based on local energy sources that are longer terms such as solar, hydro and wind etc. It is expected that Pakistan will expand its domestic resources, including renewable energy, reduce its dependence on foreign energy sources, provide a political environment, raise awareness and improve access to green finance to support renewable & environmentally friendly energy sources. We need to provide incentives for development (Bhutto et al., 2012).

As per current status, alternative energy is only 3% of the total energy production in Pakistan. Government is promoting energy options based on renewable energy by use of solar cell and wind technology. Especially wind-based energy has found a lot more space in country on sides of Sindh wind energy corridors of Gharo and Badin regions (Saulat et al., 2021). Government also promoting use of small hydro work heads as a source of renewable energy. Pakistan is currently tending to move to better manage supply. However, while this concept makes sense in theory, the biggest challenge facing Pakistan is enough to absorb large amounts of electricity (Malik et al., 2020). Because of its benefits for the environment and sustainability, renewable energy has emerged as the world's best solution to the world's ever-increasing energy needs. There is well recognized renewable energy as meeting today's human needs without compromise. Fossil based energy mix casted a devastating impact on the environment and livelihoods of contemporary people, with diminished or diminished capacity, shared global alerts, and changing climate conditions. International research shows that society is very active in promoting alternative energy sources including wind and photovoltaic, which account for 20% of energy supply (Güney, 2019). Photovoltaic technology is being made with the help of solar cells, also called solar cells that easily convert sunlight or photons into electricity through semiconductors such as silicon. This technology is used both physically and chemically. Photo-electricity is the process by which many metals reject electrons when exposed to light. The emitted electrons are called photoelectrons (Buitenhuis & Pearce, 2012). The second process is an electrochemical process, in which the oxidation state changes and electrons move within the molecule through the release of chemical energy. This process consists of crystallized atoms connected in series as a result of current generation. When sunlight strikes a conductive or other non-conductive surface, the photovoltaic wire is absorbed by the material and the voltage energy is sufficient to generate a small current (Harmon, 2000).

Concentrated Solar Power (CSP) Technology works by using mirrors to generate a narrowly focused energy from a broad area of sunlight, which is converted into heat. This heat energy is used to generate electricity in a steam turbine that drives a generator (Lovegrove & Csiro, 2012). Wind density calculations are based on the speed of wind and air density per year. For example, in the United States, calculations of average annual power density over 50 meters were developed by the NREL (Renewable Energy Laboratory) (Ulazia et al., 2019). Climate change will have a negative impact on public health, agriculture and economic activity in general. Possible triggers include carbon dioxide emissions, population explosion, deforestation, and a scarcity of resources to mitigate and adapt to climate change. Climate change, lack of suitable reservoirs, and scarcity of water due to traditional irrigation systems are other problems in the country. Pakistan's environment is also affected by air pollution. This is due to industrial toxic gas emissions, brick burning and carbon emissions from transport vehicles (Hussain et al., 2019). Waste management is another important issue. Industries and hospitals dump waste into oceans, lakes and rivers, endangering aquatic life and the people who depend on these resources.

The problem arises because there are not enough waste disposal mechanisms (Noor et al., 2020). Hence, this study shall seek the role of banking sector in promotion of renewable energy sector in Pakistan. The interests of people to adopt new renewable technologies and its relationship to banking finance shall helpful to see current status and future prospects.

2. Literature Review

Financial resources are a part of investment from partners and founder. In this era, it is much easier and quicker to obtain finance from both government and public sector. Majority government support small and medium enterprises (SME) business as a key driver in Pakistan. Pakistan makes small and medium enterprises development authority (SMEDA) that work on SME (Ahmad & Ahmad, 2021). SEDA is a popular training and skill development centre that works under ministry of industries and productions. Governmental financial support under SMEDA is to offer skilled training to workers and provide financial assistance required to workers for training purposes. It also helps use of Prime Minister Youth loan schemes for purposes of the country (Mubarik et al., 2020; Naveed et al., 2022). According to Shariah-compliant borrowing, Pakistan banks have offered loans to the businesses on profit loss basis. Islamic banking has faster growth of such business compared to other banking offers such as interest free loans and other business involvements etc (Alim et al., 2021). Solar power house business has many reasons to start in Pakistan i.e. Solar power system is high needed for business markets, Solar power resources help the human to availability their skill, Use of solar power energies supplier supply own products easier, Solar power energy is more helpful to making products (Sweeney et al., 2020).

