# COASTAL SCENIC EVALUATION
# BY APPLICATION OF
# FUZZY LOGIC MATHEMATICS

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BY

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Approval of the Graduate School of Natural and Applied Sciences

Prof. Dr. Canan Özgen
Director

I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Science.

Prof. Dr. Erdal Çokça
Chair of Civil Engineering Department

This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Science.

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# ABSTRACT

COASTAL SCENIC EVALUATION
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Coastal scenery evaluated by utilization of selected landscape components was subject to fuzzy logic system approach. Based on this methodology, coastal areas were grouped into five classes using the evaluation index D giving the overall result of scenic assessment over the attributes. Within the methodology, public perception surveys from Turkey, UK, Malta, and Croatia were used as a tool for environmental perception in the methodology. The results of the public perception surveys were utilized to obtain the weights of scenic parameters. Public surveys in Çıralı were related to demographical information of respondents by factorial analysis. A coastal scenic classification curve was obtained for all 86 coastal sites around the world which enabled grouping of the sites in five different classes.

Keywords: Coastal Scenic Assessment, Public Perception

# ÖZ

## BULANIK MANTIK YÖNETİMİYLE KIYI ALANLARIN DEĞERLENDİRİLMESİ

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Bu çalışma, bulanık mantık yöntemi kullanılarak geliştirilen kıyı alanları değerlendirme metodolojisini açıklamakta ve çevresel algılamanın metodolojideki etkilerini tartışmaktadır. Bu metot ile bulunan değerlendirme parametresi D' ye göre kıyı alanları beş ayrı sınıfa ayrılabilmektedir. Türkiye, Büyük Britanya, Malta ve Hırvatistan'da halk algılama anketleri kullanılarak kıyı parametrelerinin ağırlıklı ortalamalarının hesaplanmasında kullanılmıştır. Anketler kullanılarak faktör analizi ile ankete katılanların demografik bilgileri ilişkilendirilmiştir. Ortaya konan metot ile dünyadaki 86 kıyı alanının değerlendirme katsayılarına (D değerleri) göre sıralanmış ve sınıflandırılmıştır. Kıyı alanlarının verilen sınıflandırmaya göre dağılımının normal bir dağılıma uyduğu görülmüştür.

Anahtar Kelimeler: Kıyı Alanlarının Değerlendirilmesi, Halkın Algılaması

To My Love

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# CHAPTER 1
# INTRODUCTION

As the world faces with critical global environmental retreats, protection of environment and conservation of natural resources in both local and global scale have become more prominent. Today more professional and scientific disciplines strike into environmental issues than ever.

Lowenthal (1992) stressed "current concern for environmental quality has already led architects and psychologists, engineers and planners, to new ways of examining how man sees the earth he lives in, and how vision affects action."

Legal regulations today consider the environmental issues much more. Daniel (1990) stated, in legal point of view, legislation of the late 1960s and 1970s broadened the range of environmental concerns to include natural scenic beauty, wilderness experience, and outdoor recreation opportunity and visibility values. Daniel (1990) points out that scenic beauty continues to be an important "natural resource" requiring careful management and protection.

European Landscape Conference Final Conclusive Announcement on December 9, 2003 also stated that; "to promote landscape protection, management and planning, and to organize European co-operation on landscape issues is very important." and "it is a key component in the pursuit of sustainable development, and is a potential asset for economic investment and regeneration."

Scenery is "a picturesque view or landscape" (Merriam- Webster Dictionary Online, 2004) From an ecological viewpoint, "landscape is seen as a reflection of the mutual interactions between living organisms and their environment, considering landscape as an ecosystem." (Van Der Meulen, 1997)

Evaluation of landscape is important as it provides measurement, description and classification of landscapes (Dakin 2003) and provides a means for which scenery/ amenities can be compared against other resource considerations; it can improve resource inventories, carrying capacity decision making, and Environmental Impact Assessments. (Ergin et al, 2003)

Although scenery is invaluable asset, a voluminous literature exists with respect to scenic assessment but this shrinks rapidly when the coastal scene is examined. (Ergin et al, 2003)

In the light of growing concerns for coastal areas which are under the threat of forcing function of people who wants to utilize the potentials offered by these areas, the objectives of this thesis were set as :

- To assess coastal scenic quality by selected components based on scientific methodology,

- To make public perception study to evaluate validity & weights of the coastal scenic parameters,

- To provide baseline information so that a sound scientific tool can be available for any subsequent management plans;

The first chapter of the thesis is the introduction to coastal scenery evaluation. The motivation of the thesis was emphasized in this chapter.

In the second chapter, literature about scenic evaluation was discussed briefly to support the methodological progress. Methodology to semi quantitative assessment of coastal landscapes was introduced. Fuzzy logic and the use of fuzzy logic in coastal scenic evaluation methodology were described. Where and how public perception survey was used in the methodology, was described.

In the third chapter, a detailed public perception on landscape assessment was discussed. Literature on public perception on scenic assessment was discussed. Inquiries from Turkey, Malta, England and Croatia were examined statistically in order to see cross cultural preferences to coastal area use and features. Beside, inquiries from Çıralı, Turkey were examined analyzing demographical information of participants such as age, sex, being local, foreign/ native tourist, etc.

In chapter four, the result of coastal area assessment was discussed with all sites evaluated with a total of 86 and with all public surveys carried out by now, and in chapter five the conclusion, discussion and recommendations of the thesis were included.

# CHAPTER 2
# METHODOLOGY

## 2.1 Literature Survey on Scenic Assessment

Approaches to classify landscapes range from expert based ones relying on evaluation by professionals, through perceptual and experimental approaches obtaining observer responses to landscape photographs, to experiential and humanistic approaches exploring and clarifying meanings of landscape. (Dakin, 2003) Table 1 demonstrates the classification of landscape assessment in a tabular form.

Table 1- Categorizations of approaches to landscape assessment (Dakin 2003)

| | EXPERT | EXPERIMENTAL | EXPERIENTIAL |
|---|---|---|---|
| | -quality inherent in landscape<br>-assessed by expert | | 1. quality in earning to observers<br>2. assessed by involved observer |
| Daniel & Vining (1983) | Ecological Formal Aesthetic | Psychophysical<br><br>Psychological | Phenomenological |
| Portoeous (1982) | Planner | Experimentalist | Humanist |
| Punter (1982) | Landscape Quality | Landscape Perception | Landscape Interpretation |
| Zube et al. (1982) | Expert/ professional | Psychological | Experiential |

In expert based landscape assessment, 'experts' or trained observers identify and measure features and relationships among visible landscape elements that are assumed to contribute inherently to aesthetic quality. (Dakin, 2003)

In experimental approach, landscape is perceptual stimulus or source of visual information to which humans respond. Measured landscape features are physical (topography, vegetative cover, etc.), cognitive (mystery, naturalness, etc.). The assessment is via public rating rather than expert rating. (Dakin, 2003)

In experiential approach, identification of physical landscape features and observer ratings are in favour of clarifying and understanding landscape meaning. Experiential studies often focus on broad, intangible aspects of human- environmental interaction in addition to aesthetics, which itself is broadly interpreted. (Dakin, 2003)

The fuzzy logic approach to coastal scenic evaluation takes part in both sides of expert and experimental categories as it both involves professional/ expert and public perception participation in the methodology.

Ergin et al (2003) described briefly important techniques on scenic assessment: those pertaining to field based objective replication studies (Linton, 1968), statistical techniques obtained from site observations (Clamp, 1976), and assessing public attitudes and landscape preferences (Penning-Rowsell, 1989). Amongst the many models/rating schemes that have accrued in this field, most have been in existence for circa 30 years. Many authors/authorities have written about this topic, e.g. Sauer (1969), Lowenthal (1961), Appleton (1975), Carlson (1977), Briggs and France (1980), Buyoff and Arndt (1981), Williams (1986), Kaplan and Kaplan (1989), Eletheriadis et al (1990). Amongst the more important evaluations, in chronological order, have been the works of Fines (1968), Linton (1968, 1982), Leopold (1969), Robinson et al (1976), Penning-Rowsell (1982, 1989), the Countryside Commission (CC; 1993), Univ.of Ulser (1996), SCU (1997), the Countryside Council for Wales (CCW; 1996, 2001), DEFRA (2001), CA/SNR (2002), and GCDLVA (2003).

Clamp, P (1975) developed two indices; one for landscape planning, other one particularly for routing of new roads through rural areas. First index was based on assessments by 272 respondents of the attractiveness of 170 landscapes, presented as panoramas of colour transparencies. The second one was derived from assessments by 112 respondents of 63 landscapes, with and without simulated roads.

The Scenic Beauty Estimation or SBE method (Daniel & Boster, 1976) was based on classical psychological methods, especially the scaling methods developed by the scaling models developed by L. L. Thustone (1948).

Roswell (1981) carried out a survey of attitudes to landscape quality for 540 residents of Dacorum District, Hertfordshire, England. A single semantic differential rating scale is shown to capture the public's apparently firm and rational attitudes to landscape quality.

Eleftheriadis (1990) compared the visual preferences for coastal landscape of forest in Greece, represented in photographs, expressed by various nationality groups. The findings show that there is an agreement over the basic preference, but nevertheless, there are differences of opinion between the nationality groups that might be attributed to cultural influences and the effect of being familiar with their own environments.

Bell (1999) described Stephen Kaplan's work as below:

Stephen Kaplan has worked in the field for many years and has shown that cognitive features common to nearly all highly rated landscapes can be summarized as:

Coherence: the ability to see and comprehend the pattern inherent in a scene (the opposite of chaos)

Complexity: the range of different elements in an object or scene which provides sensory stimulation

Mystery: the aspects of a scene that cannot be comprehended all at once.

The LANDMAP Information System of Country Council for Wales (1st edition, 2001) is a geographical information system (GIS) that records, and makes available information about landscape qualities into a four level nationality consistent data set. LANDMAP Wales is the system devised and managed for the Welch landscape. The data set consists of contextual layers (landscape form, landscape function), GIS layers of core information (earth science, biodiversity, visual & sensory, history & archaeology, cultural), public perception (top bottom information, bottom up information).

Ergin, Williams and Micallef (2003) developed an innovative coastal scenic evaluation methodology using fuzzy logic approach which is also the basis of the methodology in this thesis. The methodology consisted of scoring of coastal parameters by expert/ trained group with utilizing public surveys to determine the weights of the coastal parameters.

**2.2. Coastal Scenic Evaluation Methodology**

Features concerning coastal scenery were identified to define a general coastal area by some quantifiable and unquantifiable parameters by a three – year study including literature survey, questionnaires with beach users in Turkey and UK, consultation with landscape experts. Twenty six parameters were grouped in two factor sets as 18 physical parameters and 8 human parameters; 26 in total. (Ergin et al, 2003)

The coastal parameters and their attributes can be seen in Table 2. The attributes rank in a five scale from low (one) to high ranking (five). Definitions of the coastal parameters as well as their attributes were described in Appendix A. (Çakır, 2004)

The scenic assessment factor set F is expressed as

F = (Physical, Human) = (P, H)

## Table 2.Coastal Scenic Evaluation System

Site Name :

| No: | Physical Parameters | | RATING 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| 1 | CLIFF | Height | Absent | >5 -<30m | 30 - <60m | 61 - 90m | >90m |
| 2 | | Slope | 45° - 55 ° | 55° - 65° | 65° - 75° | 75° - 85° | Circa Vertical |
| 3 | | Special Features* | Absent | 1 | 2 | 3 | Many >3 |
| 4 | BEACH FACE | Type | Absent | Mud | Cobble / Boulder | Pebble / Gravel (±Sand) | Sand |
| 5 | | Width | Absent | <5m - >100m | 5m - <25m | 25m - <50m | 50m-100m |
| 6 | | Colour | Absent | Dark | Dark Tan | Light Tan / Bleached | White/Gold |
| 7 | ROCKY SHORE | Slope | Absent | <5° | 5°-10° | 10°-20° | 20°-45° |
| 8 | | Extent | Absent | <5m | 5m-10m | 10m-20m | >20m |
| 9 | | Roughness | Absent | Distinctly Jagged | Deeply Pitted and/or Irregular (uneven) | Shallow Pitted | Smooth |
| 10 | DUNES | | Absent | Remnants | Fore-dune | Secondary Ridge | Several |
| 11 | VALLEY | | Absent | Dry Valley | (<1m) Stream | (1m-4m) Stream | River / Limestone gorge |
| 12 | SKYLINE LANDFORM | | Not Visible | Flat | Undulating | Highly Undulating | Mountainous |
| 13 | TIDES | | Macro (>4m) | | Meso (2m-4m) | | Micro (<2m) |
| 14 | COASTAL LANDSCAPE FEATURES ** | | None | 1 | 2 | 3 | >3 |
| 15 | VISTAS | | Open on one side | Open on two sides | | Open on three sides | Open on four sides |
| 16 | WATER COLOUR & CLARITY | | Muddy Brown / Grey | Milky Blue / Green; Opaque | Green / Grey Blue | Clear Blue / Dark blue | Very Clear Turquoise |
| 17 | NATURAL VEGETATION COVER | | Bare (< 10% vegetation only) | Scrub / Garigue (marram/gorse, bramble, etc)) | Wetlands / Meadow | Coppices, Maquis (±Mature Trees) | Variety of Mature Trees / Mature Natural Cover |
| 18 | VEGETATION DEBRIS | | Continuous >50cm high | Full Strand Line | Single Accumulation | Few Scattered Items | None |
| | **Human Parameters** | | 1 | 2 | 3 | 4 | 5 |
| 19 | NOISE DISTURBANCE | | Intolerable | Tolerable | | Little | None |
| 20 | LITTER | | Continuous Accumulations | Full Strand Line | Single Accumulation | Few Scattered Items | Virtually Absent |
| 21 | SEWAGE DISCHARGE EVIDENCE | | Sewage Evidence | | Some Evidence (1-3 items) | | No Evidence of Sewage |
| 22 | NON-BUILT ENVIRONMENT | | None | | Hedgerow / Terracing / Monoculture | | Field Mixed Cultivation ± Trees / Natural |
| 23 | BUILT ENVIRONMENT*** | | Heavy Industry | Heavy Tourism and/or Urban | Light Tourism and/or Urban and/or Sensitive Industry | Sensitive Tourism and/or Urban | Historic and/or None |
| 24 | ACCESS TYPE | | No Buffer Zone / Heavy Traffic | No Buffer Zone / Light Traffic | | Parking Lot Visible From Coastal Area | Parking Lot Not Visible From Coastal Area |
| 25 | SKYLINE | | Very Unattractive | Unattractive | Sensitively Designed High / Low | Very Sensitively Designed | Natural / Historic Features |
| 26 | UTILITIES **** | | >3 | 3 | 2 | 1 | None |

* Cliff Special Features: Indentation, banding, folding, screes, irregular profile

** Coastal Landscape Features: Peninsulas, rock ridges, irregular headlands, arches, windows, caves, waterfalls, deltas, lagoons, islands, stacks, estuaries, reefs, fauna, embayment, tombola, etc.

***Built Environment: Caravans will come under Tourism, Grading 2: Large intensive caravan site, Grading 3: Light, but still intensive caravan sites, Grading 4: Sensitively designed caravan sites.

**** Utilities: Power lines, pipelines, street lamps, groins, seawalls, revetments

Subsets of P and H are formed from the following listed characteristics as

P = (cliff, beach face, rocky shore platform, dunes, valley & river mouth, land form, tides, coastal landscape features, vistas of far places, water colour and clarity, natural vegetation cover, vegetation debris)

H = (noise, litter, sewage, non built environment, built environment, access type, skyline, utilities)

In P, cliff, beach face and rock shore platform characteristics are further formed from sub- characteristics or elements and for simplicity of notation, P is expressed as;

$P = (P_{1,}\ P_2 , P_{3,}\ P_{other} )$

Where:

- $P_1$ = (height, slope, special features) refers to cliff
- $P_2$ = (type, width, colour) refers to beach
- $P_3$ = (Slope, extent, roughness) refers to rocky shore
- $P_{other}$ = (the rest of the P file) refers to the remaining physical parameters

For a site to be assessed by site visits, attributes for each parameter shown in Table 2 are determined by an expert or trained person/ group usually in a 100 –200 m range along the coast for one or a few days at most. Thus, it is more like to determine the actual state of the coast according to attributes than scoring. As an example, dunes parameter has five attributes as absent, remnants, fore dune, secondary ridge and several ridges from 1 to 5 rating respectively. That is; a coastal area with only one ridge dune (fore dune) would be scored as 3.

