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AN APPLICATION OF IMPORTANCE-PERFORMANCE ANALYSIS  
TO A SKI RESORT: A CASE STUDY IN NORTH CAROLINA

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ABSTRACT

Skiing is one of the most popular winter outdoor recreation activities in the United States. The objective of this case study is to identify and evaluate the attributes (features and services) of a ski resort. By identifying which attributes and services the ski market considers important together with how well the ski area provides these attributes and services, ski area promoters can determine what the appropriate marketing message and management strategy should be. The procedure used is known as Importance-Performance Analysis. Basically, this procedure involves asking skiers to rate the importance and performance of identified ski resort attributes. Results are then graphically displayed on a two-dimensional "action grid" that delineates weaknesses and strengths of the ski area in question. Several marketing and management implications are discussed.

AN APPLICATION OF IMPORTANCE-PERFORMANCE ANALYSIS  
TO A SKI REPORT: A CASE STUDY IN NORTH CAROLINA

INTRODUCTION

Skiing is one of the most popular and fastest growing winter outdoor recreation activities in the United States. It provides exciting winter based recreation opportunities for millions of participants and creates significant employment, investment, income and tax revenue impacts for

ski destinations (1, 2). Although there is a limited number of ski areas in the South, the economic contribution of the industry is felt throughout the region (3). The objective of this case study is to identify and evaluate the attributes (features and services) of a ski resort. By identifying which attributes and services the ski market considers important together with how well the ski area provides these attributes and services, ski area promoters can determine what the appropriate marketing message and management strategy should be.

The procedure used in this study is known as Importance-Performance Analysis. However, in some cases, the same procedure is referred to as perceptual mapping (4, 5). Regardless of the name used, the procedure shows the relative importance of various attributes and the performance of the firm, product or destination under study in providing these attributes. The use of importance-performance analysis has important marketing and management implications for decision makers. Originally used in the field of marketing (6), its use has spread to other fields including recreation and leisure (7, 8, 9, 10, 11, 12, 13, 14, 15) and tourism and destination marketing (5, 16).

A review of related literature indicates that Importance-Performance Analysis is implemented in five distinct stages. These five stages are:

1. The first step involves developing a list of "product" attributes; in this case, those of a ski resort. Since this is the foundation of the study, it is essential to create a list that accurately represents the importance level of the product and/or service's attributes.

2. The second step of the procedure involves conducting a survey to measure the product or service. In this step, participants are asked to rate the importance of an attribute in an ideal situation and then to rate the performance of the same attribute in relation to an actual situation. A Likert-type scale is used with responses ranging from high to low levels for both importance and performance.

3. The third step of this procedure involves estimating the perceived importance and performance of each attribute through the calculation of the mean importance value and the mean performance value for each attribute.

4. The next step is to plot on the action grid the intersect of the mean perceived importance and performance values for each attribute. Importance values form the horizontal axis, while performance values form the vertical axis (6).

5. Finally, from the location of the attributes in one of the four action grid quadrants, the relationship of performance to importance can be quickly assessed. The promoter or manager can focus the business efforts on improving performance that falls short of expectations.

## STUDY METHOD AND APPLICATION

An Importance-Performance Analysis of a product or service requires two pieces of information--the importance of certain benefits of attributes to a segment of the market, and the perception of that market segment about the performance level of those attributes.

In order to use this procedure for the evaluation of a ski resort, several considerations were addressed. The first issue involved developing a viable list which accurately described the particular resort being studied and those attributes of importance to participants. Second, a survey instrument was developed using the attribute list as its foundation. In order to ensure that no important attributes were overlooked, a list was given to several ski operators located in North Carolina for review. Input from these operators resulted in a refined list of 117 ski resort attributes (See Table 1). The list of 117 ski resort attributes served as the foundation for the survey instrument. This survey instrument consisted of two sections. The first dealt with the participant's responses to the perceived importance and performance of the 117 ski attributes on a Likert-type scale from one being not important/not satisfied to five being very important/very satisfied. The second section of the survey instrument contained information regarding the characteristics of participants (e.g., age, gender, hometown, current skiing ability, first/last skiing date, frequency of skiing in the last season). The developed survey instrument was administered to those who went on a packaged ski tour conducted by Clemson University. The analysis of this study aggregated three years survey results from 99 respondents. Statistical analysis and construction of the action grid were accomplished by Statistical Analysis System (SAS).