Debt financing always cost interests and installments payments from money loan in form of capital or bond issuance. A creditor proves debt financing for a project but not interesting own share in a project, they just provide funds for earning. Basically, creditor is very low risk takes so they just funds as a debt and earn profits (Czarnitzki & Kraft, 2009). International funds dedicated to development projects grants as a soft loan that loan is repayment phenomenon in commercial banks and give loans on low interest rate and flexible repayment schedule. Debt financing available for investment in renewable energy include as Senior debt and subordinate debt. Basically, senior debt is providing from people sources received as loan to be repaid from a project. These loans are used to subside for a cost of projects with more than commercial expensive debt. The long-term loans from public sources are very useful established credibility among financier for long term projects (Cole & Sokolyk, 2018). Subordinate is a debt which ranks with less precedence of compensation than other debt as company is bankrupt. A subordinate debt is very expensive and takes higher risk. It can used to increase the effective term of loan that help projects cash flow and variability (Xu & Li, 2020).

In 2014 to 2015 Pakistan rate fortitudes have been installed as global tariff on solar must decrease suddenly associated to the announce tariff. It is noted that these types of projects such as projects developments are not allowed to move or proceed to impact on investor confidence (Caldara et al., 2020). Gupta (2015) suggested that green banking is very useful for public environmental aspects, and takes care of social and environmental aspects of social life etc. Target of green banks is to preserve ecology of system and preservation of nature and environment. Solar projects are such type that can produce clean energy while saving environmental health and aspects. Jain (2017) called green banking as sustainable or ethical banking and found that green banking activities are funding activities to reduce carbon emissions and sustainable banking that are low in carbon dioxide emissions. This refers to banks to support of restoration of natural environment by green investment or lending to enterprises or industry. It is said the green banking shall protect and restore nature and environment.

Bahl (2012) found that green practices are expanding in developing regions of the world such as in Thailand or China etc. Developed countries such as in Europe or America have practiced green banking very often. It is learned in many cases that defensive positions are such as environmental issue is very hard in banking process. Green banking is a sustainably banking in such regions of the world so practices are normal and acceptance of public and governmental agencies is very much common. Deka (2015) suggested banks to highlight the importance of green banking and greener products to public and customers of their locality. This will improve the perception and awareness of customers about green banking methods. Banks in Mauritius have established implementing green banking sets in their country. They should expand use of environmental information and expand implementation of green banking processes.

3 Material and Methods

The objective of research is to inquire about the interest of customer in green finance through commercial banks. Research design is a plan for operational activities of research to be carried out during this research work. The research design of study, collection of data through survey, testing data through analysis and testing size and sampling of plans as followed. The research work shall be both descriptive and exploratory research design to test the hypothesis. The data is collected through questionnaire that was asked to be filled up by customers, employees, and company's data for evaluation and analysis. The questionnaire was design for interest and implementation of solar technology in the country. The closed ended questions were ranging on point scale of 5 to 1, where 5 was strongly disagree and 1 was strongly agree in questionnaires.

Population was selected through online filling of Google forms about the questionnaire. The audiences were the technical personals, with high education level etc. It was aimed with respect to installation of either solar or wind generation system for domestic needs from the respondents. Total number of respondents from three surveys was 150 persons from these surveys. The target for the respondents was to enhance the tendency. The data thus collected was tested for both qualitative and quantitative data analysis. Descriptive testing was applied for testing of frequencies and other information to present in tabular format. The collected data was used in data analysis statistical tool package using SPSS version 2.0 and information was collected for results and discussion purposes. The standard deviations, distribution frequency and other ANOVA correlations were collected and tested for hypothesis. The distribution of independent versus dependent variables was observed and presented in tabular or graphical format. Using regression analysis, the mean, standard deviation and percentage was observed in the descriptive manner. The Statistical Package for Social Sciences (SPSS) application, was used to determine the reliability of the data acquired. The level of significance was set at 0.05.

4. Results and Discussion

This chapter is about to discussed about results from this study in relevant to desired objectives. Questions that were asked from public, or bank employees or company representatives were analysis in system manner in terms of tables or graphs. The descriptive analysis and regression analysis of the study was carried out and is discussed in this section.

4.1 Demographic Characteristics of Respondent

4.1.1 Gender of the Respondents

The majority of respondents in the analysis of the gender structure were men. In instance, the data, which was displayed in Table 4.1, revealed that out of 400 respondents, 220 (55%) of the respondents were male and 180 (45 %) were female.