Although some of the parameters can be measured (such as rocky shore extent, cliff height etc), the others are subject to the expert’s view of the coastal area (such as water colour, built environment). However, the scoring of all parameters was done by visual perception of the observer where biases and preferences of the expert, instantaneous events occurring in the area during scoring may be effective.

The scores of attributes for a particular site are illustrated in scenic evaluation score histograms by plotting parameters in x axis and corresponding scores on the y axis. The physical and human parameters are grouped into two sub groups. Scenic evaluation score histogram for Dingli Cliffs, Malta is shown in Figure 1.

### 2.2.1 Perception Studies

All parameters cannot have the same weight comparing to each other as some parameters may certainly be more important than the others. For example, cliff slope was expected to have a less weight than absence of noise parameter. Public perception surveys were carried out in Turkey, UK, Malta, and Croatia to determine the weights of parameters.  Public survey inquiry form used can be seen in Table 3.1 and Table 3.2.

This thesis was part of an on-going British Council Project carried out for three years. The project leaders were from Turkey, UK and Malta. Croatia was included later in the public survey inquiries as a part of the project. The evaluations of sites in countries other than Turkey, UK and Malta were determined by the same expert group as site visits.

The public surveys were carried out by face to face interview by project members. Each respondent were asked to check their importance rating on a five scale for each parameter. Rating one means very unimportant and rating five means very important.

The total number of respondents in public perception surveys in Turkey, UK, Malta and Croatia with the previous study (Ergin et al, 2003) was 485 in total. The total number of ticks for attributes of each parameter can be seen in Table 4. Table 4 was also used in calculation of the weights of the 29 coastal scenic parameters.

A detailed perception study was discussed in Chapter 3. In this section, only methodological contributions of the surveys will be described in the methodology.

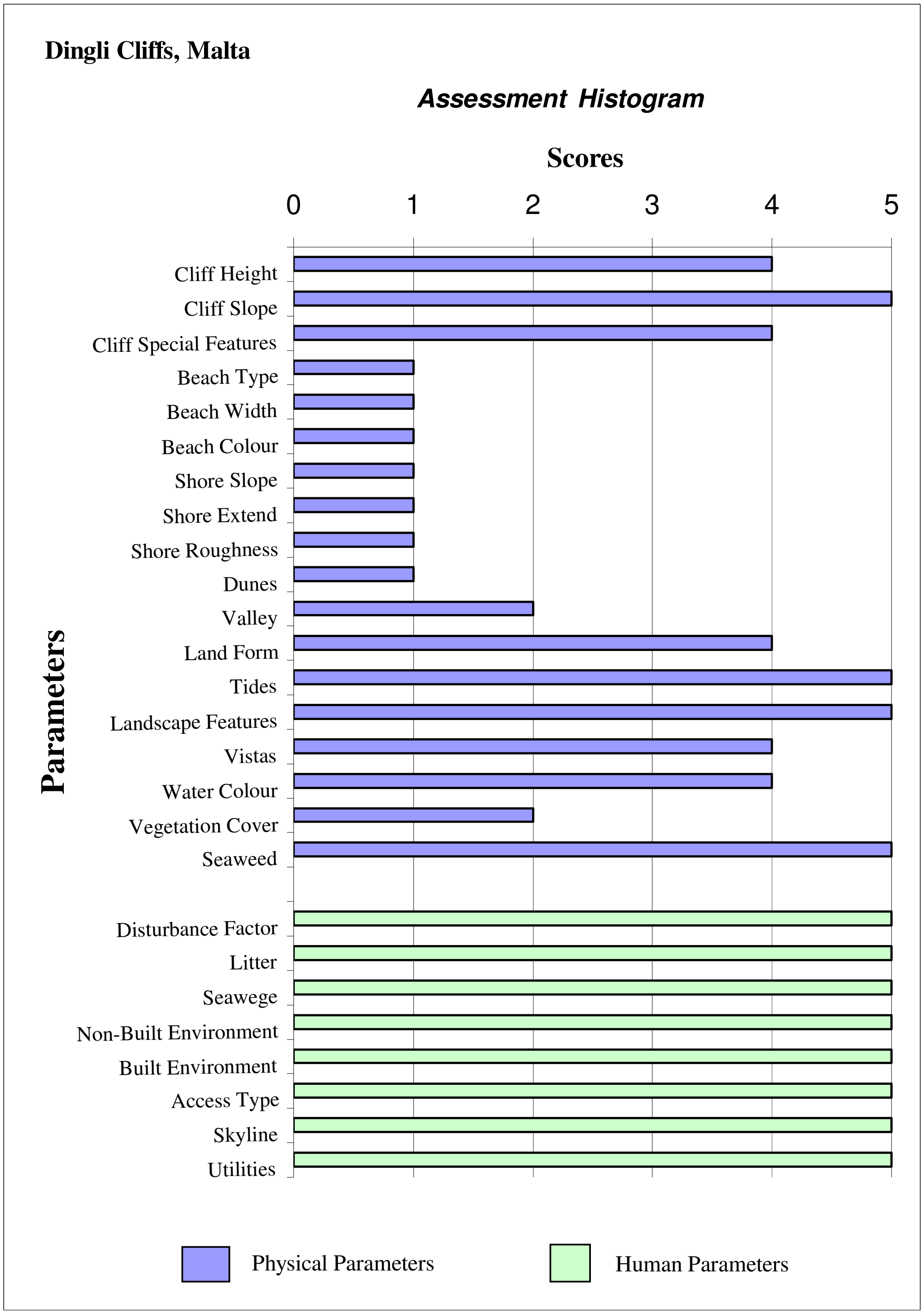


Figure 1- Assessment Histogram for Dingli Cliffs, Malta

Table 3.1- First page of public perception inquiry form

Site of The Inquiry: .............................

Date of the Inquiry: .............................

**COASTAL AREA EVALUATION INQUIRY**

1. Age : 1.1 ( ) 18- 29 1.2. ( ) 30-44 1. 3. ( ) 45- 64 1. 4. ( ) 65-

2. Sex: 2.1. ( ) Female 2.2.( ) Male

3. 3.1.( ) Local

   3.2. ( ) Native tourist City .......... (Please specify)

   3.3. ( ) Foreign tourist Country ........... (Plase specify)

4. Education: 4.1. ( ) Higher Education

   4.2. ( ) A degree below higher education

5. Occupation: 5.1. ( ) Retired

   5.2. ( ) Employed

   5.3. ( ) Student

   5.4. ( ) Unemployed

6. Has economical considerations specifically affected your decision to choose this coastal area ?

   6.1.( ) Yes 6.2. ( ) No

7. Where do you prefer to go in your vacations?

   7.1. ( ) Forest / Mountains

   7.2. ( ) Coastal Areas

   7.3. ( ) Relatives/ Friends

   7.4. ( ) Other ............... (Please specify)

8. What do you prefer to do in your vacations?

   8.1. ( ) Crowded entertainments such as discos

   8.2. ( ) Swimming

   8.3. ( ) Local visits

   8.4. ( ) Other .............................. (Please specify)

Not: Table 3.1 and Table 3.2 were also utilized in statistical analysis, where each attribute in a question such as age category, sex etc. were numbered so that each number refers to one attribute in statistical analysis.

Table 3.2- Second page of public perception inquiry form

<table>
<tr><th colspan="4" rowspan="2">Parameters</th><th colspan="5">Importance</th><th rowspan="2">Top Five</th></tr>
<tr><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th></tr>
<tr><td>1</td><td rowspan="3">Cliff</td><td colspan="2">Height</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>2</td><td colspan="2">Slope</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>3</td><td colspan="2">Special Features (Indentation, Bending, Folding)</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>4</td><td rowspan="5">Beach Face</td><td rowspan="3">Type</td><td>Sand</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>5</td><td>Pebble / Gravel</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>6</td><td>Rocky</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>7</td><td colspan="2">Width</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>8</td><td colspan="2">Colour</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>9</td><td rowspan="3">Rocky Shore Platform</td><td colspan="2">Slope</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>10</td><td colspan="2">Extent</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>11</td><td colspan="2">Roughness</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>12</td><td colspan="3">Sand Dunes</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>13</td><td colspan="3">Valley and River Mouth</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>14</td><td rowspan="3">Landform</td><td colspan="2">Flat</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>15</td><td colspan="2">Undulating</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>16</td><td colspan="2">Mountainous</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>17</td><td colspan="3">Tides</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>18</td><td colspan="3">Coastal Landscape Features (Caves, Waterfalls, Islands, Rocks…)</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>19</td><td colspan="3">Vistas of Far Places</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>20</td><td colspan="3">Historical Features (Castles, Towers, Historical Remains...)</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>21</td><td colspan="3">Water Colour and Clarity</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>22</td><td colspan="3">Seaweed Banquets</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>23</td><td colspan="3">Biotype Diversity (Fauna)</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>24</td><td colspan="3">Natural Vegetation Cover (Flora)</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>25</td><td colspan="3">Absence of Noise</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>26</td><td colspan="3">Absence of Sewage and Litter</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>27</td><td colspan="3">Land use(Monoculture, Many Crops...)</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>28</td><td colspan="3">Absence of Buildings and Utilities (Power lines…), Natural View of the Skyline</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>29</td><td colspan="3">Ease of Access</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

Table 4- Overall Questionnaire Results for Turkey, UK, Malta, Croatia

| Çıralı, Turkey (2004)+Croatia +Malta +Southern down (UK) + Previous Study(BCR2003) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Number Of People Contributed To The Inquiry is 485 | | | | | | | | | | |
| **Parameters** | | | | **Importance** | | | | | **Top Five** |
| | | | | 1 | 2 | 3 | 4 | 5 | |
| 1 | Cliff | Height | | 63 | 71 | 160 | 114 | 77 | 22 |
| 2 | | Slope | | 77 | 102 | 159 | 82 | 65 | 10 |
| 3 | | Special Features (Indentation, Bending, Folding) | | 58 | 72 | 119 | 99 | 137 | 23 |
| 4 | Beach Face | Type | Sand | 44 | 39 | 72 | 101 | 229 | 136 |
| 5 | | | Pebble / Gravel | 104 | 99 | 141 | 91 | 50 | 28 |
| 6 | | | Rocky | 160 | 80 | 120 | 73 | 52 | 17 |
| 7 | | Width | | 40 | 46 | 110 | 143 | 146 | 39 |
| 8 | | Colour | | 56 | 69 | 130 | 119 | 111 | 13 |
| 9 | Rocky Shore Platform | Slope | | 80 | 120 | 154 | 86 | 45 | 4 |
| 10 | | Extent | | 69 | 115 | 155 | 89 | 57 | 10 |
| 11 | | Roughness | | 66 | 88 | 121 | 102 | 108 | 27 |
| 12 | Sand Dunes | | | 111 | 103 | 119 | 86 | 66 | 11 |
| 13 | Valley and River Mouth | | | 65 | 54 | 92 | 146 | 128 | 31 |
| 14 | Landform | Flat | | 110 | 99 | 120 | 97 | 59 | 25 |
| 15 | | Undulating | | 72 | 81 | 168 | 122 | 42 | 10 |
| 16 | | Mountainous | | 59 | 59 | 89 | 106 | 172 | 52 |
| 17 | Tides | | | 121 | 96 | 140 | 64 | 64 | 18 |
| 18 | Coastal Landscape Features (Caves, Waterfalls, Islands, Rocks…) | | | 10 | 14 | 53 | 120 | 288 | 162 |
| 19 | Vistas of Far Places | | | 22 | 33 | 117 | 142 | 171 | 41 |
| 20 | Historical Features (Castles, Towers, Historical Remains...) | | | 17 | 33 | 74 | 123 | 238 | 127 |
| 21 | Water Colour and Clarity | | | 6 | 4 | 15 | 73 | 387 | 333 |
| 22 | Seaweed Banquets | | | 68 | 62 | 104 | 86 | 165 | 48 |
| 23 | Biotype Diversity (Fauna) | | | 32 | 27 | 87 | 116 | 223 | 102 |
| 24 | Natural Vegetation Cover (Flora) | | | 20 | 37 | 53 | 136 | 239 | 142 |
| 25 | Absence of Noise | | | 8 | 13 | 33 | 116 | 315 | 238 |
| 26 | Absence of Sewage and Litter | | | 7 | 4 | 17 | 38 | 419 | 371 |
| 27 | Land use(Monoculture, Many Crops...) | | | 67 | 65 | 141 | 108 | 104 | 40 |
| 28 | Absence of Buildings and Utilities (Power lines…), Natural View of the Skyline | | | 5 | 14 | 42 | 109 | 315 | 213 |
| 29 | Ease of Access | | | 39 | 53 | 82 | 106 | 205 | 105 |

Top five column in Table 3.2 demonstrates the top five parameters which respondent gives the most importance to. Although this column does not affect the methodology in any way, it can be used to as an easy tool to see the important parameters. In Table 4, the total number of ticks for top five column can also be seen for Turkey, UK, Malta and Croatia inquiries.

Table 5- Top five percentages for Turkey, Malta, UK and Croatia surveys

| Çıralı, Turkey (2004)+Croatia +Malta +Southern down (UK) + Previous Study(BCR2003) | | | | |
|---|---|---|---|---|
| Number Of People Contributed To The Inquiry is 485 | | | | |
| **Parameters** | | | | **Top Five** |
| 1 | Cliff | Height | | 0,9 % |
| 2 | | Slope | | 0,4 % |
| 3 | | Special Features | | 1.0 % |
| 4 | Beach Face | Type | Sand | 5.7 % |
| 5 | | | Pebble / Gravel | 1.2 % |
| 6 | | | Rocky | 0,7 %) |
| 7 | | Width | | 1.6 % |
| 8 | | Color | | 0,5 % |
| 9 | Rocky Shore Platform | Slope | | 0,2 % |
| 10 | | Extent | | 0,4 % |
| 11 | | Roughness | | 1.1 % |
| 12 | Sand Dunes | | | 0,5 % |
| 13 | Valley and River Mouth | | | 1.3 % |
| 14 | Landform | Flat | | 1.0 % |
| 15 | | Undulating | | 0,4 % |
| 16 | | Mountainous | | 2.2 % |
| 17 | Tides | | | 0,8 % |
| 18 | Coastal Landscape Features | | | 6.8 % |
| 19 | Vistas of Far Places | | | 1.7 % |
| 20 | Historical Features | | | 5.3 % |
| 21 | Water Color and Clarity | | | 13.9 % |
| 22 | Seaweed Banquets | | | 2.0 % |
| 23 | Biotype Diversity (Fauna) | | | 4.3 % |
| 24 | Natural Vegetation Cover (Flora) | | | 5.9 % |
| 25 | Absence of Noise | | | 9.9 % |
| 26 | Absence of Sewage and Litter | | | 15.5 % |
| 27 | Land use(Monoculture, Many Crops...) | | | 1.7 % |
| 28 | Absence of Buildings and Utilities (Power lines…), Natural | | | 8.9 % |
| 29 | Ease of Access | | | 4.4 % |

As seen in Table 5, among the 29 parameters, the following five parameters got the highest percentage for top five ranking:

1. Absence of Sewage and Litter
2. Water Colour and Clarity

3. Absence of Noise
4. Absence of Buildings and Utilities
5. Coastal Landscape Features

Which is also the case in Coastal Scenic Assessment at Selected Areas: Turkey, Malta and the United Kingdom, Final Report. (Ergin et al, 2003)

### 2.2.2 Fuzzy Logic Approach

Buyoff and others (1983) stressed "if landscape preferences are influenced by cultural and geographic characteristics, then generic metrics and models cannot be formulated." It is necessary to understand human values and aesthetics preference if we are to make any difference in the real landscape. (Nadenicek, 1997)

In fuzzy logic approach to coastal scenic evaluation, a generic model for coastal areas around the world, that amalgamate expert opinions and public preferences, was utilized. As the scoring of parameters were to be done by expert/ trained persons, the weights of the parameters were to be determined by public preference questionnaires.