## RESULTS

Table 1 shows the importance and performance mean scores of ski attributes and the quadrant in which the attribute was plotted. The literature on the use of importance and performance analysis indicates that the selection of the crosshairs should consider management's goals for the study in question, and if possible, should force at least one attribute into each of the four quadrants (6, 17). For this study, the values of "4" for performance and "3.5" for importance were selected as the crosshairs for the action grid (Figure 1). Placement of the crosshairs of performance at "4", instead of the "3.5" value of the scale, reflected a desire to maintain and/or increase performance standards for the ski resort.

According to the action grid (Figure 1), a total of 65 attributes (55.6%) fell into the "Keep up the Good Work" area (Quadrant = II) of the action grid. Skiers were satisfied with these attributes which they consider to be high in importance. Six attributes (5.1%) were plotted in the "Possible Overkill" (Quadrant = I) area. Skiers rated these attributes high in performance but attached little importance to them. Ski resort attributes plotted into this quadrant were: number of spaces

in parking lot, eating space, public address system, skier gender, age of instructors, and appearance of ski instructors. Thirteen ski attributes (11.1%), five ski store/shop related attributes, laundromats, spas, characteristic of skier age and skiing ability, and ski-school oriented attributes (advertising, skills taught, ski knowledge presented), fell within the "Low Priority" (Quadrant = III) area. Skiers rated these items low in performance and attached little importance to them. Thirty-three attributes (28.2%) were plotted into the "Concentrate Here" (Quadrant = IV) area of the action grid. Respondents rated these attributes high in importance but low in performance. These attributes included food services, restroom areas, site and price of lockers, information regarding safety and notices of special events, slope environment related attributes, and some auxiliary services (See Table 1).

### IMPLICATIONS

The findings of this study from Importance-Performance Analysis can be used by ski managers to develop potential management and marketing strategies. The technique can also provide an effective means of evaluating the current conditions of ski resorts as perceived by skiers. The procedure has great potential as a periodic monitoring device for detecting any shifts in skier satisfaction. It can be effectively used to point out ski resorts' strengths and weaknesses. Thus, depending on management's orientation, appropriate strategies can be developed by making adjustments of the Importance-Performance Analysis action grid. For example, if management desires to become a leader in ski business, standards can be increased by moving the crosshairs higher on the action grid.

Results of this study also provided information that can be used by ski resorts in the region. The study revealed that slope environment with respect to trails, grooming, snow making, level of noise and crowdedness of trails is an area that management should pay extra attention to in order to increase and/or establish repeat business. In addition, attributes such as restrooms, lockers, quality of food, quality and variety of rental equipments and rental fees, entertainment and dissemination of information on special events and safety area also of high importance to skiers.

By periodically using a survey developed for a particular ski site, managers possess an effective monitoring device. This would enable ski operators to correct attributes that may have fallen into the "Concentrate Here" Quadrant in the past. For example, Guadangalo (18) used an Importance-Performance Analysis to evaluate a ten kilometer race for three consecutive years. Attributes which fell into the "concentrate here" quadrant in the first year were corrected through appropriate management action and showed a significantly higher performance rating for the following year.

One of the management implications of this technique is that it enables management to redirect their resources and allocate them effectively as suggested by action grid. For example, attributes that

fall in the "Possible Overkill" Quadrant should be re-examined if resources are not used to the best benefit of management. On the other hand, "Concentrate Here" Quadrant attributes should receive high priority of management attention. Although Importance-Performance Analysis has been shown to be useful, certain cautions should be mentioned. The procedure is not intended to provide detailed and highly specific information. Should this procedure reveal certain problem areas in terms of performance and expectation, more study may be necessary to delineate exactly what the problems and concerns are and what the best possible solutions should be. In addition, as conditions change over time, the attribute list must reflect these changes. Refinement of the attribute list is necessary to ensure the validity of future studies and management action to be taken.