Table 4.1 Gender of the respondent

Gender	Frequency	Percent
Male	220	55
Female	180	45
Total	400	100.0

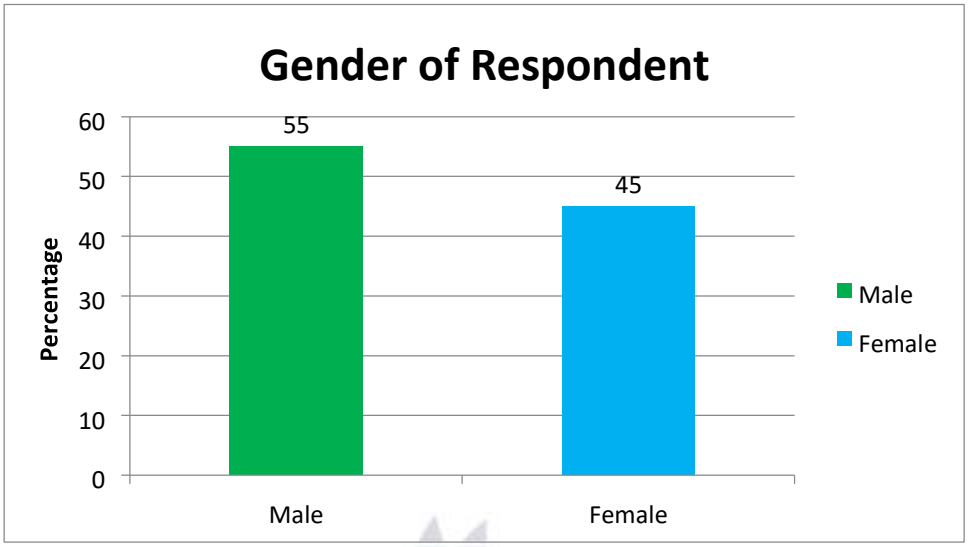


Figure 4.1 Gender of respondents

4.1.2 Age of the Respondents

The demographic variable of the respondent's age were studied and was found out that, the majority of respondents were within the age bracket of less than 20 year, 12 (3%). This was followed by those were within 20 to 30 age, 232 (58%) and 30-45 age bracket were 145 (26.7%). Remaining respondents were of more than 45 years old.

Table 4.2 Age of Respondent

Age	Frequency	Percent
Less than 20 year	12	3
20-30 year	232	58
30-45 year	105	26.3
Over 45 year	51	12.7
Total	400	100.0

4.1.3 Academic Qualification

The respondents' educational level was the next sample characteristic examined. According to the findings, the vast majority of respondents held master's degrees. There were 64 (16%) bachelor degree holders, 295 (73.8%) master's degree holders, and 41 (10.2%) above master's degree holders. The respondents' education level appeared to be adequate for this assessment. The findings of this research study show that education level is important in understanding role of green finance in renewable energy

technology. As a result, there is a strong relationship between the factor of education level and use of technology.

Table 4.3 Responses of Academic Qualification

Qualification	Frequency	Percent
Bachelor	64	16
Master's	295	73.8
Above Master's	41	10.2

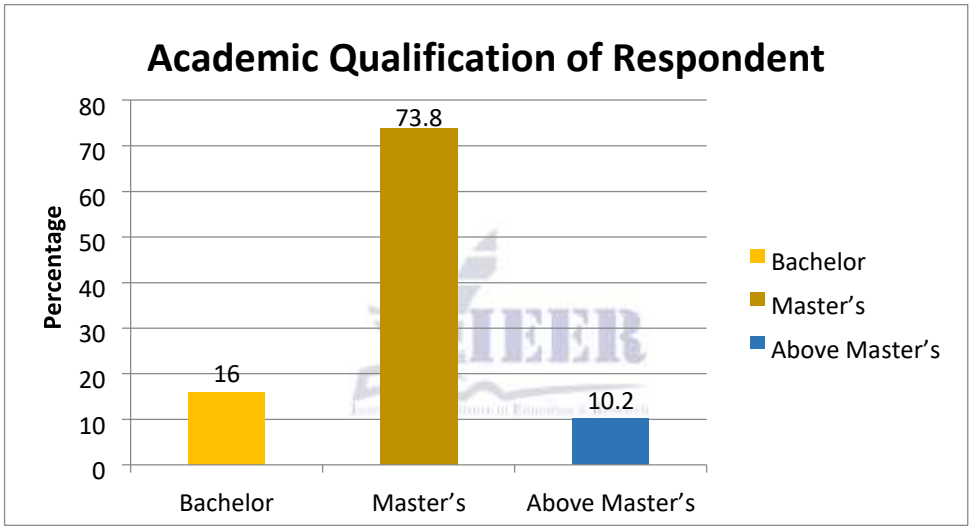


Figure 4.2 Academic qualifications of Respondents

4.1.4 Residential Location

Figure 4.3 depicts the location of the respondents who were questioned for their perception about green finance and green energy technology in Pakistan. Majority of them resided in rural areas 188 (47%) followed by city center residents, 16.7% and urban area 28% and least were sub urban residents, 8.3%. Resident's location gives idea about their consumer trends and needs of the area with reference to renewable energy.

