

## Perception verses Expectation towards solar power products in Mysore city

Sameer Ahamed<sup>1</sup>

Research Student, Department of Management Sciences, Maharaja Institute of Technology-  
Mysore, VTU Belgaum

Dr. Manoj Kumara N V<sup>2</sup>

Associate Professor & Research Guide, Department of Management Sciences, Maharaja  
Institute of Technology-Mysore, VTU Belgaum

### Abstract:

The main reason of the study is to determine the customer perception towards the solar products which will impact on customers of Eagle Technologies Mysore. The collection of data was done through two sources such as primary data was collected from the questionnaires and secondary data was collected from the books and past research. The purpose of the study is to analyze the present customer perception of the Eagle Technologies customer towards the solar products. for this data were collected through questionnaires and this questionnaire were given to the 50 customers of Eagle Technologies. The result of the questionnaires was the customers gave a positive answer with whatever information they got from the Eagle Technologies they believed that visiting company impact on their perception and their satisfaction level all the respondents have a different perception and different level of satisfaction. But Eagle Technologies cannot satisfy all customers and attract all customers. This study suggests to Eagle Technologies to improve their promotional activities so they can attract more number of customers.

**Key words:** customer perception, perception, solar products, customer satisfaction, perception towards solar products of eagle technologies customers.

### 1. Introduction:

Human beings are staidly assaulted by countless sensory simulation encompassing sound, sight, smell, taste, etc, the critical inquiries in the notice of understanding is why the comparable cosmos is trusted contrarily by disparate persons? The answer is the understanding; different people discern the cosmos contrarily. Observation is the method by means of that public harmonize and expound their sensory imitation in categorize to give significance to the nature. Awareness is the processes by to citizens organizes and clarify their sensory impersonation in the arrange to give significance of the nature.

### 2. Background of the study

Perception is selection and association of physical that stems from the beyond nature at one era or the supplementary to furnish the meaningful entity and experience. Customer perception applies the concept of sensory perception to marketing and advertising Just as sensory perception relates to how humans perceive and process sensory stimuli through their five senses consumer perception pertains to how individuals form opinions about companies and the merchandise they offer through the purchases they make.

### 3. Review of literature

Sukhatme (2012)<sup>22</sup> contributed a research article “Can India’s future energy needs of electricity by met by renewable energy sources? A revised assessment” The study stated that the annual need of 3,128TWh/year of electrical energy can be meet through renewable energy sources alone in the form of solar power (photovoltaic and thermal), wind power and hydroelectric power. There is a serious mismatch between the diurnal variation of the electricity generated by renewable sources and the diurnal variation of the demand for electricity.. Shamsun Nahar Momotaz and Asif Mahbub Karim (2012)<sup>23</sup> conducted a study on “Customer Satisfaction of the Solar Home System Service in

