

International Journal of Statistics and Applied Mathematics

ISSN: 2456-1452

Maths 2023; SP-8(5): 678-681

© 2023 Stats & Maths

<https://www.mathsjournal.com>

Received: 07-08-2023

Accepted: 10-09-2023

Gundabathina Annie Shifali

School of Agribusiness
Management, College of
Agriculture, Rajendranagar,
PJ TSAU, Hyderabad,
Telangana, India

Challa Srilatha

Assistant Professor, School of
Agribusiness Management,
College of Agriculture,
Rajendranagar, PJ TSAU,
Hyderabad, Telangana, India

Pagadala Radhika

Professor and Head, School of
Agribusiness Management,
College of Agriculture,
Rajendranagar, PJ TSAU,
Hyderabad, Telangana, India

Kallakuri Supriya

Professor and Head, Department
of Statistics & Mathematics,
College of Agriculture,
Rajendranagar, PJ TSAU,
Hyderabad, Telangana, India

Corresponding Author:

Gundabathina Annie Shifali

School of Agribusiness
Management, College of
Agriculture, Rajendranagar,
PJ TSAU, Hyderabad,
Telangana, India

Constraint analysis on factors responsible for adoption of landscaping and future needs of customers in Hyderabad city of Telangana

**Gundabathina Annie Shifali, Challa Srilatha, Pagadala Radhika and
Kallakuri Supriya**

DOI: <https://dx.doi.org/10.22271/math.2023.v8.i5Sj.1271>

Abstract

Landscaping is the process of changing the visible features of a given area of land, using the art of plant cultivation to enhance the appearance of the landscape and create an innovative space. The landscaping market is a dynamic industry that includes the design, installation and maintenance of outdoor spaces such as gardens, lawns, parks and commercial areas. A survey was conducted by contacting a sample of 20 respondents of Vruksha Kuteeram in the month of May 2023. Random Convenience sampling was adopted to select the sample to figure out the existing customer gaps and the future needs. The results of this study are analysed through a technique called Garrett ranking which gives a specific rank to all the issues according to their intensity. Garrett's Ranking Technique provides the change of orders of constraints and advantages into numerical scores. The results of the study revealed that the prices offered by the company is ranked as first followed by ease of usage of services and design of landscape respectively where as ease of location has occupied the last rank in giving satisfaction to the customers.

Keywords: Landscaping market, customer satisfaction level, garrett ranking

1. Introduction

The landscaping market is a dynamic industry that includes the design, installation and maintenance of outdoor spaces such as gardens, lawns, parks and commercial areas. It plays a key role in enhancing the aesthetics and functionality of outdoor spaces such as residential properties, commercial buildings, parks and public spaces. The landscaping industry has been experiencing steady growth in recent years, driven by factors such as increasing disposable income, growing awareness of environmental sustainability, and the desire for well-maintained outdoor spaces.

Hyderabad occupies 650 square kilometres (250 sq mi), along the banks of the Musi River, it has a population of about 6.8 million and a metropolitan population of about 7.7 million, making it the fourth most populous city and sixth most populous urban agglomeration in India. A gap analysis which is also referred to as "needs analysis" is prominent for any type of organizational performance. Companies can scrutinize their goals through a gap analysis to know whether they are on right track to accomplishing them. A survey was conducted by contacting a sample of 20 respondents (ten from residential segment and ten from institutional segment) of Vruksha Kuteeram in the month of May 2023. Random convenience sampling was adopted to select the sample to figure out the existing customer gaps and the future needs. The results of this survey are analysed through a technique called Garrett ranking which gives a specific rank to all the issues according to their intensity. It was given by Henry Garrett. Garrett's Ranking Technique provides the change of orders of constraints and advantages into numerical scores.

The findings of the study would be very useful to the landscaping professionals. Landscape business and startups to gauge the customer satisfaction and to grasp the future needs of the customers. It also throws light on future potentiality of increasing the income and employment in landscaping business.

The main objective of the study is: To ferret out the existing gaps and the future needs of customers.

2. Materials and Methods

Hyderabad, a metropolitan city will be chosen purposively for the study as it is the home of Vruksha Kuteeram which is a landscaping company based in Hyderabad. There has been a growing demand for high rise buildings with rapid development and expansion of the city in recent times. Hence, this region will be selected for the study. Purposive cum proportionate or random convenience sampling procedure will be adopted for collecting necessary data. Ten customers from residential segment and ten customers from institutional segment of Vruksha Kuteeram are selected randomly contributing a total of 20 customers to make the study.

The customers were given the questionnaires and desired information about different factors that can influence the success of the company were gathered. The information contained the trump card factors and constraints as well. The customers were asked to rank the different factors according to their satisfaction level. Here there is chance that two or more customers can give same rank to the same factor and vice versa can also happen. The prime advantage of this technique over simple frequency distribution is that the constraints are arranged based on their severity from the point of view of respondents.