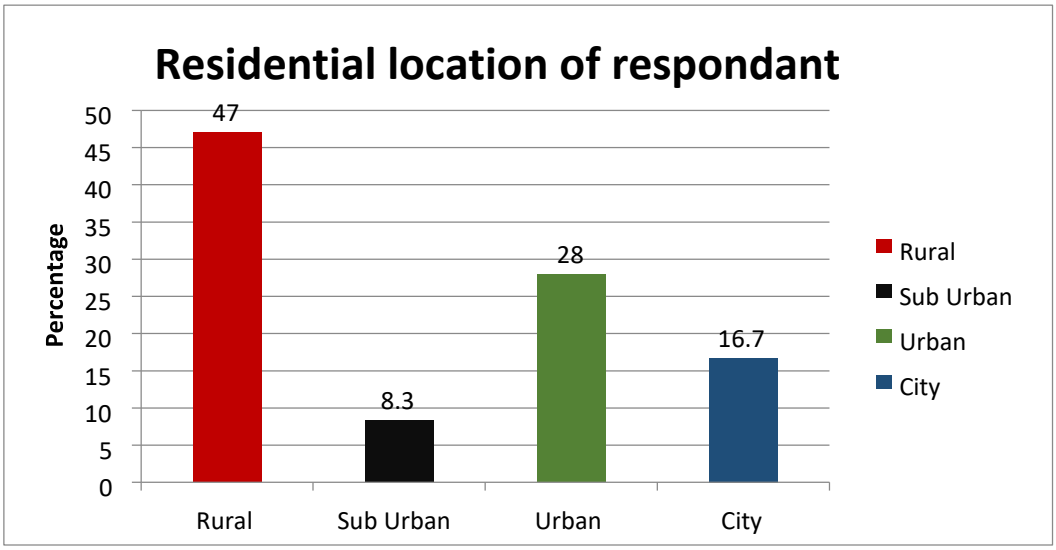


Table 4.4 Respondent residential location

Region	Frequency	Percent
Rural	188	47
Sub Urban	33	8.3
Urban	112	28
City	67	16.7
Total	400	100.0

Figure 4.3 Residence locations of respondents

4.1.5 Consumers Choice for Green Energy Technology

Figure 4.4 shows the consumer's choice about type of technology for their energy needs. Majority of the respondents were inclined towards solar cell photovoltaic technology. The reasons might be the expansion of this technology all of the country in recent years, therefore, majority of customers were aware of the usefulness of this technology in country. Wind was found to be second choice as small wind turbines could be useful for harnessing domestic scale energy for households or for small business or social activity. Small hydro was the least attracted renewable green technology useful to customers. This technology could be useful for people who live in hilly areas with low sunlight and enough water ways for collection and working of small hydro projects in the country.

Table 4.5 Responses of preferences of renewable energy Technology at home

Renewable energy	Frequency	Percent
Solar	289	72.2

Wind	61	15.3
Small Hydro	50	12.5
Total	400	100.0

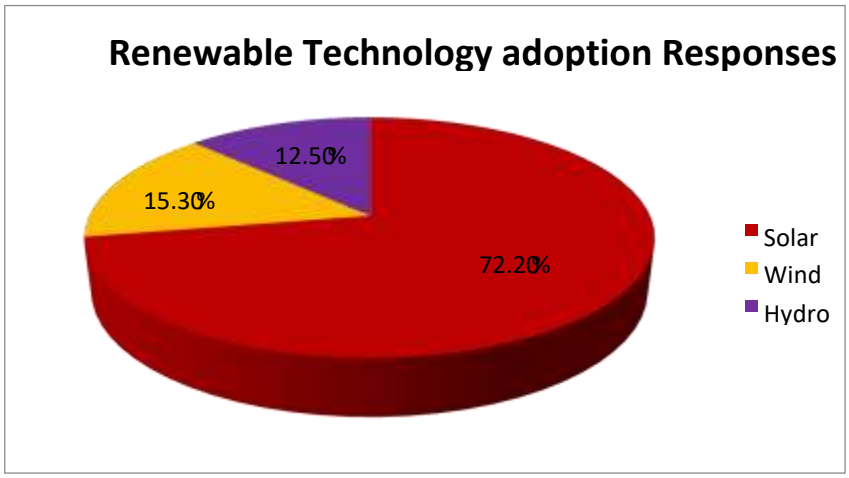


Figure 4.4 Choice of Green Technology for energy harnessing

4.1.5 Awareness about Subsidy of Govt. on Renewable Green Technology

Figure shows the awareness of public for getting governmental offers and subsidy for solar or wind energy installations. It was found that majority of respondents were aware of governmental subsidy and value it for buying solar or wind unit for their cause. Approximately, 332 (83%) of respondents appeared yes in response and 68 (17%) appeared to be no against the query of knowing about governmental subsidy on green energy technology installation.

Table 4.6 Are you aware about the govt. subsidy for renewable energy installation?