Bangladesh”. In Bangladesh rural electrification through Solar Home System is becoming more popular day by day particularly for remote, inaccessible areas where there still exists no infrastructure for conventional energy supply. It presents an attractive alternative to conventional electricity such as no monthly bills, no fuel cost, little repair and maintenance costs, easy to install anywhere. Solar Home Systems have already made significant headway in Bangladesh. A total of 70 users.. Mohammad Manfared and Saeed Golestan(2012)<sup>14</sup> in their study on “Control Strategies for single-phase grid integration of small-scale renewable energy sources”: Small-scale renewable energy sources such as small hydro turbines, roof-mounted photovoltaic and wind generation systems and commercially available fuel cells are usually connected to the single-phase distribution grid through a voltage source converter.. Also, some implementation aspects such as the fictitious signal generation and the single-phase grid synchronization techniques are discussed. Finally, through extensive simulations a comparative study of the presented control strategies is presented. Angeliki N Manegaki (2012)<sup>1</sup> analyzed in a study on Social Marketing Mix for Renewable energy in Europe based on Consumer stated preference surveys examined that the potential of social marketing for renewable energy sources. Therefore, this paper gauges the gap between the results from consumers stated preference studies and the insights generated for social marketing. Sudha Mavuri (2011)<sup>24</sup> This study analyzed that Consumer buying behavior for Solar Products is a typical phenomenon, since the attributes that drive to purchase solar products are slightly different as that of usual products. Also, there is a need for creating confidence in the consumers of solar products by the producers about addressing the problems of usage and after sales services to avoid the effect of negative word of mouth from the current consumers on future (potential) demand. Kartikeya Singh(2011)<sup>12</sup> presented a study on “India’s emissions in a climate constrained world”. The study figured out that scientific studies have repeatedly shown the need to prevent the increase in global emissions so that the planet's average temperature does not exceed 2°C over pre-industrial levels. The Greenhouse Development Rights (GDR) framework, perhaps considered the most favorable with respect to the responsibility and capacity of India to reduce emissions, was used to explore India's emissions trajectory. Sowmya Suryanarayanan (2009)<sup>26</sup> in her article “Exploring India's Renewable Energy Potential” states that in order to exploit the full potential of renewable energy, India must ensure the following: First, the renewable energy sector is still developing and hence involves high upfront and operating costs. Second, energy security cannot be achieved by just providing renewable energy at affordable costs. Third, renewable energy can be profitably developed only with the help of private sector participation since there are limitations on how much the public sector can spend. Pushkar Shanker (2009)<sup>18</sup> conducted a study on “Renewable Energy in India: Status and Future Prospects” and stated that India has a large potential for energy generation by utilization of renewable energy source, India’s current installed wind capacity is 8.7 GW (approximately 10% of the world’s total installed capacity). Tamilnadu, Maharashtra & Karnataka are the leaders in wind capacity. Sarkar, M.A.R (2007)<sup>27</sup> analyzed and found that Bangladesh is encountering difficulties in supplying energy to maintain its economic growth.. In the existing scenario energy efficiency and renewable energy can play a more significant role in the energy sector of Bangladesh. This will require a proper and supportive government policy. Action plans to enhance commercialization of energy efficiency and renewable energy technologies have been suggested. Chandrasekar and Tara Kandpal (2007)<sup>5</sup> presented “an opinion survey based assessment of renewable energy technology development in India” found that India has a very large potential for harnessing renewable energy sources. its appropriateness and dissemination strategies adopted for their diffusion and deployment. Results of an attempt to assess the current status of some renewable energy technologies in India are briefly presented in this paper.

Patrik Soderholm (2007)<sup>19</sup> In this paper, researchers provide an economic assessment of the potential for future wind power investments in Sweden in close conjunction with an analysis of the legal, attitudinal and policy-related uncertainties that face a wind mill investor. A stronger political commitment to wind power expansion in legal provisions as well as in the form of long-run stability in policy instrument implementation will probably necessary to attain the 2015 policy goal. Peter Meisen (2006)<sup>20</sup> in his article “Overview of Renewable Energy Potential of India” analyzed that India has a vast supply of renewable energy resources, and it has one of the largest programs in the world for deploying renewable energy products and systems. Renewable energy remains a small fraction of installed capacity, yet India is blessed with over 150,000 MW of exploitable renewable. Bharati Joshi (1992)<sup>3</sup> on “Decentralized energy planning model for a typical village in India” the energy-demand assessment was made to a typical village in India for both the domestic and irrigation sectors with an energy audit. Biogas is economical for lighting only when the biogas-conversion efficiency in the mantle is taken to be twice the 2% that is presently available. Filippin C (2011)<sup>7</sup> analyzed “winter energy behavior in multi-family block buildings in a temperate- cold climate in Argentina”. This paper analyzes the thermal and energy behavior of apartments in three-story block buildings located in a temperate-cold. Thermal insulation of roof and envelope appears as the most feasible alternative whereas closing balconies constitute a very good design option in winter. Venu (2011)<sup>29</sup> presented a research on “India’s planning for energy requirements” stated that India's planning for energy requirements in coal, oil, gas and nuclear power and in the fields of solar energy and the extension of forest areas to provide firewood. Coal and natural gas supplies will be increased to reduce oil demand. There will be an accelerated programmed of development of biogas, an exploration of solar energy potential and extensive a forestation to provide additional energy sources. Nikolaos Zografakis, (2010)<sup>16</sup> this study is to analyze and to evaluate the citizens’ public acceptance and willingness to pay (WTP), for Renewable Energy Sources (RES) in Crete. Residents of 1440 households all over Crete were interviewed face-to-face. Major conclusions were, WTP per household was found to be 16.33€ to be paid quarterly as an additional charge on the electricity bill. The subsidies create an economic incentive for the end users and have been rather instrumental at the initial stage of each program but lost their significance thereafter. To analyze the behavior of the major actors in the local market and householders the market-driven mechanism with a multi-parametric phenomenon has adopted. Other than the capital cost and energy price (cost to benefit), architectural type of buildings (or degree of urbanization) and household composition play the major roles in market diffusion. Haris Doukas, (2009)<sup>9</sup> This study emphasis on the development of a new policy that puts energy back at the heart of EU action. The difficulty and complexity of achieving green energy targets in the EU will require strengthened measures to promote implementation of new energy technologies (NET), as well as measures to support the related energy Research and Technology Development (R & TD). In this context, aim of this paper is the presentation of energy R & TD data collection strategies, as well as the related findings for the Greek energy market. Zhongren Zhou (2009)<sup>30</sup> analyzed the “structure of rural household energy consumption in northern China” energy consumption in terms of energy sources and energy end-uses in villages of Huantai County from 1989 to 2005. In addition, they discussed the influence of changes in energy consumption structure on household energy expenditures, environmental effects and supply-demand balance of energy. Mahmood M. H (2008)<sup>15</sup> the research stated that solar energy systems could provide reliable, clean and environment friendly electricity supply in the rural areas of Bangladesh. However, some in-built barriers such as high initial costs, acceptance of new technology and problems with after sales service still inhibits the widespread use of this technology among the mass users in the remote areas. Also stated that indicates that this energy service could help to improve the quality of life of the rural people and ultimately can lead the socio- economic development of the country.