2.1 Analytical Tools

2.1.1 Garrett’s Ranking Technique

Garrett’s ranking technique was employed to prioritize or rank the opinion of customers on factors responsible for adoption of landscaping in Hyderabad city.

Garrett’s formula

$$\text{Per cent position} = \frac{100*(R_{ij}-0.5)}{N_j}$$

Where, R_{ij} = rank given for i^{th} factor by the j^{th} individual
 N_j = number of factors ranked by j^{th} individual

3. Results and Discussion

In this study we have taken 12 factors into consideration. The respondents were asked to rank the factors as 1,2,3,4.....and so on till 12th rank according to their satisfaction level. Then the percent position of each rank will be calculated which will be converted into scores referring to the table given by Garrett and Woodworth (1969) [1]. For each factor, the scores of individual interviewees will be added together and divided by the total number of the respondents for whom scores will be added. These mean scores for all the constraints will be arranged in descending order; the constraints will be accordingly ranked.

Table 1: Factors responsible for adoption of Landscaping

S. No	Factor	Interpreted as
1	Design	Design of the landscape
2	Features	Features of the landscape installed
3	Ease of usage	Ease of usage of the services
4	Price	Prices offered by the company
5	Availability	Availability of the different services
6	Professionalism	Professionalism of the staff
7	Technical support	Technical support offered by the company
8	Responsiveness	Responsiveness of the staff
9	Performance	Performance of the staff
10	Location	Ease of the location
11	Information	Information provided by the company
12	Meeting expectations	Meeting the customer expectations

Table 2: Factor-wise number of customers satisfied under different ranks

Rank/Factor	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6	Rank 7	Rank 8	Rank 9	Rank 10	Rank 11	Rank 12
Design	0	0	15	3	2	0	0	0	0	0	0	0
Feature	0	0	2	4	13	2	0	1	0	0	0	0
Ease of usage	4	16	0	0	0	0	0	0	0	0	0	0
Price	16	4	0	0	0	0	0	0	0	0	0	0
Availability	0	0	0	0	2	15	1	2	0	0	0	0
Professionalism	0	0	0	0	1	2	0	12	5	0	0	0
Technical support	0	0	0	0	0	0	0	5	15	0	0	0
Responsiveness of staff	0	0	3	15	2	0	0	0	0	0	0	0
Performance of staff	0	0	0	0	0	1	15	0	0	4	0	0
Location ease	0	0	0	0	0	0	0	0	0	0	1	19
Information provision	0	0	0	0	0	0	4	0	0	12	4	0
Meeting expectations	0	0	0	0	0	0	0	0	0	4	15	1

From the table 2, it is noted that 15 people ranked design as three, three people ranked as four and two people ranked as five. Similarly, all the other factors were ranked by the customers as given in the table 2.

The percent position of the 12 factors is calculated and different factors have shown different percent positions as depicted in the Table 3.

The Garrett values of the factors is calculated using the Garrett Ranking conversion table given by Garrett and Woodworth (1969) [1]. The Garrett ranking conversion table contains different values for different percent positions of the ranks. By using the percent position of a rank and the Garrett value can be calculated.

Table 3: Rank-wise Garrett values for different factors

Rank	$100*(R_{ij}-0.5)/N_j$	Percent position	Garrett value
1	$100(1-0.5)/12$		4.167
2	$100(2-0.5)/12$		12.5
3	$100(3-0.5)/12$		20.833
4	$100(4-0.5)/12$		29.167
5	$100(5-0.5)/12$		37.5
6	$100(6-0.5)/12$		45.833
7	$100(7-0.5)/12$		54.167
8	$100(8-0.5)/12$		62.5
9	$100(9-0.5)/12$		70.833
10	$100(10-0.5)/12$		79.167
11	$100(11-0.5)/12$		87.5
12	$100(12-0.5)/12$		95.833

These Garrett values are then applied to the rankings of the factors after which averages are taken and finally ranks were allotted to each factor. Different factors will be given different ranks according to the customer satisfaction level.

It is observed from the table 4 that, the price is ranked first which indicated that almost all the customers were satisfied with the prices of the services offered by the company. It also shows that the prices offered were affordable. Hence, there is no change in the prices offered by the company.

Ease of usage is ranked second showing that, the services offered by the company are at a great ease to use. The

services offered by the company are good and easy at usage which is liked by most of the customers. This shows that, the services offered by the company should be the same without any changes.

Design of the landscape is ranked third revealing that, most of the customers are satisfied with the designs of the landscapes provided by the company. But changes are to be made to the design of the landscapes according to the changing trends, needs and interests of the customers.