#### LIMITATION OF THE STUDY

Due to the relatively small sample size and the nature of the unit of analysis used, the study did not attempt to consider possible intervening factors that may affect the composition of action grid. Future research in this area should examine the possible effect of intervening variables on the mean score distribution of attributes in question. If possible, researchers should incorporate identifiable intervening variables. These intervening variables for ski resorts may include years of skiing, skiing ability, the distance the skier travels to the resort, management style of ski operators, and so on.

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Table 1  
Ski Resort Attributes of Mean Importance-Performance Scores

Ski Resort Attributes	Mean Scores		Quadrant	
	Importance	Performance		
<b>I. <u>Lodge/Ski Resort</u></b>				
<b>Parking</b>				
A1	1. Number of spaces in lot	3.27	4.37	I
A2	2. Security of parking	3.99	4.16	II
A3	3. Closeness to lodge	3.79	3.72	IV
<b>Food Services</b>				
A4	1. Quality of food	4.11	2.86	IV
A5	2. Variety of foods	3.60	3.02	IV
A6	3. Price of food	4.30	2.07	II
A7	4. Friendliness of personnel	3.89	3.82	IV
A8	5. Speed of Service	3.82	3.77	IV
A9	6. Eating Space	3.48	4.21	I
<b>Main Lodge Room</b>				
B1	1. Physical Appearance	3.63	4.09	II
B2	2. Seating	3.73	4.06	II
B3	3. Fireplace	3.79	4.29	II
B4	4. Scenic Views	3.68	4.17	II
B5	5. Bar Service	3.20	2.90	II
<b>Stores/Shops</b>				
B6	1. Variety of merchandise	2.81	3.92	III
B7	2. Price of merchandise	3.41	2.91	III
B8	3. Variety of shops	2.87	3.28	III
B9	4. Friendliness of personnel	3.61	4.00	II
B0	5. Personnel's knowledge of merchandise	3.63	3.85	II
<b>Restrooms</b>				
C1	1. Clean	4.58	3.83	IV
C2	2. Necessary supplies	4.46	3.95	IV
C3	3. Not crowded	3.94	3.99	II
C4	4. Accessible from Ski Slope	4.32	3.87	IV
C5	5. Dressing space	3.94	3.01	IV
<b>Locker</b>				
C6	1. Availability of lockers	4.08	4.13	II
C7	2. Location of lockers	3.65	4.17	II
C8	3. Site of lockers	3.72	3.97	IV
C9	4. Price of locker	3.68	3.45	IV
<b>Maintenance</b>				
D1	1. Cleanliness	4.28	4.05	II
D2	2. Well-kept appearance	4.19	4.15	II



Ski Resort Attributes	Mean Scores		Quadrant	
	Importance	Performance		
<b>Information/Direction Services</b>				
D3	1. Knowledgeable employees	4.37	4.11	II
D4	2. Accessibility of employees	4.13	4.09	II
D5	3. Visibility of signs	4.27	3.94	II
D6	4. Wording of sign	3.75	4.02	II
D7	5. Resort brochure	3.20	3.79	II
D8	6. Safety/regulation signs	4.00	4.03	II
D9	7. Price sign	3.70	3.60	IV
D0	8. Notices of special events	3.75	3.29	IV
DX	9. Public address system	3.55	4.09	II
<b>II. Skier Services</b>				
<b>Equipment</b>				
E1	1. Quality of equipment	4.46	4.01	II
E2	2. Rental fees of equipment	4.07	3.88	IV
E3	3. Variety of sites	4.28	4.19	II
E4	4. Variety of brands	3.31	3.53	III
E5	5. Friendliness of personnel	3.95	4.25	II
E6	6. Speed of service	3.93	4.33	II
E7	7. Exchange equipment during day	3.87	4.19	II
<b>First Aid/Ski Patrol</b>				
E8	1. Friendliness	4.36	4.20	II
E9	2. Well-trained	4.79	4.32	II
E0	3. Numbers of ski patrollers	4.28	4.36	II
EX	4. Easy recognition	4.50	4.29	II
<b>III. Auxiliary Services</b>				
F1	1. Housing	4.37	4.25	II
F2	2. Night Clubs/bars	3.55	3.37	IV
F3	3. Restaurants	4.03	3.88	IV
F4	4. Shops	3.02	3.85	III
F5	5. Service stations	3.61	3.83	IV
F6	6. Special events	3.50	3.35	III
F7	7. Grocery/food stores	3.69	3.84	IV
F8	8. Laundromats	2.93	3.53	III
F9	9. Spas	3.50	2.90	III
<b>IV. Slope Environment</b>				
G1	1. Number of trails	4.17	3.00	IV
G2	2. Variety of trail difficulty	4.16	3.19	IV
G3	3. Length of trails	4.13	2.90	IV
G4	4. Width of trails	4.01	3.71	IV
G5	5. Grooming of trails	4.50	3.70	IV
G6	6. Snow making	4.46	3.78	IV
G7	7. Level of noise	3.64	3.90	IV
G8	8. Public address system	3.51	4.10	I
G9	9. Crowdedness of trail	4.56	3.65	IV