Cheng-Dar Yue, Guo-Rong Huang (2011)<sup>4</sup> in the study of An evaluation of Domestic Solar energy Potential in Taiwan incorporating land use analysis, evaluated that Solar energy is widely regarded as a major renewable energy source, which in future energy systems will be able to contribute to the security of energy supply and the reduction of CO<sub>2</sub> emissions. However the exploited solar photovoltaic power generation in 2009 accounted for only 0.02% of total potential. Market price and investment incentive are the dominant factors that affect market acceptance of solar energy installation in Taiwan. The administrative barriers to the purchase and transmission of electricity generated from renewable energy. Sabah Abdullah and Wilner Jeanty.P (2011)<sup>25</sup> contributed a study on “Willingness to pay for renewable energy: Evidence from a contingent valuation survey in Kenya”. This paper examines willingness to pay (WTP) for rural electrification connection in Kisumu district, Kenya, using the contingent valuation method (CVM). The results indicate that respondents are willing to pay more for grid electricity (GE) services than photovoltaic (PV) electricity and households favoured monthly connection payments over a lump sum amount. Some of the policies suggested in this paper include: subsidizing the connection costs for both sources of electricity, adjusting the payment periods, and restructuring the market ownership of providing rural electricity services. Ordonez (2010)<sup>17</sup> made a research on “Analysis of the photovoltaic solar energy capacity of residential rooftops in Andalusia”. This research study determined the solar energy potential in Andalusia for grid-connected photovoltaic systems installed on residential rooftops. These factors allowed them to estimate the amount of electricity that could be potentially generated per year by solar panels. Hsing Hung Chen (2010)<sup>8</sup> in their study on “Strategic selection of suitable projects for hybrid solar-wind power generation systems”, analyzed the pressing need for maintaining a healthy environment with reasonable costs, China is moving toward the trend for generating electricity from renewable resources. Then, a fuzzy analytic hierarchy process associated with benefits, opportunities, costs and risks, is proposed to help select a suitable solar-wind power generation project. Tingting Feng (2009)<sup>28</sup> The study concluded that the productive use of bio energy in this area has its capability to release the current pressures on biomass sources by adjusting patterns of rural energy consumption, and to improve the conditions of health, environment, economy and energy conservation. Ahmet Kilinc (2009)<sup>2</sup> presented a research study on “Incentives and disincentives for using renewable energy”. A closed-form questionnaire was used to explore the prevalence of ideas of Turkish school students in years 7 and 8 (age 13–14 years) about renewable power generation. Only about half of the students appreciated the contribution that renewable sources could make to a reduction in global warming, and more than half thought that such generators would in fact create environmental problems. James Keirstead (2007)<sup>10</sup> in this study he figured out as Micro generation - the generation of electricity and/or heat within the home - has recently become a notable addition to UK energy policy debates. Specifically re- search has suggested that, as well as providing renewable energy, these technologies might encourage changes in household energy consumption. From a household perspective, system performance monitors had the most notable influence on these behavioral responses; the paper concludes that the full benefits of micro generation can only be realized if informed households are integrated within supportive industry and government frameworks. Javier Ordonez Garcia (2007)<sup>11</sup> researched the “Use of Solar energy in the buildings construction sector in Spain” and stated that the recent commitment made by many countries to combat the harmful effects of fossil fuel energy has centered world attention on the implementation of policies geared towards an optimal energy performance and the use of renewable energies. Daniel Goodchild (2007)<sup>6</sup> In the study analyzed that Micro generation- the generation of electricity and/or heat within the home has recently become a notable addition to UK energy policy debates. By adopting a mixed methods approach, this study aims to explore the role that photovoltaic installations can play in the future of UK energy. The paper concluded that the full benefits of micro generation can only be realized if informed households are integrated within