Responses	Frequency	Percent
Yes	332	83
No	68	17
Total	400	100.0

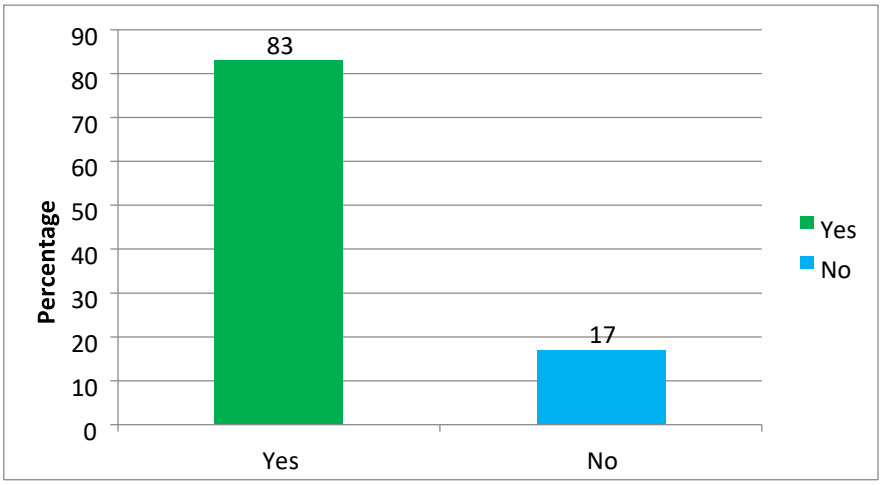


Figure 4.5 Are you aware about Govt. subsidy on renewable energy

4.1.6 Mode of payment for Green Energy Unit Installation

Figure shows the mode of payment for installing a unit of energy at home or for small commercial activities in their own area. It was found that there were a significant number of respondents who were willing to pay in cash on purchase of solar or wind energy unit. Similarly, 23% were intended for bank loan for this purpose and 19% (76 respondents) were interested in installments of payments in buying such units. All of the respondents were interested for governmental subsidy in any case. However, 36% of respondents were specifically interested to only buy unit with subsidy by the governmental departments.

Table 4.7 Responses of preferable source of funds for installation of renewable energy technology at home

Source of Funds	Frequency	Percent
Self-income	88	22
Bank Loan	92	23
Installments	76	19
Govt. Subsidy	144	36
Total	400	100.0

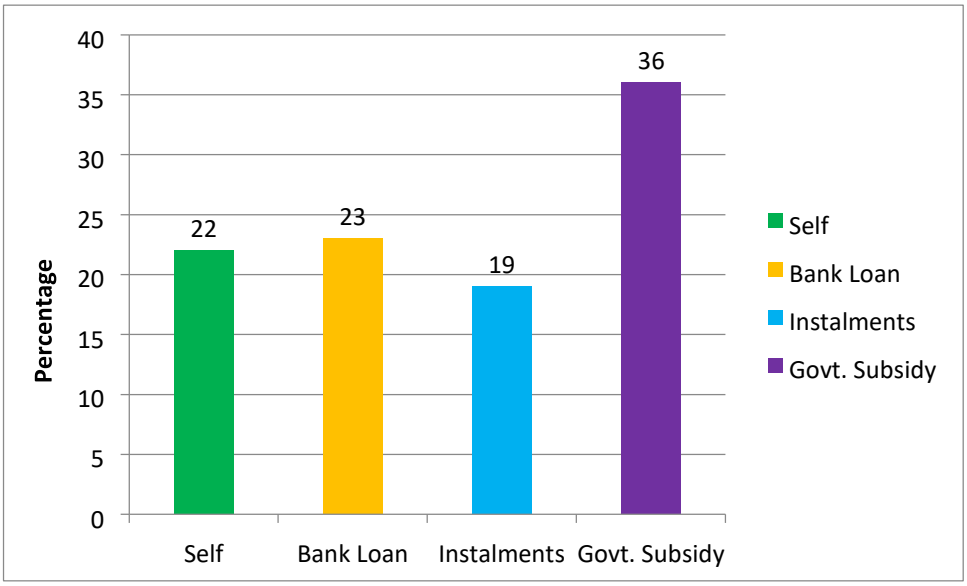


Figure 4.6 Preferable Source of funds for installation of renewable energy

4.2

Descriptive Analysis

Fundamental characteristics of the data in a study are described using descriptive statistics. Simple summaries of the sample and the measurements are provided. They serve as the foundation for almost any quantitative analysis data set, together with straightforward visual analysis. Quantitative descriptive information is presented in a digestible format using descriptive statistics. It aids in the logical simplification of enormous amounts of data. Each descriptive statistic distils a large amount of data into a more concise summary. The calculation of statistical measures like mean, standard deviation, and correlation is included in this descriptive study. It is logically provided in accordance with the study's goals. All of the surveys were scored on a five-point Likert scale, with "strongly agree" equaling 1 and "strongly disagree" equaling 5. In order to gain a deeper understanding of the respondent's behavior, a cross-tabulation of several variables was conducted. These values assist the researcher in analyzing the data with respect to frequencies and percentages relating to research topics and variables.