Expert opinion data acquisition method is recognized to a great extent to be subject to uncertainty and involves bias. The uncertainty and bias are greatly affected by the way the collection process is conducted and by the group of experts invited to participate in the process. (Bilal, 1998)

The scoring process in fuzzy logic approach is subjective as site attributes were determined solely by experts' visual and sensational perception towards the coastal environment. Different experts participated in the same site evaluation may lead to some biases and differences in the evaluation; that is, one expert might score a parameter for a specific site different from another expert.

Fuzzy logic approach was used to overcome the uncertainties and subjectivity in the processes of parameter ratings. Fuzzy logic, provides a natural way of dealing with problems in which the source of imprecision is the absence of sharply defined criteria of class membership rather than the presence of random variables (Zadeh, 1965) and enables an expert group to quantify the uncertainties and subjectivities in most scientific studies (Ergin, 2004)

Weight of assessment parameters

F = (Physical, Human) = (P, H)

Weights of human and physical factors ($W_f$ & $W_h$) were determined to be 0.5 and 0.5 each. The membership grades of factors P and H were determined by experts. These experts include academic and professional people in landscape architecture, coastal engineering and other relevant disciplines as well as trained people in these relevant disciplines. These values also represent the membership grades of the factors P and H. These values reflect the importance of the factors in the overall evaluation, and will be represented as a row matrix for computational purposes as:

$W_f = (W_f, W_h) = (0.5, 0.5)$

In calculation of the weights of parameters, the following was applied:

1. The number of ticks for each parameter attributes in the public survey were counted. Only four and five attributes were taken into consideration in the calculation of overall weighted averages of parameters to promote higher preferences.

2. Each parameter had a significance grades $g_i$ that demonstrates the significance of the feature compared to the others in the category (physical or human). The cliff, beach & rocky shore platform each had three sub parameters. In order to give physical parameters the same significance, sub parameters had 1/36 significance grade and the other parameters in physical category have 1/ 12 significance grade. Likewise, human parameters eight in total had a significance grade of 1/ 8.

3. Weights of parameters were obtained by multiplying overall weighted averages with significance grades.

4. Weights of physical and human parameters were normalized separately. Normalized final weights of parameters ($W_H$) were used in the fuzzy logic application.

The calculation of weights of physical parameters as described above is illustrated in Table 6 for surveys in Turkey, UK, Malta and Croatia utilizing data from Table 5. In the same way, the calculation of weights of human parameters is illustrated in Table7.

Table 6- Weight Calculation Table for Physical Parameters

| Physical Parameters | | Number of Ticks ( From Table 2) | | Overall Weighted Average $\frac{4N_4 + 5N_5}{270}$ $w_i$ | Significance Grades for Parameters $g_i$ | $w_i$ x $g_i$ | Normalized Final Weights |
|---|---|---|---|---|---|---|---|
| No | Name | Box 4 $N_4$ | Box 5 $N_5$ | | | | |
| 1 | Cliff Height | 114 | 77 | 1,7340 | 1/36 | 0,0481 | 0,0186 |
| 2 | Cliff Slope | 82 | 65 | 1,3464 | 1/36 | 0,0374 | 0,0144 |
| 3 | Special features | 99 | 137 | 2,2289 | 1/36 | 0,0619 | 0,0239 |
| 4 | Beach Type | 101 | 229 | 3,1938 | 1/36 | 0,0887 | 0,0342 |
| 5 | Beach Width | 91 | 50 | 2,6845 | 1/36 | 0,0746 | 0,0287 |
| 6 | Beach Colour | 73 | 52 | 2,1258 | 1/36 | 0,05905 | 0,0227 |
| 7 | Rocky Shore | 143 | 146 | 1,1732 | 1/36 | 0,0326 | 0,0126 |
| 8 | Rocky Shore | 119 | 111 | 1,3216 | 1/36 | 0,0367 | 0,0141 |
| 9 | Rocky Shore | 86 | 45 | 1,9546 | 1/36 | 0,0543 | 0,0209 |
| 10 | Dunes | 89 | 57 | 1,3897 | 1/12 | 0,1158 | 0,0446 |
| 11 | Valley | 102 | 108 | 2,5237 | 1/12 | 0,2103 | 0,0810 |
| 12 | Landform | 86 | 66 | 2,6474 | 1/12 | 0,22067 | 0,0850 |
| 13 | Tides | 146 | 128 | 1,1876 | 1/12 | 0,099 | 0,0381 |
| 14 | Landscape | 97 | 59 | 3,9588 | 1/12 | 0,3299 | 0,1271 |
| 15 | Vistas | 122 | 42 | 2,9340 | 1/12 | 0,2445 | 0,0942 |
| 16 | Water Colour | 106 | 172 | 4,5918 | 1/12 | 0,3827 | 0,1474 |
| 17 | Vegetation Cover | 64 | 64 | 3,5856 | 1/12 | 0,2988 | 0,1151 |
| 18 | Seaweed | 120 | 288 | 2,4103 | 1/12 | 0,2009 | 0,0774 |
| | | | | Total | 1 | 2.5958 | 1.000 |

Table 7- Weight Calculation Table for Human Parameters

| Human Parameters | | Number of Ticks ( From Table 2) | | Overall Weighted Average $\frac{4N_4 + 5N_5}{270}$ $w_i$ | Significance Grades for Parameters $g_i$ | $w_i \times g_i$ | Normalized Final Weights of Parameters $w_H$ |
|---|---|---|---|---|---|---|---|
| No | Name | Box 4 $N_4$ | Box 5 $N_5$ | | | | |
| 19 | Disturbance Factor | 116 | 315 | 4,2041 | 1/8 | 0,525 | 0,1362 |
| 20 | Litter | 38 | 419 | 4,6330 | 1/8 | 0,579 | 0,1501 |
| 21 | Sewage | 38 | 419 | 4,6330 | 1/8 | 0,579 | 0,1501 |
| 22 | Non-Built Environment | 108 | 104 | 1,9629 | 1/8 | 0,245 4 | 0,0636 |
| 23 | Built Environment | 109 | 315 | 4,1464 | 1/8 | 0,518 | 0,1344 |
| 24 | Access Type | 106 | 205 | 2,9876 | 1/8 | 0,373 | 0,0968 |
| 25 | Skyline | 109 | 315 | 4,1464 | 1/8 | 0,518 | 0,1344 |
| 26 | Utilities | 109 | 315 | 4,1464 | 1/8 | 0,518 | 0,1344 |
| | | | | Total | 1 | 3,8575 | 1,000 |

### 2.2.3 Matrices

The 29 parameters were considered within its category (physical and human) and weights of these parameters were normalized accordingly. The fuzzy logic is applied as follows:

i. For each 29 parameter, an 1x5 input matrix is developed, each column corresponding attributes 1- 5. The value is 1 for the attribute scored for the parameter and 0 for the other attributes.

The score for landform attribute is 4 for Dingli Cliffs, Malta. The input matrix for the parameter is:

$D_{12} = (0\ \ 0\ \ 0\ \ 1\ \ 0)$

ii. Each parameter has a membership grading matrix general for all coastal areas. The membership grading matrix abates the Boolean logic in the input matrices and reverberates the fuzziness in the methodology. The membership grading matrices were developed considering the degree of error a scoring observer may cause due to subjectivity and bias in the assessment process. The following membership grading matrix $M_{12}$ for landform is an example:

$$
\begin{array}{cc}
 & \begin{array}{ccccc} 1 & 2 & 3 & 4 & 5 \end{array} \\
M_{12} = \begin{array}{c} 1 \\ 2 \\ 3 \\ 4 \\ 5 \end{array} & \begin{bmatrix} 1 & 0.2 & 0 & 0 & 0 \\ 0 & 1 & 0.3 & 0 & 0 \\ 0 & 0.6 & 1 & 0.6 & 0 \\ 0 & 0 & 0.6 & 1 & 0.2 \\ 0 & 0 & 0 & 0.2 & 1.0 \end{bmatrix}
\end{array}
$$

Each row in the matrix corresponds to attribute scores from 1 to 5 respectively. If Boolean logic was used, the matrix would be identity matrix. However, a 100 % score for a specific attribute may take some parts from lower and upper attributes to some degrees. For example; when landform attribute is scored as 3 for Dingli Cliffs, Malta, it is scored as 100 % as 3, 60 % as 2 and % 60 as 4. This may be considered as an error modification.

The membership degrees were determined by the expert group. The membership grading matrices can be seen in Appendix- B. The parameters and interval attributes which are more difficult to judge and distinguish from others have more membership degrees in adjacent attributes.

iii. The fuzzy assessment matrix was obtained by multiplying input matrices with corresponding membership grading matrix of the parameter:

$\mathbf{A}_{P,j} = \mathbf{D}_j \quad \mathbf{M}_j$ (j = 1 to 18) and, $\mathbf{A}_{H,j} = \mathbf{D}_j \quad \mathbf{M}_j$ (j = 19 to 26)

Where: $\mathbf{A}_{P,j}$ and $\mathbf{A}_{H,j}$ are the j'th rows of the fuzzy assessment matrices for the physical and human factors, respectively.

Human and physical fuzzy assessment matrices (Ap, Ah) for Dingli Cliffs can be seen in Table 8.

iv. Fuzzy weighted average matrix elements for subset physical and human are obtained by multiplying weight of parameters with fuzzy assessment matrix and summing the columns resulting in a one row matrix;

$\mathbf{K}_P = \mathbf{W}_P \ \mathbf{A}_P$ and $\mathbf{K}_H = \mathbf{W}_H \ \mathbf{A}_H$

Fuzzy weighted averages of attributes for human and physical sub sections are demonstrated in weighted averages histogram. Weighted averages histogram for Dingli Cliffs, Malta can be seen in Figure 2.

v. Final assessment matrix (membership degree), R is obtained by multiplying K with Wf.

$\mathbf{R} = \mathbf{W}_F \ \mathbf{K}$

For Dingli Cliffs, Malta

$$R = Wf\ K = (0.5 \quad 0.5) \begin{pmatrix} 0.201 & 0.196 & 0.157 & 0.403 & 0.348 \\ 0.00 & 0.00 & 0.043 & 0.104 & 1.000 \end{pmatrix}.$$

$$= \begin{pmatrix} 0.100 & 0.098 & 0.100 & 0.253 & 0.674 \end{pmatrix}$$

Membership degrees are final assessment matrix R of attributes (from 1 to 5) for a specific site. The membership degree of attributes for a particular site can be plotted in attributes vs. membership degree graph. Membership degree for Dingli Cliffs, Malta can be seen in Figure 3.

## Table 8- Fuzzy Assessment Matrices for Dingli Cliffs, Malta

| No C1 | Assessment Parameters<br>Physical C2 | Weights of Parameters, $W_P$<br>C3 | Graded Attributes<br>C4 | Input Matrices $D_J$ C5 to C9 | | | | | A Matrices | Fuzzy Assessment Matrix<br>Attributes C10 to C14<br>1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Cliff Height (1-1) | 0,0186 | 4 | 0 | 0 | 0 | 1 | 0 | $A_P$ | 0,0 | 0,0 | 0,5 | 1,0 | 0,5 |
| 2 | Cliff Slope (1-2) | 0,0144 | 5 | 0 | 0 | 0 | 0 | 1 | | 0,0 | 0,0 | 0,0 | 0,5 | 1,0 |
| 3 | Special Features (1-3) | 0,0239 | 4 | 0 | 0 | 0 | 1 | 0 | | 0,0 | 0,0 | 0,0 | 1,0 | 0,3 |
| 4 | Beach Type (2-1) | 0,0342 | 1 | 1 | 0 | 0 | 0 | 0 | | 1,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 5 | Beach Width (2-2) | 0,0287 | 1 | 1 | 0 | 0 | 0 | 0 | | 1,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 6 | Beach Colour (2-3) | 0,0227 | 1 | 1 | 0 | 0 | 0 | 0 | | 1,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 7 | Rock. Shore Slope (3-1) | 0,0126 | 1 | 1 | 0 | 0 | 0 | 0 | | 1,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 8 | Rock. Shore Extent (3-2) | 0,0141 | 1 | 1 | 0 | 0 | 0 | 0 | | 1,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 9 | Rock. Shore Rough. (3-3) | 0,0209 | 1 | 1 | 0 | 0 | 0 | 0 | | 1,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 10 | Dunes (4) | 0,0446 | 1 | 1 | 0 | 0 | 0 | 0 | | 1,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 11 | Valley (5) | 0,0810 | 2 | 0 | 1 | 0 | 0 | 0 | | 0,0 | 1,0 | 0,0 | 0,0 | 0,0 |
| 12 | Landform (6) | 0,0850 | 4 | 0 | 0 | 0 | 1 | 0 | | 0,0 | 0,0 | 0,6 | 1,0 | 0,2 |
| 13 | Tides (7) | 0,0381 | 5 | 0 | 0 | 0 | 0 | 1 | | 0,0 | 0,0 | 0,0 | 0,0 | 1,0 |
| 14 | Landscape Features (8) | 0,1271 | 5 | 0 | 0 | 0 | 0 | 1 | | 0,0 | 0,0 | 0,0 | 0,0 | 1,0 |
| 15 | Vistas (9) | 0,0942 | 4 | 0 | 0 | 0 | 1 | 0 | | 0,0 | 0,0 | 0,0 | 1,0 | 0,3 |
| 16 | Water Colour (10) | 0,1474 | 4 | 0 | 0 | 0 | 1 | 0 | | 0,0 | 0,0 | 0,5 | 1,0 | 0,2 |
| 17 | Vegetation Cover (11) | 0,1151 | 2 | 0 | 1 | 0 | 0 | 0 | | 0,2 | 1,0 | 0,2 | 0,1 | 0,0 |
| 18 | Seaweed (12) | 0,0774 | 5 | 0 | 0 | 0 | 0 | 1 | | 0,0 | 0,0 | 0,0 | 0,2 | 1,0 |
| ***FUZZY WEIGHTED AVERAGE MATRIX ELEMENTS FOR SUBSET PHYSICAL*** ( $K_P = W_P A_P$ ) | | | | | | | | | | 0,201 | 0,196 | 0,157 | 0,403 | 0,348 |
| **Human** $W_H$ | | | | | | | | | | | | | | |
| 19 | Disturbance Factor (1) | 0,1362 | 5 | 0 | 0 | 0 | 0 | 1 | $A_H$ | 0,0 | 0,0 | 0,0 | 0,2 | 1,0 |
| 20 | Litter (2) | 0,1501 | 5 | 0 | 0 | 0 | 0 | 1 | | 0,0 | 0,0 | 0,0 | 0,2 | 1,0 |
| 21 | Sewage (3) | 0,1501 | 5 | 0 | 0 | 0 | 0 | 1 | | 0,0 | 0,0 | 0,2 | 0,0 | 1,0 |
| 22 | Non—built Env. (4) | 0,0636 | 5 | 0 | 0 | 0 | 0 | 1 | | 0,0 | 0,0 | 0,2 | 0,0 | 1,0 |
| 23 | Built Env. (5) | 0,1344 | 5 | 0 | 0 | 0 | 0 | 1 | | 0,0 | 0,0 | 0,0 | 0,0 | 1,0 |
| 24 | Access Type (6) | 0,0968 | 5 | 0 | 0 | 0 | 0 | 1 | | 0,0 | 0,0 | 0,0 | 0,2 | 1,0 |
| 25 | Skyline (7) | 0,1344 | 5 | 0 | 0 | 0 | 0 | 1 | | 0,0 | 0,0 | 0,0 | 0,0 | 1,0 |
| 26 | Utilities (8) | 0,1344 | 5 | 0 | 0 | 0 | 0 | 1 | | 0,0 | 0,0 | 0,0 | 0,2 | 1,0 |
| ***FUZZY WEIGHTED AVERAGE MATRIX ELEMENTS FOR SUBSET HUMAN*** ( $K_H = W_H A_H$ ) | | | | | | | | | | 0,00 | 0,00 | 0,043 | 0,104 | 1,000 |

Final Assessment Matrix (Membership Degree), R

$$R = W_F\ K = \begin{pmatrix} 0.5 & 0.5 \end{pmatrix} \begin{bmatrix} 0.201 & 0.196 & 0.157 & 0.403 & 0.348 \\ 0.000 & 0.000 & 0.043 & 0.104 & 1.000 \end{bmatrix} = (0.100\ \ 0.098\ \ 0.100\ \ 0.253\ \ 0.674)$$