supportive industry and government frameworks. Reinders (1999)<sup>21</sup> conducted a research on “the performance of solar home systems and street light systems in Indonesia” 86 solar home systems and 15 street lighting systems were installed in the village of Sukatani in the province of West Java of Indonesia. This study analyzed the performance of these systems by monitoring data from field surveys recorded in the period 1988–1993. This survey comprised both technical measurements on 62 solar home systems and interviews with 22 users of these systems. The study found that technically the solar home systems performed well. The users are satisfied about the performance. However, in the course of time the configuration of the SHS has changed: villagers have replaced most of the strip lights with cheap home-made incandescent lamps and have replaced the initially-installed 100 Ah capacity solar batteries with cheaper locally produced 70 Ah capacity car batteries

#### 4. Objectives of the study

- To investigate the customer perception towards solar power products at eagle technologies.
- To determine the factors influencing customer perception towards solar power products at eagle technologies.

#### 5. Research methodology

**Research method:** descriptive method

**Sampling method:** simple random sampling

**Sampling techniques:** convenience sampling techniques

**Sample size:** study focused on the 50 customer

**Collection of the data:** primary data was collected through the questionnaire and taking an interview with the customers who visits the branch using the survey method.

**Tools of the study:**

- **Percentage analysis (%):** number of respondents taken divided by total responds multiplied by 100
- **Correlation(r):** formula to calculated correlation analysis is

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{(n\sum x^2 - \sum(x)^2) \times (n\sum y^2 - \sum(y)^2)}}$$

**Hypothesis of the study**

**H0:** There is no significant relationship between customer perception and customer satisfaction.

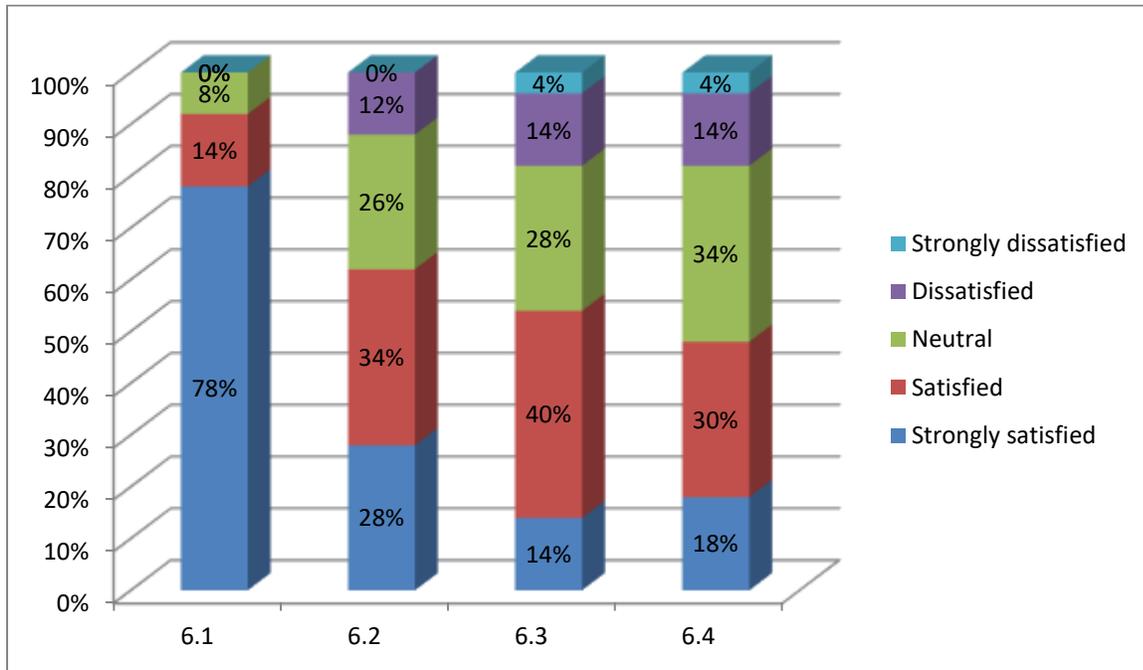
**H1:** There is significant relationship between customer perception and customer satisfaction.