4.2.1 Responses of People about Green Energy Technology aspects in Pakistan

Through the data gathered from the questionnaire during the study procedure, the researcher in this section hopes to learn the responses of respondents on green energy technology future in Pakistan. The calculation of statistical variables like frequency, mean, and standard deviation is included in this descriptive study. Questions addressed a five-point rating scale. "Strongly Agree" was anchored at 1, "Agree" at 2, "Neutral" at 3, "Disagree" at 4, and "Strongly Disagree" at 5. The response of respondents to are shown is shown in **Table**. The lower mean of 1.67 indicates that solar energy, hydropower, and other projects of a similar nature are used as green investments and are liked by respondents to invest finance in green technology. The respondent gave this statement a strong yes vote, demonstrating their satisfaction with green investment in the context of solar energy, hydropower, and other projects of a like nature. The second claim, that encouraging green investment is safe, had the least amount of agreement and strong agreement, leading to a higher mean of 2.72. Respondents were confident about the maintenance of solar panels through proper

ways of cleaning methods. Overall, their satisfaction level was high and believed in renewable technology prospects in Pakistan.

Table 4.8 Responses of people about green energy technology utilization

Observation Statements	N	Mean	SD
Do you think about role of renewable energy is vital for future 400 energy safety of Pakistan		1.61	0.84
Do you think solar technology has difficult maintenance in 400 long terms		2.72	0.94
Overall responses	400	2.16	0.78

4.2.2 Responses of bank staff about the role of bank regarding green financing in clean energy technology

Five features are listed in the descriptive analysis for role of banks in promoting green finance and green technology in area of their workings shown in Table as one of the five qualities is with a minimum value of 1 and a maximum value of 5. In response to query that banks are promoting renewable technology and are satisfied of their interests and direction for green finance, majority of bank employee said yes to query with mean of 2.19. Banks believe in their vital role for green finance activities in their area. Banks were very knowledge of governmental subsidy offers to public and people of Pakistan. With mean of 2.1, it was evident that Banks knew the governmental subsidy and found it important for promoting green finance and green renewable technology in Pakistan. However, when asked bank that those signing MOUs with solar or wind operator companies, their response rather disagree. Probably, banks are at initial stages of green finance for promotion of green technology as a result, they need more time to open their options for such opportunities etc. Banks were either less interested in providing advertisements in their positive growth activities, such as promoting green finance activities in their area etc. Majority of banks strongly condemned their data provisions and showed that green data provisions are simply the green technologies. With mean of 3.38, the banks were aware of that preferable technology for green banking is not wind power, probably; the green finance banking technology is mainly solar power technology and solar cell etc.

Solar technology is more preferably technology for domestic and commercial applications, it was found in majority of the cases. Banks showed an agreement in their interest to allocate funds or focus on distributing funds in their solar cell technologies or wind power energy system with mean value of 2.6. It seem that there is not a specific fund allocated for such technology growth, however, the interests and fund sources allocation and preference could be within the technology for funds allocation.

Table 4.9 Responses of banking employees on role of green finance on green energy technologies

Observation Statements	N	Mean	SD
Banks are promoting use of renewable energy technology in 400 their locality		2.19	1.00
Banks are aware of subsidy offered by Govt. of Pakistan to 400 specific projects such as solar power water tube wells.		2.1	1.15

Banks are singing MOUs with solar or wind companies	400	2.67	0.89
Banks using adequate advertisements for positive growth of 400 green technologies in their end		3.02	1.15
Banks have data on sales of technology versus its 400 advertisement cost		3.86	1.08
Preferred renewable technology for domestic installations is 400 wind power		3.38	0.93
Solar technology is preferred over photovoltaic for 400 commercial or industrial applications		2.47	1.05
Bank is managing separate funds for loans to green 400 technologies		2.77	1.07
Overall responses	400	2.60	0.09

4.2.3 Responses of Seller Companies on Green Financing in Clean Energy Technology

Descriptive analysis for perception of seller companies in financing green energy technologies are satisfied as follows. Seller companies believe in growth of photovoltaic cells in coming years for energy technologies with mean of 2.02 and standard deviation of 0.79. It is also shown that seller companies are satisfied with their profit margins in solar cell business with mean of 2.36 and standard deviation of 1.06. Companies also believed to higher skilled staff workers to promote their business and other related activities. Whether asked that if their company was company was well aware of government policies on green technology spread in the country, the respondents said yes to this type information's, who could help their business growth and other activities. Companies also said yes to their promotions to their green business and other related activities for growth of their business etc in future activities. When asked about people have trust in company saying and believe in using green technology for their purposes, the companies found less relevant to this type of information with mean of 3.35. Probably, companies more focus on expanding their business and profit margins with doubt of future trends that can halt their progress.