**Evaluation Index (D) = 0.96**

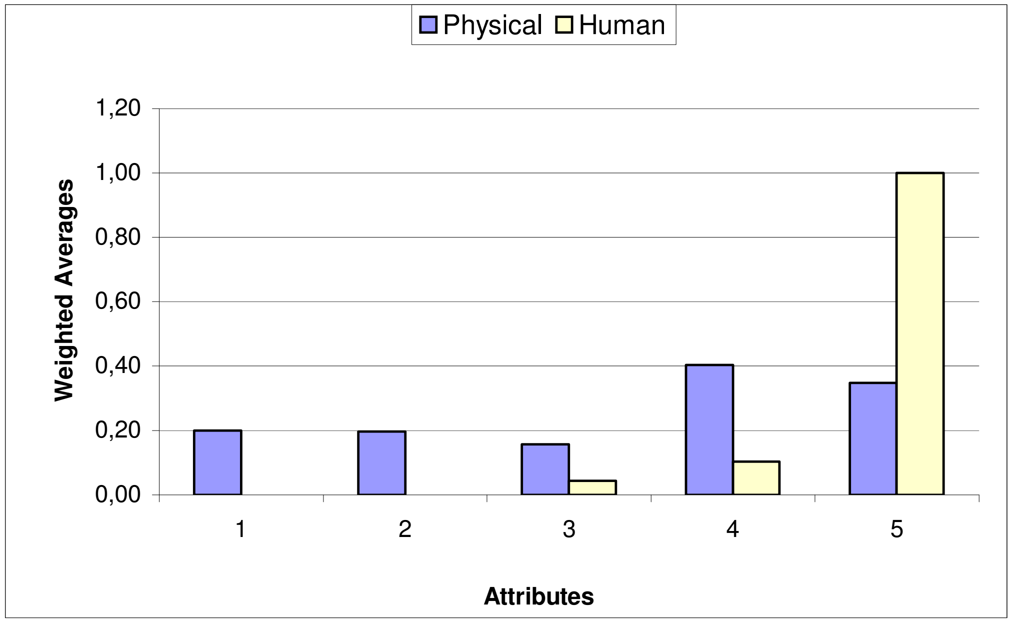


Figure 2. Weighted Averages Histogram, Dingli Cliffs, Malta

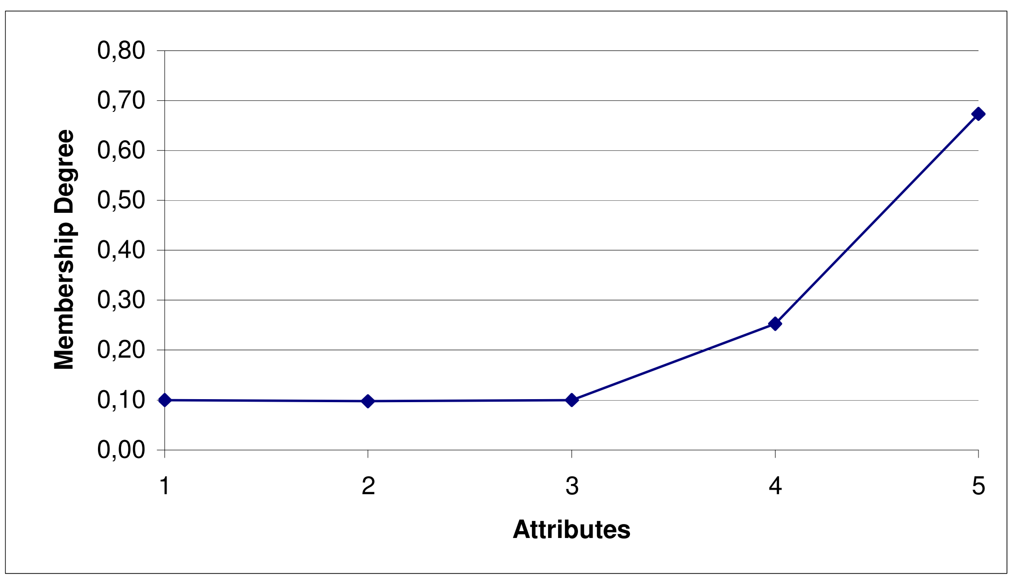


Figure 3. Membership Degree Curve, Dingli Cliffs, Malta

### 2.2.4 Data interpretation

The Attribute values ranging from 1 to 5 signify the rating value of the scenic assessment. As visually seen in weighted averages vs. attributes histograms, high weighted average on attributes (e.g. Attributes 4 or 5) reflects a high scenic assessment (high rating) value. Conversely, a high weighted average value on attributes (e.g. Attributes 1 or 2 ) reflects a low scenic (low rating) value.

In Figure 2, Weighted Averages Histogram for Dingli Cliffs, Malta, for physical parameters it gets the highest value for attribute four and for human parameters it gets the highest value for attribute five. This might be interpreted as for human parameters it might be scored as class five and for physical parameters it might be scored as four.

The graphs of membership degrees for a site give the overall results of the scenic assessment over the attributes. Interpretations of these graphs may be based on the skew of the curve where a curve skew to RHS reflects high scenic assessment value and conversely a curve skew to LHS reflects a low quality assessment value.

Membership degree curve of Dingli Cliffs, Malta in Figure 3 skews to the right; that is, it shall get high scenic assessment value.

### 2.2.5 Classification of Sites

A decision parameter computation was agreed upon from several scenarios considering membership degree versus attributes curves and formulation of Evaluation Index (D) and was given as (Ergin et al, 2003):

$$D= \frac{(-2\times A_{12})+(-1\times A_{23})+(1\times A_{34})+(2\times A_{45})}{A_T}.$$

where the area under the curve between the attributes i and j is named $A_{ij}$ with: i =1, 2, 3, 4 and j = 2, 3, 4, 5. The total area under the curve is $A_T$.

For D $A_{12}+A_{23}+A_{34}+A_{45} = A_T \Rightarrow$

$$2 \geq \frac{(-2\times A_{12})+(-1\times A_{23})+(1\times A_{34})+(2\times A_{45})}{A_T} \geq -2$$

The higher the D value – the better the scenic value

Evaluation index (D) values for 86 sites from several countries can be seen in Table 9 considering the public perception surveys from Turkey, UK, Malta and Croatia.

The graph of D values vs. sites were also drawn as Coastal Scenic Classification Curve in Figure 4 which enabled the grouping of sites in different classes as; (Ergin et al)

CLASS 1: Top Natural; extremely attractive with very high landscape value sites having D value above 0.85

CLASS 2: Natural; Attractive with high landscape value sites, having D value between 0.65 and 0.85

CLASS 3: Natural, average sites with medium landscape values having D value between 0.4 and 0.65 (with the exception of Tenby South, which is an urban site with exceptional scenic characteristics.)

CLASS 4: Mainly urban, poor with medium landscape value and light development sites, having D vale between 0 and 0.4

CLASS 5: Urban, poor with low landscape value and intensive development sites having D values below 0

Table 9- D values of 86 coastal sites considering perception surveys from Turkey, Malta, Croatia, UK

| No | Site | D value | No | Site | D value |
|---|---|---|---|---|---|
| **1** | Long reef, New Zealand | 1,39 | **44** | Seamans Bridge, UK | 0,35 |
| **2** | Çıralı Midsection, Turkey | 1,31 | **45** | Mygar Ixxini, Malta | 0,33 |
| **3** | Irohzaki Lighthouse, Japan | 1,3 | **46** | Wisemans Bridge | 0,33 |
| **4** | Karekare, New Zealand | 1,29 | **47** | Broadhaven, UK | 0,33 |
| **5** | Çıralı Karaburun, Turkey | 1,26 | **48** | Angle, UK | 0,32 |
| **6** | Sumner, New Zealand | 1,16 | **49** | Alata West, Mersin, Turkey | 0,31 |
| **7** | Ebisu Beach, Japan | 1,12 | **50** | Magellan Foreland, Ireland | 0,29 |
| **8** | Sagg Main, USA | 1,1 | **51** | Alata Mid section, Mersin, Turkey | 0,29 |
| **9** | Phasalis Small Bay, Turkey | 1,08 | **52** | Burren Area, Ireland | 0,27 |
| **10** | Litlle Haven, UK | 0,99 | **53** | Bondi, New Zealand | 0,27 |
| **11** | Piha, New Zealand | 0,96 | **54** | Tenby N, UK | 0,26 |
| **12** | Tisan Back Bay Mersin, Turkey | 0,93 | **55** | Xlendi Bay, Malta | 0,21 |
| **13** | Taylors Mistake, New Zealand | 0,91 | **56** | Antalya Old Harbour, Turkey | 0,19 |
| **14** | Phasalis Large Bay, Turkey | 0,91 | **57** | Alki Beach, USA | 0,19 |
| **15** | Poppit, UK | 0,91 | **58** | Tekirova South, Turkey | 0,18 |
| **16** | Dunbeg, Ireland | 0,89 | **59** | Kercem Cliffs, Malta | 0,14 |
| **17** | Ryan's daughter area, Ireland | 0,86 | **60** | Saundersfoot, UK | 0,13 |
| **18** | Dee why, New Zealand | 0,86 | **61** | Ramla Bay, Malta | 0,12 |
| **19** | Giant Cause, Ireland | 0,81 | **62** | Saundersfoot- west, UK | 0,12 |
| **20** | Fungus Rock, Malta | 0,76 | **63** | White Towers, Malta | 0,11 |
| **21** | Mather Cliffs, Ireland | 0,75 | **64** | Kemer, Antalya | 0,11 |
| **22** | Tojo Beach, Japan | 0,74 | **65** | Konyaaltı West, Turkey | 0,1 |
| **23** | Nash, UK | 0,72 | **66** | Dingli Cliffs, Malta | 0,096 |
| **24** | Haven Beach, USA | 0,71 | **67** | Konyaaltı East, Turkey | 0,09 |
| **25** | Tisan Tample Mersin, Turkey | 0,68 | **68** | Alata East, Turkey | 0,07 |
| **26** | Whitesands, UK | 0,67 | **69** | Xwieni Point, Malta | 0,06 |
| **27** | Stgovans, UK | 0,67 | **70** | Manikata, Malta | 0,055 |
| **28** | Karaburun Akyar, Mersin, Turkey | 0,66 | **71** | Konyaaltı Middle, Turkey | 0,04 |
| **29** | Newgale, UK | 0,66 | **72** | Ogmore, UK | 0,03 |
| **30** | Austenmeer beach, Austria | 0,62 | **73** | llanwit, UK | 0,03 |
| **31** | Göksu Hurma, Mersin, Turkey | 0,6 | **74** | Porthcawl, UK | 0,02 |
| **32** | Tenby S, UK | 0,57 | **75** | Antalya Waterfalls, Turkey | -0,01 |
| **33** | Ghajn Tufieha, Malta | 0,56 | **76** | Amroth, UK | -0,1 |
| **34** | Magellan Foreland-tip, Ireland | 0,54 | **77** | Ghallis rocks coastline, Malta | -0,13 |
| **35** | Tekirova North, Turkey | 0,53 | **78** | Manley, New Zealand | -0,14 |
| **36** | Southerdown, UK | 0,52 | **79** | Antalya Lara barınak, Turkey | -0,15 |
| **37** | Montauk Point, USA | 0,49 | **80** | Antalya Dedeman Otel, Turkey | -0,22 |
| **38** | Shirahama Beach, Japan | 0,46 | **81** | Lara Beach, Turkey | -0,29 |
| **39** | Calipso Cave, Malta | 0,46 | **82** | Marsalforn Bay, Malta | -0,37 |
| **40** | Fresh water, UK | 0,45 | **83** | Bahar- IC Caghaq, Malta | -0,41 |
| **41** | Irita, Japan | 0,43 | **84** | Strangford, Ireland | -0,56 |
| **42** | Blue Lagoon, UK | 0,43 | **85** | Kızkalesi, Mersin, Turkey | -0,59 |
| **43** | Mellieha, Malta | 0,36 | **86** | St. George's Bay, Malta | -0,66 |

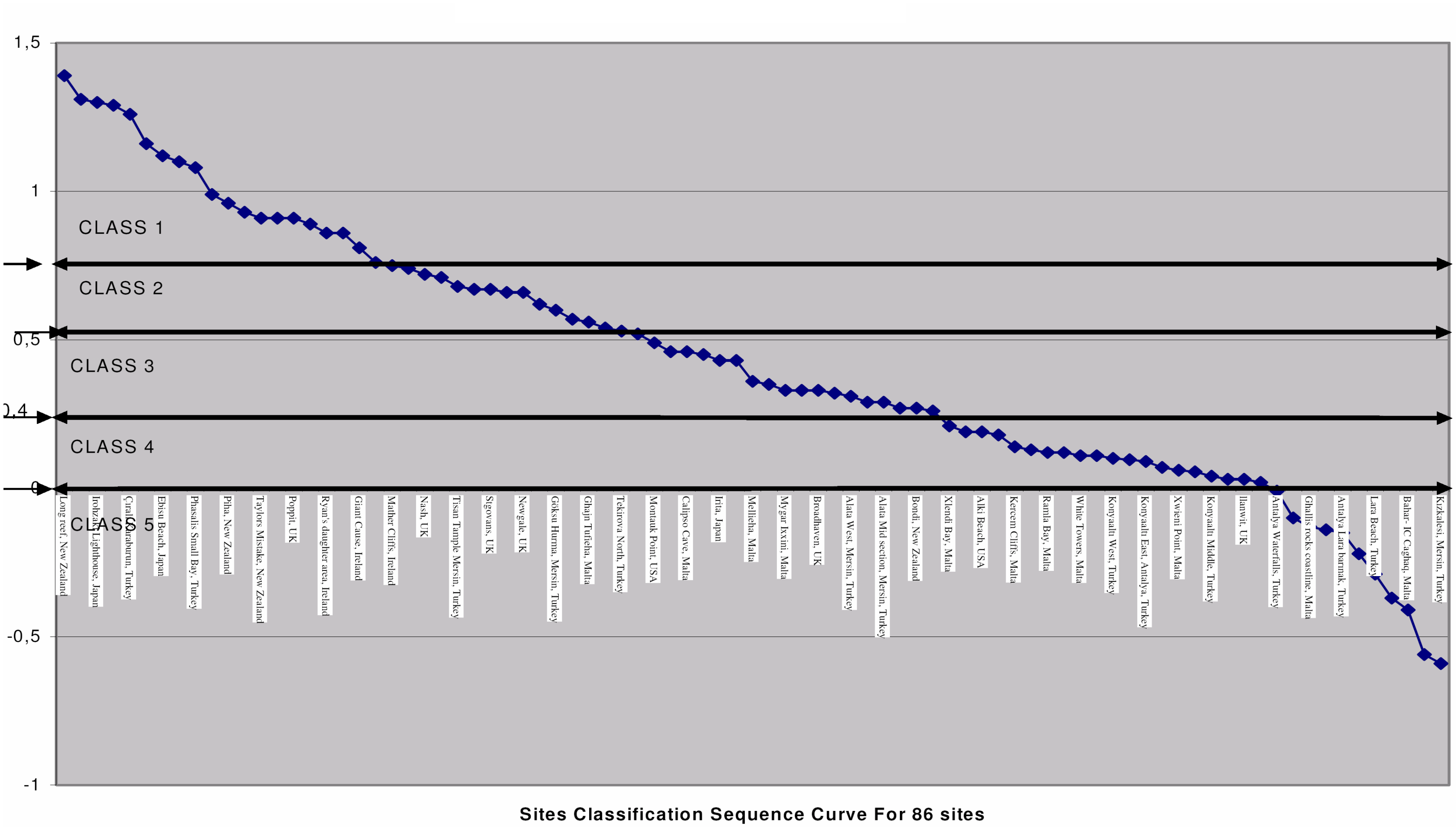


Figure 4- Classification of Sites

Five scenic classes were obtained by analyzing the curve break points based on midpoint change of slope on D values vs. sites graph. (Ergin et al, 2003) Normality test (Kolmogorov- Smirnov test) was also performed at %5 significance level confirming normality of the classes for D values of 86 sites.