#### 6. Analysis and interpretation

- 6.1. Eagle Technologies guarantee and warranty policies?
- 6.2. Reasonable price of the products of Eagle Technologies?
- 6.3. Eagle Technologies after sales service?
- 6.4. Availability of Eagle Technologies products?

**Table 6.1 customers respond on their perception**

Question number	Strongly satisfied	Satisfied	Neutral	Dissatisfied	Strongly dissatisfied
6.1	78%	14%	8%	0%	0%
6.2	28%	34%	26%	12%	0%
6.3	14%	40%	28%	14%	4%
6.4	18%	30%	34%	14%	4%



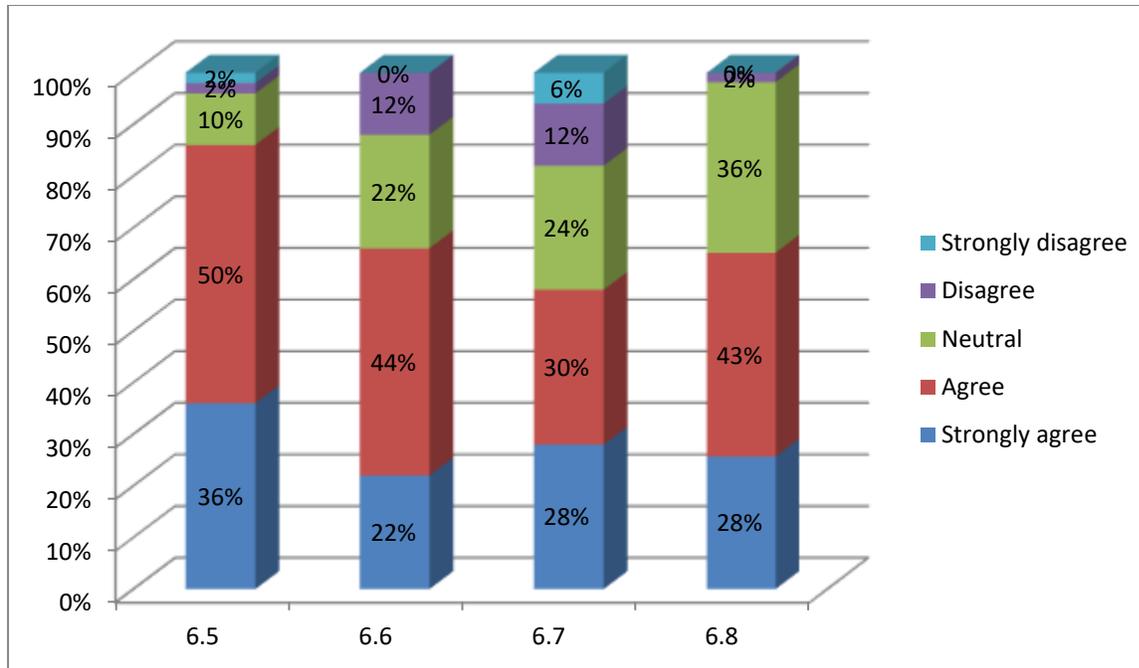
**Chart 6.1 % of customers respond on their reception**

By the above we conclude that 78% of people are satisfied with the guarantee and warranty policies, 62% customers are satisfied with the price of the products of Eagle Technologies, 54% customers satisfied with the after sales service and 48% customers are satisfied with the availability of eagle technologies products. By this we can know the customers perception towards the eagle technologies products.

- 6.5. Quality of the product of Eagle Technologies is good?
- 6.6. Eagle Technologies provide effective promotional activates?
- 6.7. Eagle technologies products are safe to use?
- 6.8. Durability of the product of Eagle Technologies is good?

**Table 6.2 Factors influencing to customers**

Question number	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
6.5	36%	50%	10%	2%	2%
6.6	22%	44%	22%	12%	0%
6.7	28%	30%	24%	12%	6%
6.8	28%	43%	36%	2%	0%



**Chart 6.2 % Factors influencing to customers**

By the above chart we can conclude that 86% customer agree that quality of eagle technologies products is good, 66% of customers agree that eagle technologies provide effective promotional activities, 58% of customers have agree that eagle technologies products are safe to use and 71% of customer agree that durability of eagle technologies products is good. Hence the relationship between the factors influencing and customer perception have a highly positive relationship.