Table 4.10 Responses of Seller companies on expansion of green energy technologies

Observation Statement	N	Mean	SD
Sales of photovoltaic cells are expected to increase in coming years	400	2.02	0.79
Are you satisfied with profit margins for sale of solar cells	400	2.36	1.06
Companies hiring skilled staff capable of installation and maintenance work	400	2.30	1.02
Your company is well aware of government policies on green technology spread in the country	400	2.36	1.15

Incentives offered by Govt. are being availed by your company	400	2.63	1.03
Company is advertising properly the benefits and use of green technology in area of its vicinity	400	3.30	1.12
People have trust in company saying and believe in using green technology for their purposes	400	3.13	1.00
Company give due benefits to customers offered by suppliers or govt.	400	3.05	1.12
Company has large plans for expansion in terms of funds	400	3.00	1.24
Company expects business growth for many folds in coming years in green technology area	400	2.41	1.11
Overall responses	400	2.66	0.11

4.2.4 Responses of Green Investment & Practices

Table 4.11 Responses of green investment & practices

Observation Statement	N	Mean	SD
Our bank increases the percentage of investments made in environmental projects like hydropower, solar and wind energy, and other initiatives of a comparable kind	400	1.02	1.79
Our bank offers consumers who start green technology initiatives at the societal or individual level loans with acceptable interest rates (green loans).	400	2.1	1.06
Our banks have notice growth in green energy technologies in current and future scenario	400	2.30	1.02
Our banks have policy to enhance resources for green finance in coming years and set new targets for green finance and banking practices	400	3.36	1.13
Banks are using adequate methods to promote green finance and green technologies in area of their vicinity such as advertisements, promotions, easy processing of green loans	400	3.63	2.03
Overall responses	400	2.48	0.15

Table describes the effectiveness factors, for green investment and practices for renewable energy technology. It is found that banks sets targets for green business and finance each year

in progression and said yes with mean of 2.23. The responses of the banks were rather near to neutral on query about allocation of funds to pursuit of green finance targets and follow up mechanism for promoting green energy finance to customers with mean near 3. Similarly, banks seem very eager on promoting conferences, seminars, daily discussions and other social and officially activities to promote green finance by their end. For query about banks considered risk management while pursuing green finance and take considerable actions to reduce the risk in green loans to customers were agree to mean of 2.53. Overall, there was positive response i.e. banks were taking care of their investments in area of green finance.

4.2.5 Responses of Income & Financial Growth

Table 4.12 Responses on income & financial growth green investment & practices

Observation Statement	N	Mean	S. D
Banks sets targets for green business and finance each year in progression	400	2.23	1.79
Banks allocate relevant funds to pursuit of green finance targets and follow up mechanism for promoting green energy finance to customers	400	2.56	1.06
Banks loans and interests offering are very much acceptable to customers and have high acceptance level in community of their working range	400	2.60	1.02
Banks promotes conferences, seminars, daily discussions and other social and officially activities to promote green finance by their end	400	1.32	1.13
Banks also consider risk management while pursuing green finance and take considerable actions to reduce the risk in green loans to customers	400	2.53	2.03
Overall responses	400	1.8	0.15

Table shows the response of income and financial growth as dependent factors and the responses of the respondents on observed statements. With mean of 2.23, the banks set green targets for green business and finance in each year in progression etc. Mean to query banks loans and interests offering are very much acceptable to customers and have high acceptance level in community of their working range were 2.6, seems that respondents were agree to this query. Similarly, 2.53 agreed to banks do consider their risk in managing their funds and during investment in green finance schemes etc.

4.2.6 Responses of Efficiency & Performance

Table 4.13 Responses on Efficiency & Performance

Observation Statement	N	Mean	S. D
Banks are efficient and perform green finance necessities in quick fashion and in fewer liabilities and resources	400	2.56	1.79
Staff members at banking sites performs their duties in efficient way and use banking resources optimally to achieve green finance targets and objects	400	1.56	1.06
Banks are adopting all modern tools and technology to carry out their processing for green finance activities	400	1.70	1.02
All staff members at bank site strive to achieve set targets and goals by the banking officers in accordance with green finance standard policy	400	2.32	1.13
There is a satisfaction level in all green performances and projects taken by the banks	400	3.53	2.03
Overall responses	400	2.33	0.15

The descriptive analysis for output responses were also analysis and discussed. It was found that 2.53, 1.56 and 1.7 means were for about staff members of the banks were being followed accurately. For query, banks are adopting all modern tools and technology to carry out their processing for green finance activities, the mean was 1.7 that mean the banks are adopting modern tools to promote and implement green finance practices in their vicinity. Mean of 3.53 was found for their satisfaction level and their performances that have good value of work and banks were good in their performing practices etc.