The statistical package programme SPSS 9.0 was utilized for Kolmogorov Smirnov test. The normality was checked for D values of 86 sites in all classes together and for D values in each classes separately. The results of the test is given in Table 10 and Table 11. The asymptotic significant (2 tailed) level was 0,882 when all D values were checked together as given in Table 10, which was greater than 0.05. Therefore the distribution of 86 D values was normal.

In Table 11, all asymptotic significant (2 tailed) levels when D values for each scenic class considered separately, were greater than 0.05. Therefore D values within each scenic class were normally distributed.

Table 10- One Sample Kolmogorov Smirnov Test Result For D values of 86 sites in all scenic classes together

**One-Sample Kolmogorov-Smirnov Test**

| | | ALLCLASS |
|---|---|---|
| N | | 86 |
| Normal Parameters[a,b] | Mean | ,4173 |
| | Std. Deviation | ,4629 |
| Most Extreme Differences | Absolute | ,063 |
| | Positive | ,063 |
| | Negative | -,056 |
| Kolmogorov-Smirnov Z | | ,586 |
| Asymp. Sig. (2-tailed) | | ,882 |

a. Test distribution is Normal.

b. Calculated from data.

Table 11- One Sample Kolmogorov Smirnov Test Result For D values in each scenic classes separately

**One-Sample Kolmogorov-Smirnov Test**

| | | CLASS1 | CLASS2 | CLASS3 | CLASS4 | CLASS5 |
|---|---|---|---|---|---|---|
| N | | 18 | 11 | 13 | 32 | 12 |
| Normal Parameters[a,b] | Mean | 1,0683 | ,7118 | ,5123 | ,1813 | -,3025 |
| | Std. Deviation | ,1790 | 4,916E-02 | 6,418E-02 | ,1119 | ,2144 |
| Most Extreme Differences | Absolute | ,172 | ,196 | ,177 | ,146 | ,178 |
| | Positive | ,172 | ,196 | ,177 | ,146 | ,135 |
| | Negative | -,136 | -,146 | -,100 | -,134 | -,178 |
| Kolmogorov-Smirnov Z | | ,730 | ,649 | ,638 | ,823 | ,617 |
| Asymp. Sig. (2-tailed) | | ,662 | ,793 | ,810 | ,507 | ,841 |

a. Test distribution is Normal.

b. Calculated from data.

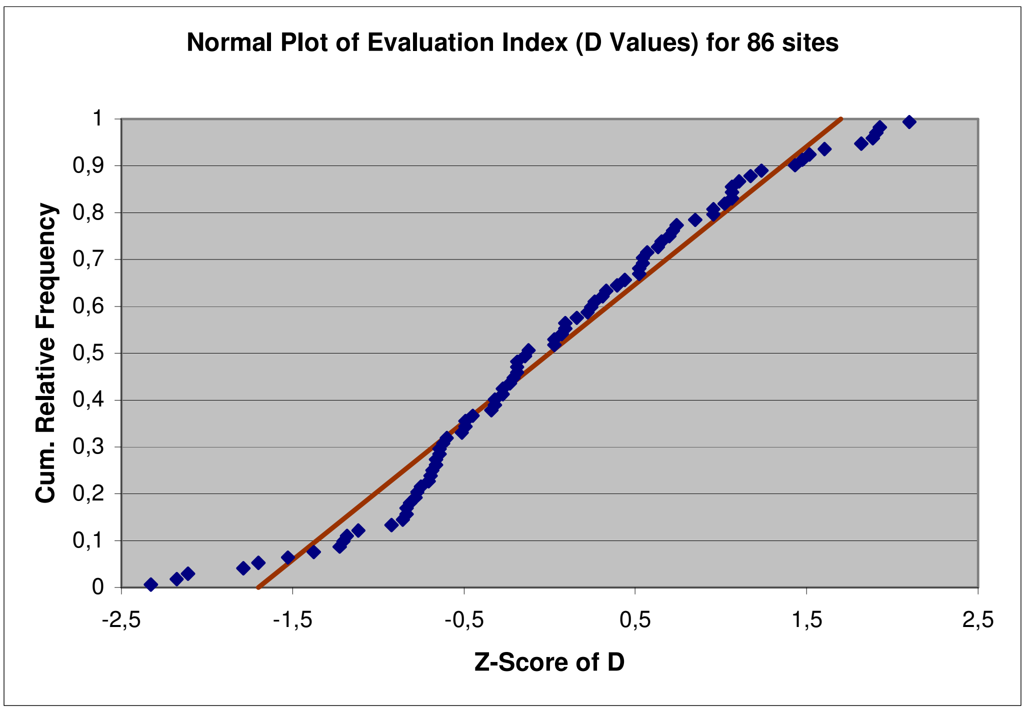


Figure 5 – Normal Plot of Evaluation Index for 86 sites

Normal plotting is a graphical method for determining whether sample data conform to normal distribution based on a subjective visual examination of the data.

$$\text{Z- score} = \frac{\text{D} - \text{Average of D}}{\text{Standard Deviation of D}}$$ and

Cumulative Relative Frequency $F_D(d) = \frac{n - k + 0.5}{n}$,

where k is the order of D values in descending form ( Table 9) and n is total number of sites )

# CHAPTER3
# PERCEPTION STUDIES

## 3.1. Environmental Perception

Without a prior understanding of the bases of perception and behaviour, environmental planning and improvement are mere academic exercises doomed to failure because unrelated to the terms in which people think and the goals they select. (Lowenthal, 1992) For the same reason, efforts to understand the effects of public perception on this methodology is also critical.

Perception, learning and thinking have traditionally been referred to as the cognitive processes since they all deal, to some extent, with the problem of knowledge. Perception has been regarded as the process by which an organism receives or extracts certain information about the environment. Learning is defined as the process by which this information is acquired through experience and becomes part of the organism's storage of facts in memory. Thus, the results of learning facilitate the further extraction of information since the stored facts become models against which cues are judged. The most complex of these cognitive processes, namely, thinking, is an activity that is inferred to be going on when an organism is engaged in solving problems, which also involves the use of models. (Forgus, Meloved, 1976)

The processing of environmental information can be broken up into stages.

1. Awareness of the environment; (what we pay attention to)

2. Perception of the environment (how we make sense of stimuli);

3. Environmental knowledge (organized information)

Environmental perception can be defined as the initial mental representation of the environment. It involves interpretation of stimuli and assignment of meaning. It is based on past experiences and basic principles of perceptual organization, stimuli are organized into patterns. (condor.stcloudstate.edu/~jaz/psy373/perception.html)Figure 6 illustrates the perception process.

Environmental perception forms the basis of our knowledge about the environment and environmental attitudes (evaluations).

Some of the important factors that direct the focus of human perception are as follows (Williams et al, 2003)

External factors:

- Intensity and Size. The brighter a light, the more likely we are to see it,
- Contrast and Novelty. New stimuli will often gain one's attention. The appearance or disappearance of a stimuli can also gain attention.
- Repetition. Repeated stimuli may cause one to ignore / pay attention to it. (e.g. motor way sign with flashing lights)

Internal factors:

- Notices and needs. (e.g. hunger, thirst)
- Preparatory set. One can awake for an early morning call if it is expected.
- Interest. Attention is paid to football scores, whilst effectively ignoring the rest of a radio programme.

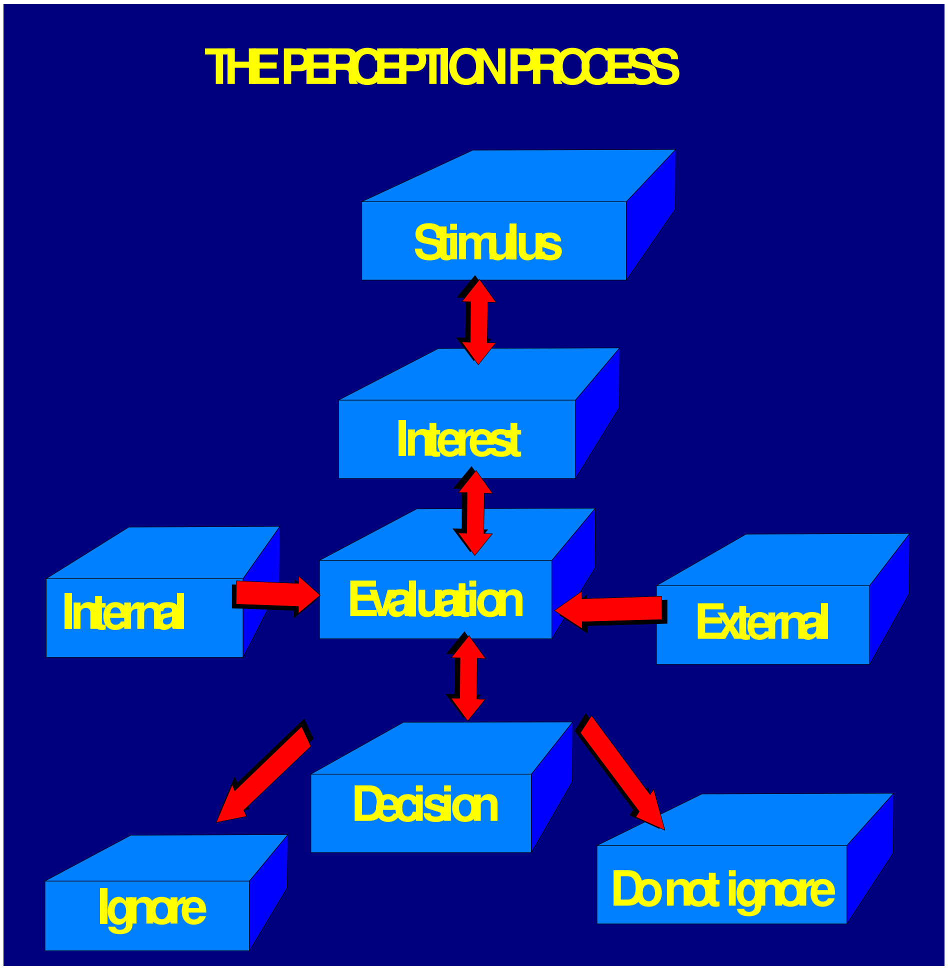


Figure 6 - The Perception Process

Humans respond to and affect the environment not directly, but through the medium of a personally apprehended milieu. This milieu differs for each of us according to his personal history; and for each of us it varies also with mood, with purpose and with attentiveness. What we see, what we study, and the way we shape and build in the landscape is selected and structured for each of us by custom, culture, desire and faith. (Lowenthal, 1992)

**3.2. Environmental Perception in Scenic Evaluation**

The appreciation of landscape is mostly influenced by the perception of observer. Thus, human perception of his environment was one of the most important aspects in the fuzzy logic methodology as in any other landscape assessment methodology. The parameter scoring in the field by the 'expert group or trainers' and public perception surveys were influenced by the way one perceives his surrounding.

Generally speaking, in the scoring process carried out in a particular by a small group of individuals, the perception is more limited in the time span, space span and number of participants. The group perceives and judges about a specific coastal area (the site to be scored) for scoring. The expert might have a previous knowledge about the specific coastal landscape for example because he has already visited the site before. Despite such a fact, some of the parameters (litter, noise etc.) may be influenced seasonally and all are influenced by characteristics and bias inherent in the expert at the time of site visit. However, in the public survey, number of participants is much more, space (different coastal areas one had already visited) and time (the first time one visited a coastal area and then after) considered in the public perception surveys are at larger scale.

Public perception is an important field in landscape assessment literature. Roswell (1981) mentioned in all landscape evaluation research, the aim was to simplify and codify peoples' perceptions, feelings and reactions to landscape quality, despite their apparent- but unsubstantiated- almost infinite complexity.

Roswell (1981) found that the public landscape evaluations are unrelated to respondents' social class and sex but correlated with perceived landscape characteristics and respondents' age and familiarity with local landscapes.

Eleftheriadis (1990) compared visual preferences for a set of landscape; represented in photographs, expressed by these various national groups were compared. The findings showed that there is an agreement over the basic preference, but, nevertheless there are differences of opinion between the nationality groups that might be attributed to cultural influences and the effect of being familiar with their own environments.

The findings of the study (Eleftheriadis, 1990) indicated that "there is good agreement among all groups about the most beautiful landscape and to some extent about the less beautiful ones, although their judgment criteria differ in many cases".

In LANDMAP (2001), the role of general public's view on local landscapes and environments is complementary to specialist- derived information of LANDMAP's aspects. Public perception study in LANDMAP process derives a mappable public perception data and brings it into the same medium as the expert- based data, thus allows it to be compared and contrasted. LANDMAP (2001) utilizes two- pronged approaches, 'top down' expert- led approach and a more 'bottom up' community- led strategy.

The 'top- down' approach of LANDMAP (2001) makes use of the following survey tools: a structured household survey of at least 100 respondents; 6 focus groups (children, youth, unemployed, people with special needs, rural land use, visitors) Choice of photographs/ slides are governed by consultants and local authority taking into account of several prerequisites. Household questionnaire is carried out in five clusters among twelve wards (rural areas, mature populations, middling Britain, established owner occupier, industrial areas, prosperous areas, deprived industrial area, inner city estates, suburbia, metropolitan professionals, lower status owner occupier, rural fringe) at the household address sending preliminary letter to the respondent. Focus groups allow certain key groups normally excluded and hidden from within the household survey to be involved. Slides for each landscape are presented and discussions are carried out small rooms. The data obtained is integrated into the database.

In bottom- up approach, each community council area produces a 'parish map' that encapsulates and annotates the main landscape characteristics of the area. Advice, support and resources are facilitated through a nominated local authority officer or through the LANDMAP management Service. The results are fed into the database on a community by community basis.

### 3.3. Public Perception Surveys

In Coastal Scenic Evaluation at Selected Sites: Turkey, UK, Malta British Council Report (Ergin 2003) (BCR, 2003), 270 inquiries were utilized in the weight calculation of the coastal parameters. In this thesis, surveys from Çıralı, Turkey (2004), Southern down (UK), Croatia and Malta were also included. The descriptive information of these surveys can be seen in Table 12. Some photos taken at Çıralı, Antalya visit in 2004 can be seen Appendix E.

Table 12- Descriptive Information of surveys

| No | Site | Number of inquiries appropriate | Number of inquiries dismissed | Total number of inquiries |
|---|---|---|---|---|
| 1 | Previous Study (BCR 2003) | 270 | NA | 270 |
| 2 | Çıralı, Turkey (2004) | 86 | 0 | 86 |
| 3 | Croatia | 47 | 51 | 98 |
| 4 | Malta | 73 | 0 | 73 |
| 5 | Southerndown,UK | 9 | 7 | 16 |
| | **TOTAL** | **485** | **58** | **543** |

Inquiries with unmarked- double marked parameters from Croatia and UK were excluded from the study for conveyance. The weights of the parameters were computed via fuzzy logic methodology for each country separately and totally and according D values for each coastal site were computed. The tables can be seen in Appendix C.

Comparing weights of parameters for total survey (485 respondents), the max value among 29 parameters is 0.1501 of litter and sewage parameters. On the other hand, the min value was 0.0126 of rocky shore platform slope. The minimum standard deviation among 29 parameters was 0.02 of shore slope and disturbance factor (noise). The max standard deviation was 0,031 of water color and clarity.

Comparing scores among 86 sites by different surveys, the maximum D value is 1.44 of Long Reef, New Zealand when Croatia survey was considered only. The min absolute coefficient of variation among 29 parameters was 0.0136 of Sumner, New Zealand. This value shows that Sumner, New Zealand has the smallest std. deviation/ mean value. The max standard dev. among 29 parameters is 0.0828 of Giant Cause, Ireland. This value shows that the D values of Giant Cause is clustered most tightly around its average value among the other 28 parameters.

Ordering the sites according to all surveys (Croatia, Çıralı (2004), Malta, Southerndown, Previous Study (BCR 2003) considered, top five sites were listed as:

1. Long Reef , New Zealand;
2. Çıralı Mid,section, Turkey;
3. Irohzaki, Japan;
4. Karekare, New Zealand;
5. Çıralı Karaburun, Turkey

which is also the case in previous study (BCR 2003)'s weights of parameters were considered

The sites with the lowest D values are as the following:

82. Marsalforn Bay, Malta;
83. Bahar-IC-Caghaq, Malta;
84. Stranford, Ireland;
86. Kız Kalesi, Mersin, Turkey;
87. St. George's Bay, Malta;

which are also the case in previous study (BCR 2003)'s weights of parameters were considered.