**6.9.** Cost of maintenance of eagle technologies product?

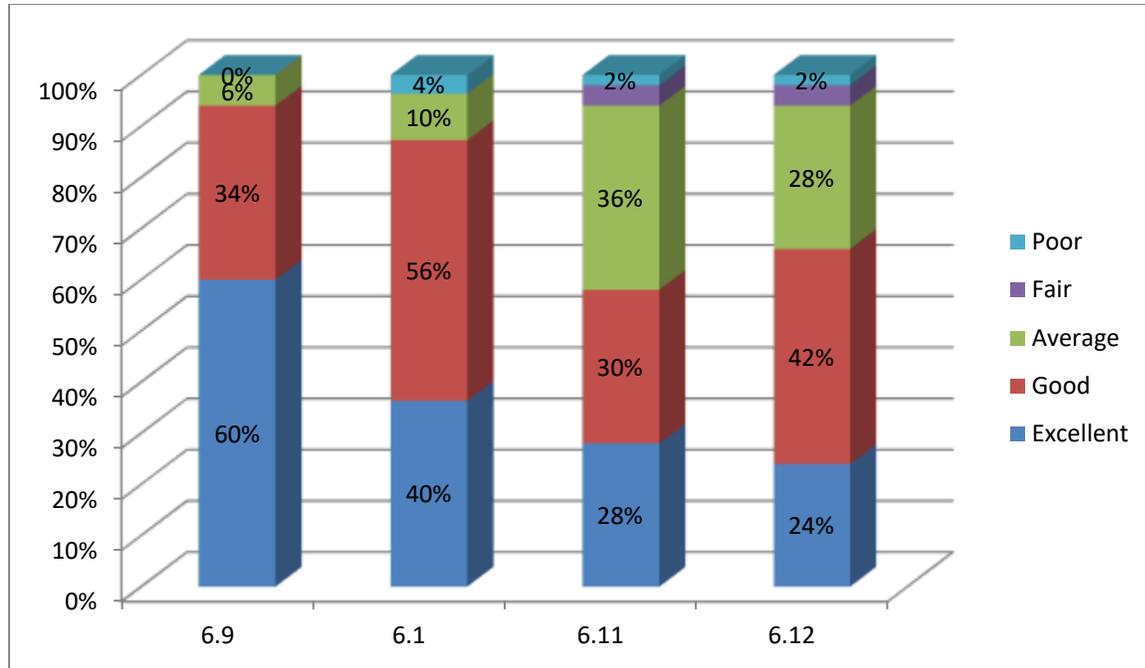
**6.10.** Easy portability of eagle technologies product?

**6.11.** On time product delivery from Eagle Technologies?

**6.12.** Technological upgradation of Eagle Technologies?

**Table 6.3** respondents of suggestion of measures

Question number	Excellent	Good	Average	Fair	Poor
6.9	60%	34%	6%	0%	0%
6.10	40%	56%	10%	0%	4%
6.11	28%	30%	36%	4%	2%
6.12	24%	42%	28%	4%	2%



**Chart number 6.3 % of respondents of suggestion of measures**

From the above Chart we can conclude that the 60% agreed that cost of maintenance of eagle technologies product is excellent, 56% customers have agree that portability of eagle technologies product is good, 58% of customers have agreed that eagle technologies give on time delivery and 66% of customers agree that technological upgradation of eagle technologies is excellent.

**6.13. Hypothesis**

**Correlation:**

**Customer perception (X)**

**Customer satisfaction (Y)**

**Table No: 4.41 Calculation of correlation**

X	Y	X <sup>2</sup>	Y <sup>2</sup>	XY
75	69	5,625	4,761	5,175
55	70	3,025	4,900	3,850
43	40	1,849	1,600	1,720
16	16	256	256	256
11	5	121	25	55
<b>∑ X –200</b>	<b>∑ Y –200</b>	<b>∑X<sup>2</sup> –10,876</b>	<b>∑Y<sup>2</sup> –11,542</b>	<b>∑XY-11,056</b>