4.2.7 Responses of Income & Financial Growth

Table 4.14 Responses on Income & Financial Growth

Observation Statement	N	Mean	S. D
The goal of the green banking approach is to keep the cost of resources for all programs and initiatives accessible as low as possible.	400	2.56	1.79
Cost is a bigger factor to consider in green banking than service quality.	400	2.56	1.06
I always take care to protect the assets and property belonging to the public that have been entrusted to me	400	2.40	1.02

I always make sure that public funds are used effectively and efficiently	400	3.32	1.13
Overall Responses	400	2.71	0.15

The descriptive analysis for output responses was also analysis and discussed. It was found that 2.56, 2.40 and 3.32 respectively. The green banks are in practices to minimize the cost of their resources for all of the available programs and projects etc.

4.3 Regression Analysis

This study uses primary data analysis based on the regression model described in chapter three to assess the results' statistical significance and robustness. To examine the estimated relationship between financial performance two independent variables and two dependent variables were tested for regression analysis. Green investment and green business strategy are independent variables and efficiency & performance and financial growth is considered as dependent variables in the study. It primarily deals with regression results from various specifications of the model. The tables below show the results of the regression.

4.3.1 Model specification

Clean Energy Technology= f(GI, GBS, E&P, FG)

Where GI represents green investment, GBS is green business strategy; E&P is efficiency and performance, while FG represents financial growth.

Table shows the effects of green finance on adopting clean energy practices with values of R^2 and adjusted R^2 as 0.39 and 0.379. Standard error of estimates corresponds to 0.44589 as well. R^2 number represents the percentage of the independent variable's variance that can be accounted for by the dependent variables.

Table 4.15 Regression analysis of impact of green financing on adoption of clean energy technology

Model Summary

Model	R-Square	Adjusted R Square	Std.Error of the Estimates
1	.390	.379	.44589
Predictors: (constant), GI, GBS, E&P, FG			

The regression model significantly and accurately predicts the dependent variable, according to analysis ANOVA Table. Significance of the model was found to 0.000 which means it's very useful to predict responses based on given inputs. F test of 56.34 also given authenticity of the model. Model degree of freedom was found to be 4 and sum of squares to be 38.76.

Table 4.16 ANOVA[a] analysis

Model	Sum of Square	Degree of freedom	Mean Square	F-Stat	Significance
Regression	38.765	4	9.691	56.343	0.000[b]
Residual	67.987	395	0.172		
Total	106.752	399			
a. Dependent variable : Clean energy technology					
b. Predictors: (Constant), GI, GBS, E&P, FG					

The analysis of coefficients indicate by table , it is observed that the beta for green investment is 0.216, green business strategy is 0.114, efficiency & performance is 0.023 and financial growth is 0.314. Coefficient beta for model was found to be 0.713. The positive sign in front of these variables' beta indicates a direct association between the explained variables, whereas the positive sign in front of their beta indicates a proportionate relationship. The p value of model was significant to 0.00 and independent variables were less than 0.05 intervals i.e. were significant within 95% interval. Similarly, efficiency & performance and financial growth were also found to significant while efficiency and performance were significant to less extent.

Table 4.17 Coefficients[a] of analysis

Model	Coefficients (B)	Std. Error	t	p-value (sig.)
(Constant)	.743	.103	7.21	0.000
GI	.216	.089	2.42	0.045
GBS	.114	.033	3.45	0.034
E&P	.023	.078	0.29	0.884
FG	.341	.034	10.02	0.000
a. Dependent Variable: clean energy technology				

Conclusions

On the basis of the study's findings, suggestions have been made about the role of green finance as vital for continuing green energy technologies in Pakistan. It is found that green banking encourages the use of environmentally friendly technology for energy harness purposes and lowers the carbon footprints. Green finance can work to develop far-reaching market-based solutions that are efficient, time-saving, simple to use, and successful in addressing a variety of environmental challenges, and promoting solar or wind energy domestically. It is found that green finance is helpful for economic health of the country.

More samples would be the subject of future study in addition to this study variable that will use additional factors when doing their research. After a given period of time, more research may be done on the same subject and in the same locales to evaluate green banking practices on green finance in light of legislative initiatives so that researchers may examine if demographic factors have changed. Adopting a green strategy goes beyond only being environmentally benign because it also has many other benefits for society, such as lowering risk and expense for the bank, increasing its reputation, and helping to achieve the shared aim of environmental protection. In a broad sense, green finance supports both the bank's corporate social responsibility efforts and its business goals.

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