### 3.4. Statistical Analysis

To compare preferences of coastal users, beside methodological contributions of the survey, questionnaires form was revised to include demographical information of respondents. The demographical information in the questionnaires were age, sex, locality, education, occupation, economic consideration, vacation preferences (place & activities). The survey with revised questionnaires was carried out in Çıralı, Antalya, Turkey in 2004 May. The questionnaire form can be seen Table 3 and Table 4. Statistical analysis were also carried out by using inquiry forms given in Table 3 and Table 4.

The survey in Çıralı 2004 was carried with participation of 86 respondents. The followings are the survey descriptive information, giving a general outlook:

Table 13 to Table 20 give the general demographical information of respondents with percentages of the categories. For example, the number of respondents falling into each four age categories are given in Table 13. The age category is also the first question of the public survey in Çıralı 2004 which is given in Table 3.

Table 13- Age Category Information for Çıralı Inquiry

| Age category | Number of respondents |
|---|---|
| 18-29 | 15 (17 %) |
| 30- 44 | 39 (45 %) |
| 45-64 | 30 (35 %) |
| 65- | 2 (2 %) |

Table 14– Sex category Information for Çıralı Survey

| Sex category | Number of respondents |
|---|---|
| Male | 52 (% 60 ) |
| Female | 34 (% 40) |

Table 15– Local category information for Çıralı Survey

| Locality category | Number of respondents |
| --- | --- |
| Local people | 29 (34 %) |
| Native tourist | 33 (39 %) |
| Foreign tourist | 24 (28 %) |

Table 16- Education Information for Çıralı Survey

| Education category | Number of respondents |
| --- | --- |
| Higher education | 46 (53 %) |
| Below higher education | 40 (47 %) |

Table 17- Occupation Category for Çıralı Survey

| Occupation category | Number of respondents |
| --- | --- |
| Retired | 8 (13 %) |
| Employed | 65 (76 %) |
| Student | 8 (13 %) |
| Unemployed | 5 (6 %) |

Table 18- Economical consideration category information for Çıralı Visit for Çıralı Survey

| Occupation category | Number of respondents |
| --- | --- |
| Consider | 21 (25 %) |
| Don't consider | 65 (76 %) |

Table 19- Place of vacation preference category information for Çıralı Survey

| Place of vacation category | Number of respondents |
|---|---|
| Coast | 35 (41 %) |
| Forest | 20 (23 %) |
| Relatives | 4 (5 %) |
| Other | 27 (31 %) |

Table 20- Preferences on vacation for Çıralı Survey

| Place of vacation category | Number of respondents |
|---|---|
| Crowded entertainments | 5 (6 %) |
| Swimming | 21 (24 %) |
| Local visits | 20 (23 %) |
| Other | 40 (47 %) |

Other categories in Table 19 and Table 20 were high mostly due to the fact that local people mostly do not have vacations as they mentioned in the surveys.

Table 21.1- Descriptives Statistics for Demographical Questions in Çıralı Public Perception Survey

| Questions | N | Min. | Max. | Mean | Std. Dev. | Coef.Var |
|---|---|---|---|---|---|---|
| Age Category | 86 | 1 | 4 | 2,221 | 0,75772 | 0,341174 |
| Sex | 86 | 1 | 2 | 1,605 | 0,49179 | 0,30648 |
| Locality | 86 | 1 | 3 | 1,942 | 0,78747 | 0,405524 |
| Education | 86 | 1 | 2 | 1,465 | 0,50171 | 0,342435 |
| Occupation | 86 | 1 | 4 | 2,116 | 0,64019 | 0,30251 |
| Economical consideration | 86 | 1 | 2 | 1,76 | 0,43 | 0,244318 |
| Place preference on vacation | 86 | 1 | 4 | 2,442 | 1,16422 | 0,476775 |
| Preference on vacation | 86 | 1 | 4 | 3,105 | 0,97049 | 0,312594 |

Table 21.2 Descriptives Statistics for Scenic Parameters in Cirali Public Perception Survey

| Scenic Parameters | N | Min. | Max. | Mean | Std. Dev. | Coef.Var |
|---|---|---|---|---|---|---|
| Cliff slope | 86 | 1 | 5 | 2,674 | 0,90022 | 0,336604 |
| Cliff special features | 86 | 1 | 5 | 2,919 | 1,09775 | 0,376123 |
| Beach type sand | 86 | 1 | 5 | 3,802 | 1,01541 | 0,267049 |
| Beach type pebble/gravel | 86 | 1 | 5 | 3,023 | 0,96986 | 0,3208 |
| Beach type rocky | 86 | 1 | 5 | 2,779 | 1,23098 | 0,442948 |
| Beach width | 86 | 1 | 5 | 3,337 | 1,05842 | 0,317156 |
| Beach colour | 86 | 1 | 5 | 3,151 | 0,98837 | 0,313653 |
| Rocky shore platform slope | 86 | 1 | 5 | 2,779 | 0,91267 | 0,328409 |
| Rocky shore platform extent | 86 | 1 | 5 | 2,709 | 1,07228 | 0,395779 |
| Rocky shore platform roughness | 86 | 1 | 5 | 3,047 | 1,18726 | 0,38971 |
| Sand dunes | 86 | 1 | 5 | 3,151 | 1,26041 | 0,399984 |
| Valley and river mouth | 86 | 1 | 5 | 3,791 | 1,03032 | 0,271802 |
| Landform flat | 86 | 1 | 5 | 2,57 | 1,10124 | 0,428536 |
| Landform undulating | 86 | 1 | 5 | 3,128 | 0,94304 | 0,301493 |
| Landform mountain | 86 | 1 | 5 | 3,907 | 1,06967 | 0,273784 |
| Tides | 86 | 1 | 5 | 2,814 | 1,10093 | 0,391238 |
| Coastal landscape features | 86 | 1 | 5 | 4,14 | 0,89657 | 0,216586 |
| Vistas of far places | 86 | 1 | 5 | 3,57 | 0,98865 | 0,276951 |
| Historical features | 86 | 2 | 5 | 4,233 | 0,8356 | 0,197421 |
| Water colour and clarity | 86 | 3 | 5 | 4,698 | 0,51036 | 0,108641 |
| Seaweed banquets | 86 | 1 | 5 | 3,779 | 1,07814 | 0,285292 |
| Biotype diversity | 86 | 1 | 5 | 4,477 | 0,76276 | 0,170383 |
| Natural vegetation cover | 86 | 1 | 5 | 4,43 | 0,80499 | 0,181705 |
| Absence of noise | 86 | 3 | 5 | 4,651 | 0,50334 | 0,108218 |
| Absence of sewage and litter | 86 | 4 | 5 | 4,849 | 0,36031 | 0,074308 |
| Land use | 86 | 1 | 5 | 3,64 | 1,17736 | 0,323493 |
| Absence of buildings and utilities | 86 | 3 | 5 | 4,674 | 0,54106 | 0,11575 |
| Ease of access | 86 | 1 | 5 | 4,221 | 1,01055 | 0,239413 |

Table 21.1 and Table 21.2 give some descriptive information about public perception survey in Çıralı in 2004. N column in Table 21.1 gives the number respondents answered the question. Each category in each question has given a number as attribute. The max column gives the maximum attribute given for the question by the 86 respondents and min column gives the minimum attribute given for the question by the 86 respondents. Mean column gives the mean of attributes in the questions and standard deviation. The std. dev. column gives the standard deviation value that tells how tightly all the attributes given by respondents are clustered around the mean of the question. Coefficient variance column gives the coefficient of variance obtained by dividing the standard deviation by the mean. A

category with low standard deviation and high mean value would get a high coefficient of variance which gives a better idea of the category.

For example, locality question that has three attributes as local, native tourist and foreign tourist in Table 21.1 has min attribute value 1 and max attribute value 3. The mean of attributes is 1.942 and standard deviation of attributes is 0.78747. The coefficient of variance of locality attributes is 0,405524.

The max mean for attributes of parameters was 4,849 of absence of sewage and litter in Table 21.2. The minimum mean for attributes of parameters was 0,90022 of cliff slope. The max value for coefficient variance (standard deviation divided by mean) was 0.108641 of water colour and clarity and on the other hand the max value was 0,442948 of beach type rocky.

Another normality distribution check was done for mean values of attributes of parameters in Çıralı 2004 public perception surveys. From Table 21.2, the mean of attributes for parameters was obtained and means of parameters vs. Z- scores of means were plotted in Figure 7. Table 22 shows the mean, cumulative frequency ratio and z- scores of each parameter. The cumulative frequency ratio was calculated as follows:

$$F_D(d) = \left(\frac{j-0.5}{n}\right)$$

where j is the order of mean values of attributes in descending form and n is total number of attributes

Z score was read from cumulative standard normal distribution table utilizing the cumulative frequency ratios of the means of attributes.

The z score for mean of an attribute, indicates how far and in what direction, that mean of attribute deviates from its distribution's mean, expressed in units of its distribution's standard deviation. The mathematics of the z score transformation are such that if every item in a distribution is converted to its z score, the transformed scores will necessarily have a mean of zero and a standard deviation of one.

Table 22– Means, Std. Deviations, Z scores for means of 29 parameters

| Order No (j) | Parameter No | Parameters | Mean | Fz= (j-0.5)/ 29 | Z score |
|---|---|---|---|---|---|
| 1 | 14 | Landform flat | 2,57 | 1,724138 | -2,11 |
| 2 | 2 | Slope | 2,674 | 5,172414 | -1,64 |
| 3 | 10 | Platform extent | 2,709 | 8,62069 | -1,36 |
| 4 | 9 | Platform slope | 2,779 | 12,06897 | -1,17 |
| 5 | 6 | Beach type (rocky) | 2,779 | 15,51724 | -1,02 |
| 6 | 17 | Tides | 2,814 | 18,96552 | -0,88 |
| 7 | 3 | Cliff special features | 2,919 | 22,41379 | -0,76 |
| 8 | 5 | Beach type (pebble/gravel) | 3,023 | 25,86207 | -0,65 |
| 9 | 11 | Platform roughness | 3,047 | 29,31034 | -0,54 |
| 10 | 1 | Cliff Height | 3,093 | 32,75862 | -0,45 |
| 11 | 15 | Landform undulating | 3,128 | 36,2069 | -0,35 |
| 12 | 8 | Beach Colour | 3,151 | 39,65517 | -0,26 |
| 13 | 12 | Sand dunes | 3,151 | 43,10345 | -0,17 |
| 14 | 7 | Beach width | 3,337 | 46,55172 | -0,09 |
| 15 | 19 | Vistas of far places | 3,57 | 50 | 0 |
| 16 | 27 | Land use | 3,64 | 53,44828 | 0,09 |
| 17 | 22 | Seaweed banquets | 3,779 | 56,89655 | 0,17 |
| 18 | 13 | Valley and river mouth | 3,791 | 60,34483 | 0,26 |
| 19 | 4 | Beach type (sand) | 3,802 | 63,7931 | 0,35 |
| 20 | 16 | Mountains | 3,907 | 67,24138 | 0,45 |
| 21 | 18 | Coastal landscape features | 4,14 | 70,68966 | 0,54 |
| 22 | 29 | Ease of access | 4,221 | 74,13793 | 0,55 |
| 23 | 20 | Historical features | 4,233 | 77,58621 | 0,76 |
| 24 | 24 | Natural vegetation cover | 4,43 | 81,03448 | 0,88 |
| 25 | 23 | Biotype diversity | 4,477 | 84,48276 | 1,01 |
| 26 | 25 | Absence of noise | 4,651 | 87,93103 | 1,17 |
| 27 | 28 | Absence of buildings and utilities | 4,674 | 91,37931 | 1,36 |
| 28 | 21 | Water colour and clarity | 4,698 | 94,82759 | 1,63 |
| 29 | 26 | Absence of sewage and litter | 4,849 | 98,27586 | 2,11 |

In drawing the straight line in Figure 7, a rule thumb, i.e. to draw the line approximately between the $25^{th}$ and $75^{th}$ percentile points, were utilized. The points away from the straight line indicate that these parameters were more specific points than the ones near to the line. It can be said that the parameters were normally distributed.

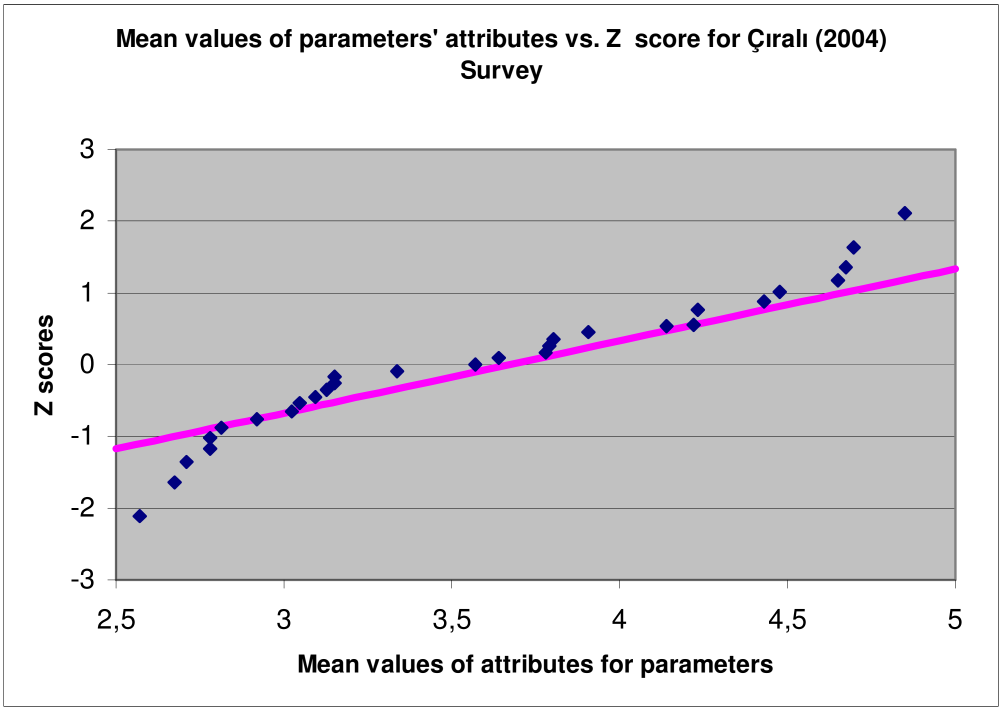


Figure 7 - Means of attributes for parameters vs Z scores plot

The data of parameter preferences in Çıralı survey was analyzed utilizing Factor Analysis using SPSS 9.0, a statistical computer package programme. Factor analysis is a statistical technique used to reduce a set of variables to a smaller number of variables or factors. Factor analysis examines the pattern of correlations between the variables, and determines whether there are subsets of variables (or factors) that correlate highly with each other but that show low correlations with other subsets (or factors). (http://www.amherst.edu/~psych/psych22/factor.html)

The results of the analysis for Çıralı surveys were used to correlate the demographical information of respondents by using independent T-test for two choice questions (sex, education and economical consideration) and one- way ANOVA for the rest.

Before the analysis, it was expected that human parameters & physical parameters were grouped in general. Also, it was expected that cliff features (height, slope & special features), beach face parameters (colour, width, type), rocky shore platform parameters might be grouped. Landform parameters (flat, undulating, mountainous) were also expected to load on a factor. Also fauna and flora might be grouped in a factor.

The factor extraction method was principal components method and rotation method was varimax. The program tests Kaiser-Meyer-Olkin measure of Sampling Adequacy as seen in Table 23. Since the score was 0.559> 0.40, factor analysis can be applied.

The communalities presented in Table 24 indicate the percent of variance in a given variable explained by all the factors. In Table 24 the "initial" column indicate the amount of variance accounted for by all of the factors. The values are 1.00 since all the variance is explained by all the factors. The "extraction" column indicate the variance in a given variable explained by the extracted factors only. Therefore, the values in the "extraction" column are below 1.00. As an example the amount of variance in cliff parameter explained by only the extracted factors is 0.771. The larger this value, the more the variance of the parameter will be explained by the extracted factors.

To select the number of factors among the 29 parameters, Table 25 "Total Variance Explained" Table which shows the eigenvalues, was presented. Since the program SPSS was used to select as factors those with eigenvalues of at least one, from Table 25, 11 factors have been selected.