Table 4: Factors responsible for Customer Satisfaction

Factor/Rank	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6	Rank 7	Rank 8	Rank 9	Rank 10	Rank 11	Rank 12	Total	Average score	Rank
Design	0	0	990	183	114	0	0	0	0	0	0	0	1287	64.35	3
Feature	0	0	132	244	741	104	0	44	0	0	0	0	1265	63.25	4
Ease of usage	332	1168	0	0	0	0	0	0	0	0	0	0	1500	75	2
Price	1328	292	0	0	0	0	0	0	0	0	0	0	1620	81	1
Availability	0	0	0	0	114	780	48	88	0	0	0	0	1030	51.5	6
Professionalism	0	0	0	0	57	104	0	528	195	0	0	0	884	44.2	8
Technical support	0	0	0	0	0	0	0	220	585	0	0	0	805	40.25	9
Responsiveness of staff	0	0	198	915	114	0	0	0	0	0	0	0	1227	61.35	5
Performance of staff	0	0	0	0	0	52	720	0	0	136	0	0	908	45.4	7
Location ease	0	0	0	0	0	0	0	0	0	0	27	323	350	17.5	12
Information provision	0	0	0	0	0	0	192	0	0	408	108	0	708	35.4	10
Meeting expectations	0	0	0	0	0	0	0	0	0	136	405	17	558	27.9	11

Table 5: Final Ranks allotted by customers according to their satisfaction level

Rank	Factor
Rank 1	Prices offered by the company
Rank 2	Ease of usage of the services
Rank 3	Design of the landscape
Rank 4	Features of the landscape installed
Rank 5	Responsiveness of the staff
Rank 6	Availability of the different services
Rank 7	Performance of the staff
Rank 8	Professionalism of the staff
Rank 9	Technical support offered by the company
Rank 10	Information provided by the company
Rank 11	Meeting the customer expectations
Rank 12	Ease of the location

Features of the landscape are ranked at number four indicating that, most of the customers are satisfied with the features of the landscape offered by the company. But there are some other features that are to be included to the landscape services offered by the company.

Responsiveness of the staff is ranked a fifth revealing that, the staff of the company are quite responsive and easy to approach. This shows that the employees are very responsible and good at communicating with the customers. Since communication is a key to success in any business, employees should be good at it.

Availability of services is ranked at number six since most of the customers felt that not many services are made available by the company. This shows that, the company should diversify itself into more services so that it can grab a greater customer market.

Performance of the staff is ranked at number seven indicating that, there should an improvement in the overall performance of the staff. Customers are not completely satisfied by the performance of the staff which shows that gap exists. This gap should be corrected by the best possible measure like

giving training to the staff, providing some incentives, personality development classes like motivation etc.

Professionalism is ranked at number eight reveals that, the company and its staff should make some changes to their working style. Since landscaping business is related to aesthetics there should be more professionalism in work that can bring more customer satisfaction or else there is a chance of losing the market. Professionalism indicates responsibility, respect and risk taking towards their profession.

Technical support is ranked ninth showing that, the staff are not technically sound. This can lead to many other issues including losing the market and loyalty of customers. Changes are to be made so that the company can improve itself in the technical aspects.

Information provision is ranked at number ten reflecting that, the company is not providing appropriate information to the customers regarding all the aspects. This can lead to the loss of market because customers nowadays are more bothered about the information of different aspects. When proper information is not provided, customers may search for others who can provide it correctly.

Meeting the expectations is given a last but one rank which indicates that, the company is poor at meeting the expectations of the customers. This factor should be immediately looked into and sorted at the earliest for the increase of market.

Location ease is the factor ranked at last showing that, the company should be at a better location that is easily available to all customers.

The results of the study also included some other constraints faced by the customers. These constraints included environmental constraints at a major place. The constraints caused by environment includes wind breakage, rain clogging, runoff losses and thunder striking.

Rain clogging is addressed as the major constraint by most of the customers which shows that, there is a gap which should be corrected. Other environmental constraints are also having

their cake share in creating the gap and causing problems to the customers.

The results also include the most liked thing about the company which has been answered as the quality of the services offered. Many customers are satisfied with quality of the services offered. So, the quality should be consistently maintained without fail in the future so that the company can make loyal customers.

Just like coin having two sides, we have the least liked thing about the company which is the customer service. Many customers disliked the customer service offered by the company. So, this should be improved in order to not lose the present customer market.

Customers also provided some suggestions and changes which should be included in the growth plan so that Vruksha Kuteeram can see great numbers in profits and grow to greater heights.

4. Conclusion

- Prices offered by the company is the factor which gave ultimate satisfaction to the customers and is responsible for the adoption of landscaping followed by ease of usage of services and design of the landscape respectively as they are ranked on the top by the customers.
- The company should make some changes to the location, techniques followed in meeting the customer expectations and information provided as these are the factors ranked as least by the customers.

5. References

1. Anonymous. Vruksha Kuteeram LLP; c2023. <https://vrukshakuteeram.in/about>
2. Aleeswari A. Study on industrial problems using Garrett ranking technique. In International Conference on Management and Information Systems. 2018;21:22.
3. Upadhyay S, Singh VK, Verma AP, Verma AK, Asha K. Constraints analysis in hybrid paddy farming in eastern zone of Uttar Pradesh using garrett ranking technique. International Journal of Current Microbiology and Applied Sciences. 2021;10(02):791-796.