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{(n\sum x^2 - \sum(x)^2) \times (n\sum y^2 - \sum(y)^2)}}$$

$$r = \frac{5(11056) - (200)(200)}{\sqrt{[5(10876) - (40000)] * [5(11542) - (40000)]}}$$

$$r = \frac{55280 - 40000}{\sqrt{[54380 - 40000] * [57710 - 40000]}}$$

$$r = \frac{15280}{\sqrt{14380 * 17710}}$$

$$r = \frac{15280}{\sqrt{254669800}}$$

$$r = \frac{15280}{15958.38}$$

$$r = 0.9575$$

$$r^2 = 0.9575^2$$

$$r^2 = 0.9168$$

$$1 - r^2 = 1 - 0.9168$$

$$= 0.0832$$

**r = 0.9575** highly positive relationship

**H1** is proved, hence there is a relationship between customer perception and customer satisfaction.

### 7. Findings:

- 78% of customers are satisfied with the guarantee and warranty policies of Eagle Technologies.
- Majority of customers agreed that Eagle Technologies product price is reasonable.
- 86% of people agreed that quality of Eagle Technologies product is good.
- Eagle Technologies promotional activities influenced 58% of people to purchase the product.
- 58% of customers agreed that Eagle Technologies give on time delivery of the product.

### 8. Suggestions:

- Eagle Technologies should provide convenient outlets so that customers can reach easily and purchase the product.
- There should be more and unique promotional activities to attract target customers so that there will be increase in the sales of the products.
- Eagle Technologies should give more offers and discounts to the customers and also provide extra benefits so that they can gain more number of customers.
- The Eagle Technologies should educate the rural areas people about the solar power products.
- Eagle Technologies should focus on improving in the installation of the product, the company must hire skilled engineers.

## 9. Conclusion:

The study concludes that majority of the customers are satisfied with the Eagle Technologies products. Their perception towards the Eagle Technologies products defers from each other the major factor influence the customers to purchase the Eagle Technologies solar product is power backup system and power efficiency. As per the study it is observed that Eagle Technologies as a good brand value among its customers but the company should provide convenient place of outlets so that it will be easy for the customers to purchase their products. It is also observed in the study that Eagle Technologies have covered more number of customers in Mysore region. The company should come up with innovative ideas for promoting their products. It is also observed that the company does not have more number of outlets in the Mysore area so the company should majorly focus on increasing their outlets so the company will gain more number of customers.

## Bibliography

1. Angeliki N Manegaki (2012)<sup>1</sup> “Social Marketing Mix for Renewable energy in Europe based on Consumer stated preference surveys”, *Renewable Energy, Eol, Vol 39, Issue 1, pp. 30-39*
2. Ahmet Kilinc, Martin Stanisstreet, Edward Boyes (2009)<sup>2</sup> “Incentives and disincentives for using renewable energy”, *Renewable and sustainable energy reviews, Eol, Vol 13, Issue 5, pp. 1089-1095*
3. Bharati joshi (1992)<sup>3</sup> “Decentralized energy planning model for a typical village in India”, *Energy Policy, Eol, Vol 17, Issue 9, pp. 869-876*
4. Cheng-Dar Yue, Guo-Rong Huang (2011)<sup>4</sup> “An evaluation of domestic solar energy potential in Taiwan incorporating land use analysis”, *Energy Policy, Eol, Vol 39, Issue 12, pp. 7988-8002.*
5. Chandrasekar and Tara Kandpal (2007)<sup>5</sup> “Assessment of renewable energy technology development India”, *Renewable and sustainable energy reviews, Eol, Vol 11, Issue 4, pp. 688-701.*
6. Daniel Goodchild (2007)<sup>6</sup> “Behavioral responses to photovoltaic systems in the UK domestic sector”, *Energy Policy, Eol, Vol 2, Issue 35, pp. 4128-4141.*
7. Filippín C, Flores larsen (2011)<sup>7</sup> “winter energy behavior in multifamily block building”, *Renewable and sustainable energy reviews, Eol, Vol 15, Issue 1, pp. 203-219.*
8. Hsing Hung Chen, He yau kang (2010)<sup>8</sup> “Strategic selection of suitable projects for hybrid solar wind power generation systems”, *Renewable and sustainable energy reviews, Eol, Vol 14, Issue 1, pp. 413-421.*
9. Haris Doukas, Alexandra G (2009)<sup>9</sup> “Energy Research and technology development data collection strategies in Greece”, *Renewable and sustainable energy reviews, Eol, Vol 13, Issue 3, pp. 682-688.*
10. James Keirstead (2007)<sup>10</sup> “Behavioral responses to photovoltaic systems in the UK domestic sector”, *Energy Policy, Eol, Vol 2, Issue 35, pp. 4128-4141*
11. Javier Ordonez Garcia (2007)<sup>11</sup> “Use of solar energy in the buildings construction sector”, *Renewable and sustainable energy reviews, Eol, Vol 11, Issue 9, pp. 2166-2178.*
12. Kartikeya Singh (2011)<sup>12</sup> “India’s emissions in a climate constrained world”, *Energy policy, Eol, Vol 39, Issue 6, pp. 3476-3482.*
13. K.C. Chang, W.M Lin (2009)<sup>13</sup> “Local market of solar water heaters review and prospective” *Renewable and sustainable energy reviews, Vol 13, Issue 9, pp. 2605-2612.*