Eigenvalue is column sum of squared loadings for a factor; also referred to as the latent root. It represents the amount of variance accounted for by a factor. The commonly used criteria for the number of factors to extract is the eigenvalue criterion. The rationale for the eigenvalue criterion is that any individual factor should account for the variance of at least a single variable if it is to be retained for interpretation. Each variable contributes a value of 1 to the total eigenvalue. Thus, only the factors having eigenvalues greater than one are considered significant; all factors with eigenvalue less than 1 are considered insignificant and are disregarded.(Hair et al, 1998)

The Rotated Component Matrix (Table 26) was obtained, which is normally easier to interpret than the component matrix. The Rotated Component Matrix was used to determine which factors loaded onto the extracted factors. The variables with high factor loadings (around .60 and higher) on an extracted factor is said to load onto that factor. (http://www.richmond.edu/~pli/psy538/factor02/out.html)

As seen in Table 26, all factor loadings were above 0.35. Yet not high enough to be conclusive, the highest loadings for each variable were considered to group the parameters as follows:

Factor 1 (Natural Usage): Natural vegetation Cover, Biotype Diversity, Absence of Buildings and Utilities, Absence of Sewage and Litter, Land Use, Ease of Access

Factor 2 (Beach face Criteria): Beach face width, Beach face (sand), Beach face colour, Seaweed banquets

Factor 3 (Coastal Rocky Features): Platform Slope, Platform Extent, Platform Roughness, Beach Face (rocky)

Factor 4 (Cliff Features): Cliff special features, Cliff slope, Cliff Height

Factor 5 (Visual characteristics): Water Color & Clarity, Coastal Landscape Features, Historical Features

Factor 6 (Geographic features): Valley & River Mouth, Sand Dunes, Landform (Mountainous)

Factor 7 (as named): Beach Face (pebble/ gravel)

Factor 8 (as named): Vistas of Far Places

Factor 9 (as named): Tides, Absence of Noise

Factor 10 (as named): Landform (Flat)

Factor 11 (as named): Landform (Undulating)

As a result of the computations, some of the expectations were met such as cliff parameters, human usage and fauna & flora, rocky shore platform, beach face parameters and were grouped in four factors factor from one to four. Factors from 5, 6 and 9 were difficult to determine specific names because the parameters within these factors were not physically related as much as the factors 1 to 5. Factors 7, 8, 10 & 11 have only one parameter so they were named as the parameters themselves. Landform parameters might have been expected to be grouped in one factor instead of two.

The resulting factors were statistically analyzed against demographical information of respondents using independent T- test and one- way ANOVA. Independent T-test was used for two choice questions such as sex, economical consideration and education. One way ANOVA was used for the rest of the demographical questions which have more than two choices.

The One-Way ANOVA compares the mean of one or more groups based on one independent variable (or factor).
(http://www.wellesley.edu/Psychology/Psych205/anova.html)

Within one way ANOVA, Bonferroni test was used to make "Multiple Comparisons" giving the mean difference in the dependent variable between any two groups (eg., differences in test scores for any two educational groups). The significance of this difference at the .05 level or better demonstrates that two are significantly different.

The Independent-Samples T Test procedure compares means for two groups of cases. Ideally, for this test, the subjects should be randomly assigned to two groups, so that any difference in response is due to the treatment (or lack of treatment) and not to other factors. (SPSS tutorial)

The output results of ANOVA and independent T tests can be seen in Appendix D.

Within the scope of the present work, examining SPSS v9.0 results it was found that for three locality categories (local, native tourist, foreign tourist), all three were significantly different than each other for factor 1 (natural usage). There was significant difference between native tourist and foreign tourist for factor three (rocky features); between local and the other two for factor five (visual features) and between local and foreign tourist for factor 9 (tides & absence of noise)

For four age categories (18-29, 30-44, 45- 65, 65-), it was found that there was significant difference between 45- 64 and 30- 44 for factor 2 (beach face features) and between 18- 29 and 45- 64 for factor 5 (visual features)

For sex category (male, female), there was a significant difference between the two for factor 4 (cliff features) and factor 5 (visual features)

For education category (higher education, below higher education), there was no significant difference between the two for all factors.

For four occupation categories (retired, employed, student, unemployed), there was a significant difference between student and retired, between student and employed for factor 5 (visual features), between student and employed for factor 6 (geographic features), between student and retired and between student and unemployed for factor 8 (vistas of far places)

For economic consideration category (considered and not considered), there was a significant difference between the two for factor 1 (natural usage) and factor 7 (pebble & gravel)

For place for vacation preference category (forest, coastal, relatives, other) there was significant difference between other and the other three for factor 1 (natural usage), between coastal and other for factor 5 (visual features)

For type of vacation preferences category (crowding entertainment, swimming, local visits, other), there was a significant difference between other and the other three for factor 1 (natural usage), between swimming and other for factor 5 (visual features), between crowding entertainment and the other three for factor 6 (geographic features)

The important results of the analysis may be as follows:

When locality was considered, when factor one (natural usage)was considered local people give highest importance, native tourist give least importance and foreign tourists in between. Foreign tourists give the significantly higher importance to factor three (coastal rocky features) than the other two. Local people give significantly less importance to factor five (visual characteristics) than the other two.

When education category was considered, the fact that there was no significant difference between higher education and below could be explained by the high public awareness against environmental issues in Çıralı, Turkey.

The Society for the Protection of Nature has been carrying out conservation projects in Çıralı since 1994. Major components of the project includes the drafting of the "Çıralı Conservation Zoning Development Plan" and the "Çıralı Coastal Management Plan", a process which brings together the contributions of local administration agencies and organisations, as well as the direct participation and support of local residents. Another component consists in educational activities to heighten local residents' awareness for natural values (Gezer,2004).

As environmental conservation has been a major concern for local public participated in the survey who were mostly below higher education, not a major difference between higher educated/ below higher educated respondents could be observed.

For sex category, for factor four (cliff features) male give a higher importance than the female and for factor five (visual characteristics) female gave significantly more importance than the male.

For economical consideration category, respondents who do not consider economy for visit to Çıralı gave significantly more importance to factor one (natural usage) and factor seven ,(beach face/ pebble and gravel) than the ones who had economical consideration for visit to Çıralı.

For occupation category, for factor five (visual characteristics), students gave significantly more importance than both retired and employed people. For factor six (geographic features), employed gave more importance than students and for factor eight (vistas of far places), both retired people and unemployed people gave importance than students.

For Age category, for factor 2 (beach face criteria), people between age 30 - 44 gave significantly more importance than 45 – 64 and for factor five (visual characteristics) people between age 18- 29 gave more importance than people between age 45- 64.

For preference category, for factor 6 (geographic features), people who prefer crowded entertainments gave less importance than others.

Table 23- KMO and Barlett's Test Results for Factor Analysis

**KMO and Bartlett's Test**

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | ,559 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 896,882 |
| | df | 406 |
| | Sig. | ,000 |

Table 24- Communalities Table of Factor Analysis

**Communalities**

| | Initial | Extraction |
|---|---|---|
| cliff height | 1,000 | ,771 |
| cliff slope | 1,000 | ,786 |
| cliff special features | 1,000 | ,792 |
| beach type sand | 1,000 | ,741 |
| beach type pebble/gravel | 1,000 | ,809 |
| beach type rocky | 1,000 | ,737 |
| beach width | 1,000 | ,777 |
| beach colour | 1,000 | ,661 |
| platform slope | 1,000 | ,837 |
| platform extent | 1,000 | ,777 |
| platform roughness | 1,000 | ,706 |
| sand dunes | 1,000 | ,724 |
| valley and river mouth | 1,000 | ,642 |
| landform flat | 1,000 | ,830 |
| landform undulating | 1,000 | ,712 |
| landform mountains | 1,000 | ,809 |
| tides | 1,000 | ,730 |
| coastal landscape features | 1,000 | ,686 |
| vistas of far places | 1,000 | ,887 |
| historical features | 1,000 | ,766 |
| water colour and clarity | 1,000 | ,637 |
| seaweed banquets | 1,000 | ,543 |
| biotype diversity | 1,000 | ,694 |
| natural vegetation cover | 1,000 | ,798 |
| absence of noise | 1,000 | ,563 |
| absence of sewage and litter | 1,000 | ,618 |
| land use | 1,000 | ,739 |
| absence of buildings and utilities | 1,000 | ,723 |
| ease of access | 1,000 | ,807 |

Extraction Method: Principal Component Analysis.

# Table 25- Total Variance Explained After Factor Analysis

**Total Variance Explained**

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 3,942 | 13,594 | 13,594 | 3,942 | 13,594 | 13,594 | 3,085 | 10,638 | 10,638 |
| 2 | 3,231 | 11,143 | 24,737 | 3,231 | 11,143 | 24,737 | 2,368 | 8,166 | 18,803 |
| 3 | 2,257 | 7,784 | 32,521 | 2,257 | 7,784 | 32,521 | 2,270 | 7,826 | 26,630 |
| 4 | 1,954 | 6,737 | 39,258 | 1,954 | 6,737 | 39,258 | 2,269 | 7,823 | 34,453 |
| 5 | 1,864 | 6,429 | 45,687 | 1,864 | 6,429 | 45,687 | 2,044 | 7,049 | 41,502 |
| 6 | 1,822 | 6,281 | 51,969 | 1,822 | 6,281 | 51,969 | 1,823 | 6,285 | 47,787 |
| 7 | 1,483 | 5,114 | 57,083 | 1,483 | 5,114 | 57,083 | 1,614 | 5,566 | 53,353 |
| 8 | 1,301 | 4,487 | 61,570 | 1,301 | 4,487 | 61,570 | 1,527 | 5,265 | 58,618 |
| 9 | 1,272 | 4,386 | 65,956 | 1,272 | 4,386 | 65,956 | 1,518 | 5,235 | 63,853 |
| 10 | 1,109 | 3,823 | 69,779 | 1,109 | 3,823 | 69,779 | 1,409 | 4,858 | 68,711 |
| 11 | 1,070 | 3,689 | 73,468 | 1,070 | 3,689 | 73,468 | 1,380 | 4,757 | 73,468 |
| 12 | ,927 | 3,197 | 76,665 | | | | | | |
| 13 | ,834 | 2,876 | 79,541 | | | | | | |
| 14 | ,710 | 2,449 | 81,989 | | | | | | |
| 15 | ,697 | 2,403 | 84,392 | | | | | | |
| 16 | ,636 | 2,194 | 86,587 | | | | | | |
| 17 | ,545 | 1,880 | 88,467 | | | | | | |
| 18 | ,466 | 1,607 | 90,074 | | | | | | |
| 19 | ,441 | 1,520 | 91,594 | | | | | | |
| 20 | ,381 | 1,314 | 92,908 | | | | | | |
| 21 | ,358 | 1,235 | 94,143 | | | | | | |
| 22 | ,339 | 1,170 | 95,313 | | | | | | |
| 23 | ,292 | 1,008 | 96,321 | | | | | | |
| 24 | ,213 | ,736 | 97,057 | | | | | | |
| 25 | ,210 | ,723 | 97,780 | | | | | | |
| 26 | ,195 | ,671 | 98,451 | | | | | | |
| 27 | ,169 | ,584 | 99,035 | | | | | | |
| 28 | ,146 | ,503 | 99,538 | | | | | | |
| 29 | ,134 | ,462 | 100,000 | | | | | | |

Extraction Method: Principal Component Analysis.

# Table- 26 Rotated Component Matrix of Factor Analysis

**Rotated Component Matrix** [a]

| | Component | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| natural vegetation cover | ,778 | -8,16E-02 | -7,14E-02 | 3,326E-02 | -,152 | ,285 | ,206 | ,168 | -4,39E-02 | -2,72E-02 | -5,46E-02 |
| biotype diversity | ,744 | 5,847E-02 | ,181 | 5,535E-02 | -5,46E-03 | -3,29E-02 | 3,246E-02 | -,115 | -3,83E-02 | 5,650E-02 | -,285 |
| absence of buildings and utilities | ,707 | 3,996E-02 | -6,00E-02 | -9,80E-02 | ,171 | -,111 | 2,708E-02 | -1,73E-03 | ,153 | ,153 | ,346 |
| absence of sewage and litter | ,615 | 3,370E-03 | -1,61E-02 | ,201 | ,243 | -,130 | -,329 | -5,95E-02 | 5,454E-02 | -6,67E-02 | 6,078E-02 |
| land use | ,576 | -6,77E-02 | -8,38E-02 | 7,946E-02 | -,457 | ,209 | ,102 | ,145 | ,292 | -,135 | 4,740E-02 |
| ease of access | ,523 | ,130 | ,109 | -,168 | -,116 | 8,975E-02 | 1,358E-02 | -,346 | ,456 | -,159 | -,320 |
| beach width | ,160 | ,811 | 1,610E-02 | -3,42E-02 | 4,985E-02 | 6,084E-02 | ,214 | 3,025E-02 | ,114 | -,163 | 1,655E-02 |
| beach type sand | -9,94E-02 | ,793 | -7,21E-02 | -,103 | 4,401E-02 | 1,989E-02 | -,200 | -3,12E-02 | -9,30E-02 | ,173 | 7,108E-02 |
| beach colour | -,125 | ,623 | -,190 | 9,384E-02 | -,119 | 2,847E-02 | -,333 | ,125 | 9,436E-02 | -,202 | ,147 |
| seaweed banquets | ,142 | ,416 | -8,49E-02 | -,119 | 8,963E-02 | -6,41E-02 | -,400 | -6,83E-02 | ,314 | ,129 | -,191 |
| platform slope | -6,31E-02 | -2,21E-02 | ,831 | -1,61E-02 | -,297 | 6,422E-02 | -4,37E-03 | -5,17E-02 | 9,178E-02 | -,131 | ,145 |
| platform extent | ,137 | -,219 | ,743 | 9,406E-02 | 1,725E-02 | -,186 | ,263 | 2,195E-02 | -,210 | 4,140E-02 | -2,39E-03 |
| platform roughness | 1,976E-02 | -8,49E-03 | ,738 | ,158 | ,200 | -6,75E-02 | -2,04E-02 | 3,141E-02 | -,238 | 3,720E-02 | -,179 |
| beach type rocky | -,300 | -,365 | ,386 | ,311 | 4,559E-02 | ,212 | -,227 | -,174 | 9,446E-02 | ,162 | -,324 |
| cliff special features | 8,280E-02 | ,124 | 8,406E-02 | ,821 | 7,528E-02 | -4,37E-02 | ,172 | ,214 | -2,60E-02 | 7,076E-02 | -1,14E-03 |
| cliff slope | -1,34E-02 | -5,47E-02 | 5,970E-02 | ,792 | -,105 | -5,31E-02 | 3,597E-02 | -,272 | -4,13E-02 | -7,49E-02 | -,234 |
| cliff height | 7,606E-02 | -,309 | 8,459E-02 | ,735 | ,108 | 5,634E-02 | -7,62E-02 | -,182 | 6,944E-03 | 2,904E-02 | ,261 |
| water colour and clarity | ,208 | -,124 | -,218 | -9,08E-02 | ,714 | 4,140E-03 | -1,48E-02 | 6,119E-02 | 2,506E-02 | -8,47E-02 | 3,595E-02 |
| coastal landscape features | -,145 | ,198 | ,173 | ,301 | ,694 | 2,256E-02 | 7,358E-02 | -4,52E-02 | -2,83E-02 | -,121 | -8,97E-03 |
| historical features | -8,91E-02 | 2,224E-02 | 2,600E-02 | -,158 | ,490 | ,380 | -,343 | ,404 | ,207 | -1,95E-02 | -,152 |
| valley and river mouth | ,158 | ,157 | -,168 | -1,18E-03 | 4,693E-02 | ,720 | 9,179E-02 | ,156 | -1,03E-02 | 6,571E-02 | 8,166E-02 |
| sand dunes | -,198 | -,227 | ,132 | 2,284E-02 | -,139 | ,678 | 1,640E-02 | -,175 | -,191 | ,182 | ,190 |
| landform mountains | ,216 | ,164 | -,119 | -,148 | ,195 | ,564 | ,114 | -,119 | -1,78E-02 | -,557 | 7,671E-02 |
| beach type pebble/gravel | 7,045E-02 | -8,91E-02 | 8,378E-02 | ,100 | 3,253E-02 | ,101 | ,867 | 5,707E-03 | 8,527E-02 | 3,021E-02 | -8,80E-02 |
| vistas of far places | 5,268E-03 | 5,559E-02 | -2,02E-03 | -,123 | 2,204E-03 | 6,501E-03 | 3,093E-02 | ,919 | 7,435E-02 | -6,44E-02 | -,117 |
| tides | 5,221E-02 | -1,87E-04 | ,190 | -5,42E-03 | -,361 | ,160 | -,148 | -5,41E-02 | -,696 | -,111 | -,117 |
| absence of noise | ,214 | 8,488E-02 | -,148 | -1,44E-02 | -,310 | -2,96E-02 | -9,38E-02 | ,129 | ,598 | -3,58E-02 | 8,843E-02 |
| landform flat | 7,260E-02 | -1,78E-02 | -6,62E-02 | -1,60E-02 | -7,89E-02 | ,166 | 5,214E-02 | -8,47E-02 | 2,747E-02 | ,878 | 6,840E-02 |
| landform undulating | -5,71E-02 | ,127 | -8,64E-03 | -1,51E-02 | -2,33E-02 | ,224 | -7,40E-02 | -,150 | 9,673E-02 | 4,382E-02 | ,776 |

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 13 iterations.