Ski Resort Attributes	Mean Scores		Quadrant	
	Importance	Performance		
<b>V. <u>Operations</u></b>				
H1	1. Skiing hours	4.26	3.95	IV
H2	2. Ski lodge hours	4.10	4.04	II
H3	3. Lift location	4.22	4.02	II
H4	4. Number of lifts	4.38	4.90	IV
H5	5. Capacity of lifts	4.24	4.06	II
H6	6. Lift accessibility	4.36	4.00	II
H7	7. Number of lift mid-stations	3.67	3.70	IV
H8	8. Lift unloading	4.00	3.80	IV
H9	9. Friendliness of lift personnel	3.97	4.16	II
H0	10. Life line management	4.12	4.01	II
<b>VI. <u>Characteristics of other skiers</u></b>				
I1	1. Skier age	2.93	3.88	III
I2	2. Skier gender	2.81	4.02	I
I3	3. Skier ability	3.29	3.86	III
I4	4. Skier friendliness	4.16	3.95	IV
<b>VII. <u>Ski-School Organization</u></b>				
K1	1. Dates of Program	4.00	4.17	II
K2	2. Advertising	3.47	3.76	III
K3	3. Detailed information	4.02	3.80	IV
K4	4. Registration procedures	3.80	3.96	IV
K5	5. Length of program	3.90	4.13	II
K6	6. Cost of program	4.22	4.12	II
K7	7. Length of skiing time	4.33	4.12	II
K8	8. Friendliness of office personnel	4.04	4.27	II
K9	9. Daily lift ticket procedures	4.07	4.12	II
K0	10. Apres-ski socials	3.77	3.07	IV
<b>VIII. <u>Ski Instruction</u></b>				
L1	1. Length of lessons	4.00	3.99	II
L2	2. Time of lessons	3.94	4.11	II
L3	3. Number of lessons	4.07	4.18	II
L4	4. Size of classes	4.10	4.28	II
L5	5. Quality of instruction	4.56	4.43	II
L6	6. Quality of written materials	3.74	3.73	IV
L7	7. Ski tests on skills taught	3.45	3.90	III
L8	8. Written test on knowledge presented	2.98	3.34	III
<b>IX. <u>Ski Instructors</u></b>				
M1	1. Friendliness	4.47	4.49	II
M2	2. Patience	4.67	4.46	II
M3	3. Knowledge of skills	4.77	4.64	II
M4	4. Demonstration of skills	4.64	4.56	II
M5	5. Appearance	3.47	4.49	I
M6	6. Enthusiasm (willingness to teach)	4.63	4.59	II
M7	7. Encouragement	4.60	4.51	II
M8	8. Individual attention	4.48	4.30	II
M9	9. Age	2.71	4.55	I
M0	10. Gender	2.36	4.41	II

Figure 1  
Action Grid of Ski Resort Attributes