14. Mohamma manfared and Saeed Golestan(2012)<sup>14</sup> “Control strategies for single phase grid integration of small scale renewable energy sources”, *Renewable and sustainable energy reviews, Eol, Vol 16, Issue 7, pp. 4982-4993.*
15. Mahmood M. H (2008)<sup>15</sup> “Problems and prospects of solar energy based electrification”, *Journal of quality and technology management, Vol 4, Issue 11, pp. 456-484.*
16. Nikolaos Zografakis, and Elli sifaki (2010)<sup>16</sup> “Assessment of public acceptance and willingness to pay for renewable energy sources”, *Renewable and sustainable energy reviews, Eol, Vol 14, Issue 3, pp. 1088-1095*
17. Ordonez and jadraque E (2010)<sup>17</sup> “Analysis of the photovoltaic solar energy capacity of residential rooftops”, *Renewable and sustainable energy reviews, Eol, Vol 14, Issue 7, pp. 2122-2130.*
18. Pushkar Shanker (2009)<sup>18</sup> “Renewable energy in India, status and future prospects”, *Renewable and sustainable energy reviews, Eol, Vol 3, Issue 14, pp. 2453-4468.*
19. Patrik Soderholm (2007)<sup>19</sup> “Wind power development, global policies and local obstacles”, *Renewable and sustainable energy reviews, Eol, Vol 11, Issue 3, pp. 365-400.*
20. Peter Meisen (2006)<sup>20</sup> “Overview of renewable energy potential of India”, *Global energy network institute, Vol 2, Issue 9, pp. 595-639.*
21. Reinders, Pramusito, and Sudradjat A (1999)<sup>21</sup> “the performance of solar home systems and street light systems”, *Renewable and sustainable energy reviews, Eol, Vol 3, Issue 1, pp. 1-47.*
22. Sukhatme (2012)<sup>22</sup> “Can India’s future energy needs of electricity by renewable energy sources? A revised assessment”, *Current Science, Eol, Vol 103, Issue 10, pp. 1153-1159.*
23. Shamsun Nahar Momotaz and Asif Mahbub Karim (2012)<sup>23</sup> “Customer satisfaction of the solar home system service”, *World journal of social science, Eol, Vol 2, Issue 7, pp. 193-210.*
24. Sudha Mavuri (2011)<sup>24</sup> “Impact of education and income on awareness creation and on solar products in India”, *World journal of social science, Eol, Vol 1, Issue 1, pp. 49-68.*
25. Sabah Abdullah and Wilner Jeanty.P (2011)<sup>25</sup> “Willingness to pay for renewable energy”, *Renewable and sustainable energy reviews, Eol, Vol 15, Issue 6, pp. 2974-2983.*
26. Sowmya Suryanarayanan (2009)<sup>26</sup> “Exploring India’s renewable energy potential”, *Renewable and sustainable energy reviews, Eol, Vol 3, Issue 11, pp. 223-235.*
27. Sarkar, M.A.R (2007)<sup>27</sup> “Issues relating to energy conservation and renewable energy”, *Bangladesh University of engineering and technology, Eol, Vol 3, Issue 2, pp. 223-244.*
28. Tingting Feng (2009)<sup>28</sup> “The case of the residential biogas model”, *Renewable and sustainable energy reviews, Eol, Vol 13, Issue 8, pp. 2070-2078.*
29. Venu (2011)<sup>29</sup> “India’s planning for energy requirements”, *Institute for financial management and research, Eol, Vol 11, Issue 3, pp. 1121-1132*
30. Zhongren Zhou (2009)<sup>30</sup> “structure of rural household energy consumption”, *Renewable and sustainable energy reviews, Eol, Vol 13, Issue 1, pp. 187-193*