# CHAPTER 4
# RESULTS & DISCUSSION

## 4.1. Results & Discussions

Coastal scenic evaluation methodology using Fuzzy Logic Mathematics was based on:

- A Coastal Scenic Evaluation System composed of 18 physical and 8 human parameters, was based on a five-scale attribute rating system.
- The importance of parameters and weights of the parameters were determined by public perception surveys carried out in Turkey, UK, Malta and Croatia.
- A mathematical model based on a fuzzy logic mathematics was utilized.
- Membership degree vs. attribute curves, were developed for the purpose of identification of the appropriate D (Evaluation index) criteria. These graphical presentations are also easy- to- understand tools for the fuzzy logic methodology.
- A Coastal Scenic Classification Curve was determined for all evaluated sites based upon calculated Evaluation Index values D.
- In the end, a five-class evaluation system for coastal scenery was developed that incorporated expert site evaluation and public perception.

The normality of D values of 86 sites controlled by normality tests such as normal plot and Kolmogorov- Smirnov has encouraged the methodology to be on the right way.

Although scenery is an invaluable asset in environmental point of view, coastal scenery is a less considered aspect in coastal management. With regard to coastal zone management, the fuzzy logic methodology may be used to evaluate adverse impacts of changes in the coastal environment. This methodology may be a tool for the preservation/conservation and the sustainable development of the coastal areas.

In this methodology, assessment histograms and weighted averages versus attributes that reflect strengths and weaknesses of evaluated sites may be used as management tools for coastal planning, conservation.

Scenery appreciation is highly subjective and it depends on a number of factors such as the national and cultural background, age, gender, education and training. In order to compare the weights of parameters and D values of 86 coastal sites in a cross cultural evaluation, public perception surveys in Turkey (previous study, BCR 2003), Malta, Croatia and UK (Southern down) were utilized and an additional public survey was carried in Çıralı, Turkey in Spring 2004. The sum of inquiries used in methodology was 485 in total.

Comparing D values of 86 sites for surveys in Croatia only, Malta only (total), Malta only (tourist), Malta only (local), Çıralı, Turkey (2004), UK (Southern down), Previous Study (BCR 2003) and grand total, no large deviations can be observed such that some of these deviations may change the class of sites to one class below only but for sites at the boundaries of classes.

The max difference between D values obtained in different surveys was 0.26 of Giant cause Way, Ireland and the minimum difference between D values was 0.04 of Magellan Foreland, Ireland. 28 of 86 sites changed classes with different surveys however D values were mostly at the boundaries.

Another important point in the methodology that was also affected by perception may change the D values significantly; that is the evaluation of expert/ trained group.

The perception of each individual is unique, and due to bias and variances in the visual perception and emotions/ feelings of the observer (expert/ trained group), and because the scoring process is within a limited time and space, the D value of a site may change from one group to another. The difference here would result not from the weights of parameters but from the attributes scored for each parameter. Especially attribute differences in the human parameters which have high weighted averages would change the D values more significantly than the physical parameters.

However, the potential biases and differences in different experts/ trainers may be reduced with clear, accurate and distinct definitions for each attributes of the parameters. Appendix A defines the parameters and illustrates attributes for each parameter with pictures. (Çakır, 2004)

Contribution to the previous studies on Coastal Scenic Assessment by Fuzzy Logic Methodology, a survey was carried out in Çıralı, Turkey with revised inquiry forms that contain importance of parameter table and demographical information such as age, sex etc.

The 29 parameters were reduced to 11 factors after factor analysis. As expected, human parameters and some physical parameters, cliff parameters, rocky shore platform parameters, beach face parameters were grouped in separate factors with few additional relevant parameters, they were named as natural usage factor, cliff features factor and rocky features and beach face features factor respectively. The other factors have only one member or less relevant parameters.

Within the scope of the study, some correlations between some of the demographical questions and some of the 11 factors were revealed. Some of the important results of this study can be summarized as:

- There was significant difference between native tourist and foreign tourist and local people for factor one (natural usage) where local people gave the most importance and on the other hand the native tourists gave the least importance. This may be explained by the fact that Çıralı is partly a natural conservation area and public awareness is high because of WWF- Turkey's project on Çıralı.

- There was significant difference between native tourist and foreign tourist for factor three (rocky features); between local and the other two for factor five (visual features). Foreign tourists gave significantly higher importance to rocky features than the others whereas local people gave significantly less importance to visual features than the others.

- For sex category (male, female), there was a significant difference between the two for factor 4 (cliff features) and factor 5 (visual features). Female respondents gave significantly more importance to visual features whereas male respondents gave more importance to cliff features.

- For education category (higher education, below higher education), there was no significant difference between the two for all factors. This may also be explained by the high public awareness that majority of below higher education is local people with high sensitivity to nature.

As an additional note, it may be said within the scope of this study that Çıralı is a unique place with local and tourist people with high awareness against environmental issues as well as alternative tourism such as ecotourism, nature and sea with less urbanization. This was also reflected in the statistical study.

One point in the public perception is that the coastal zone planners may use such public perception inquiries in the evaluation phase. The results of the perception surveys may be helpful in to determine the expectations and attitudes of native and foreign tourists towards a coastal area/ beach. Such an inquiry may let responsible parties such as government, local people, non governmental organizations consider tourists.

Another point is that, people (local or tourist) in a local area may seem to prefer a less natural beach or not to consider environmental issues, but that does not mean it would be considered as true but oppositely, the misleading understanding of such public may be used as a tool to improve the awareness against the environment and natural conservation and protection.

The inquiries considered in this study from several countries namely, Turkey, UK, Malta and Croatia indicated that natural and human affected parameters were given more importance than physical features commonly despite some variations which could be seen from D values comparison.

### 4.2. Recommendations

The results of the public survey in Çıralı in 2004 can be public announced to municipality of especially Kemer and others, local people of Çıralı and others that would benefit in a brochure , web site etc. A simple, comprehensible booklet that emphasizes on the important results of the survey, the reasons and suggestions may be quite worthy.

A study covering the perception differences in expert/ trained groups in coastal scenic assessment using fuzzy logic methodology may supply a worthy information for the methodology.

This revised inquiry or a more improved one may be applied at other countries and sites also. Such an effort may lead to a better understanding of the effect of public perception in this methodology.

Other coastal sites of Turkey and other countries if possible can be evaluated. This may lead to recognize the pros and cons of the human usage in these areas and classification of these sites among others.

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# APPENDIX A

## DEFINITIONS OF COASTAL SCENIC PARAMETERS

**Cliff:**

A high (>5m) area usually composed of rock with a > 45˚ slope.

- Banding : the cliff can be composed of various layers of rock e.g. alternate shale and limestone.
- Colour : Various colours can differentiate the bands.
- Faulting : Where earth movements have displaced the rock bands so that a line can be seen (fault line) which has shifted the layers on either side.
- Folding : Where the rocks have been under pressure and have folded to accommodate the pressure. Folding can be gentle of severe.
- Gullying : Rain can form gullies/rills along which cliff materials can be washed away.
- Indentation : The shape of the cliff edge. It could be straight or curved, the more curved, the more highly indented the cliff face.
- Scree : Accumulation of rock material at the foot of, or mantling cliff slopes.
- Tufa : A deposit of calcareous material on a limestone cliff face due to water seepage.
- Unconformity : represents the junction between two sets of rocks formed under different geological ages.

**Beach Face:**

The area between the water's edge and the back of beach. The latter could be a wall, dune, building etc.

**Rocky Shore Platform :**

An area of rock with a smaller than 45 degree slope. Formed by shore processes, especially wave action.

**Dunes:**

Foredune: The main dune adjacent to the beach. Frequently termed yellow dunes.

Secondary dune ridges: Located behind the foredune and representing old foredunes that have been colonised by plants. There may be many ridges and they are loosely called grey dunes.

**Valley and River Mouth:**

A valley is a V shaped landscape feature formed by flowing water. If no water is present, it is termed as a dry valley.

**Landform:**

Landform represents the distant land form type or in the side view of the coast.

**Tides:**

Tide is the alternating rise and fall in sea level with respect to the land, produced by the gravitational attraction of the sun. And more impoortantly, the moon.

**Coastal landscape features:**

**Peninsula/headland** is an area of land taht juts out into water which covers three sides.

A **bay** is the reverse of the above an area of water bordering land on three sides.

A **cave** is a hollow in a cliff face that can be caused by wave action, rock slippage, weathering, faulting etc. Where the cave breaks through a cliff headland it is called an arch.

A **lagoon** is a stretch of comparatively shallow salt/fresh water seperated from the sea by a shallow or exposed sandbank, coral reef, shingle beach or similar structure.

A **sandbank** is a mound of and located offshore which is exposed to the air. If completely submerged it is a sand bar.

A **stack** is steep, often vertical, sided column of rock in the sea formed as aresult of collapse of an arch (see cave above).

A **tombolo** is a deposition landform (usually sand or shingle) which connects an island to the shore.

A **delta** is a land usually a triangular in shape, formed by deposition of riverine sediment where a river enters the sea.

An **estuary** is an area of water bounded on one side by marine water and the other side by riverine input. It is the junction zone between salt/fresh water.

A **reef** is a degraded stack located at oir beneath sea level.

A **window** occur if cave(s) carve through a headland above the water line resulting a hole through the cliff.

**Vistas:**

It is related to far off views. For example a site could be enclosed on 4 sides, so no far off views can be seen. Alternatively it could be open on 1 or more sides. A far vista is where the foreground hill has another secondary background feature visible; e.g. a higher hill/mountain.

**Water colour & clarity:**

The colour of the ocean is determined by the interactions of incident light with substances or particles present in the water. The most significant constituents are free floating photosynthetic organisms (phytoplankton) and inorganic particulates. Clarity is related to whether sea bedcan be seen or not. Nutrient free waters tend to have the best clarity.

**Natural vegetation cover:**

It represents the flora of the coastal area vicinity, close enough to affect the beach and beach users visually and etc.

**Vegetation debris:**

Seaweed refers to the large marine algae that grow almost exclusively in the shallow waters at the edge of the world's oceans. Excessive seaweed accumulation in the coast represents unattractive views to beach users most of the time.

**Disturbance Factor:**

Relates to the noise factor on thr beach, e.g. playing of radios, jet skies, heavy traffic, etc.

**Litter:**

This is anthropogenic generated discards and includes building rubble. Examples are beer cans, sweet wrappers, plastic bags, sewage etc. Accumluations represent piles of these materials, Measurement surveys are usually carried out over a 100 m stretch of beach site

**Non-built environment:**

Rural areas, few buildings

**Skyline:**

The silhoutte of buildings on the skyline. They are in harmony with the environment if building lines are of the same height as the tree cover etc. Discord exists if they stand out from the surroundings.

**Sewage:**

Human/ animal waste products.

**Utilities:**

These include items such as power  lines, telegraph lines/ poles, roads, etc

**Access Type:**

Buffer zone. An area that divides two seperate entities. For example, a grass/tree lined street that seperates a beach from a coastal road.

**Built Environment:**

The urban environment. It could include heavy industries (steel works, plants, etc); light industries.

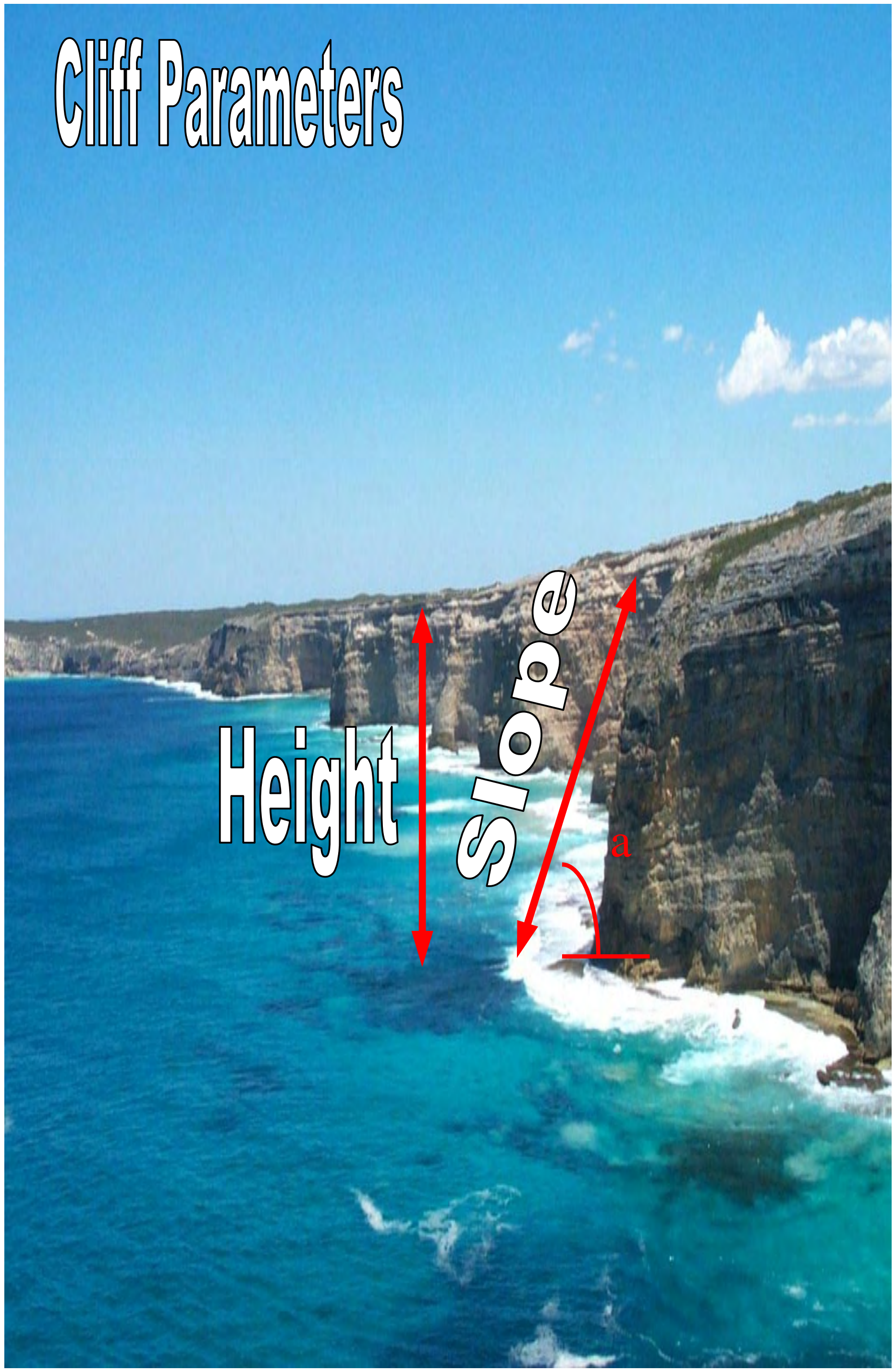



**Figure 8. Cliff Parameters; Height and Slope**

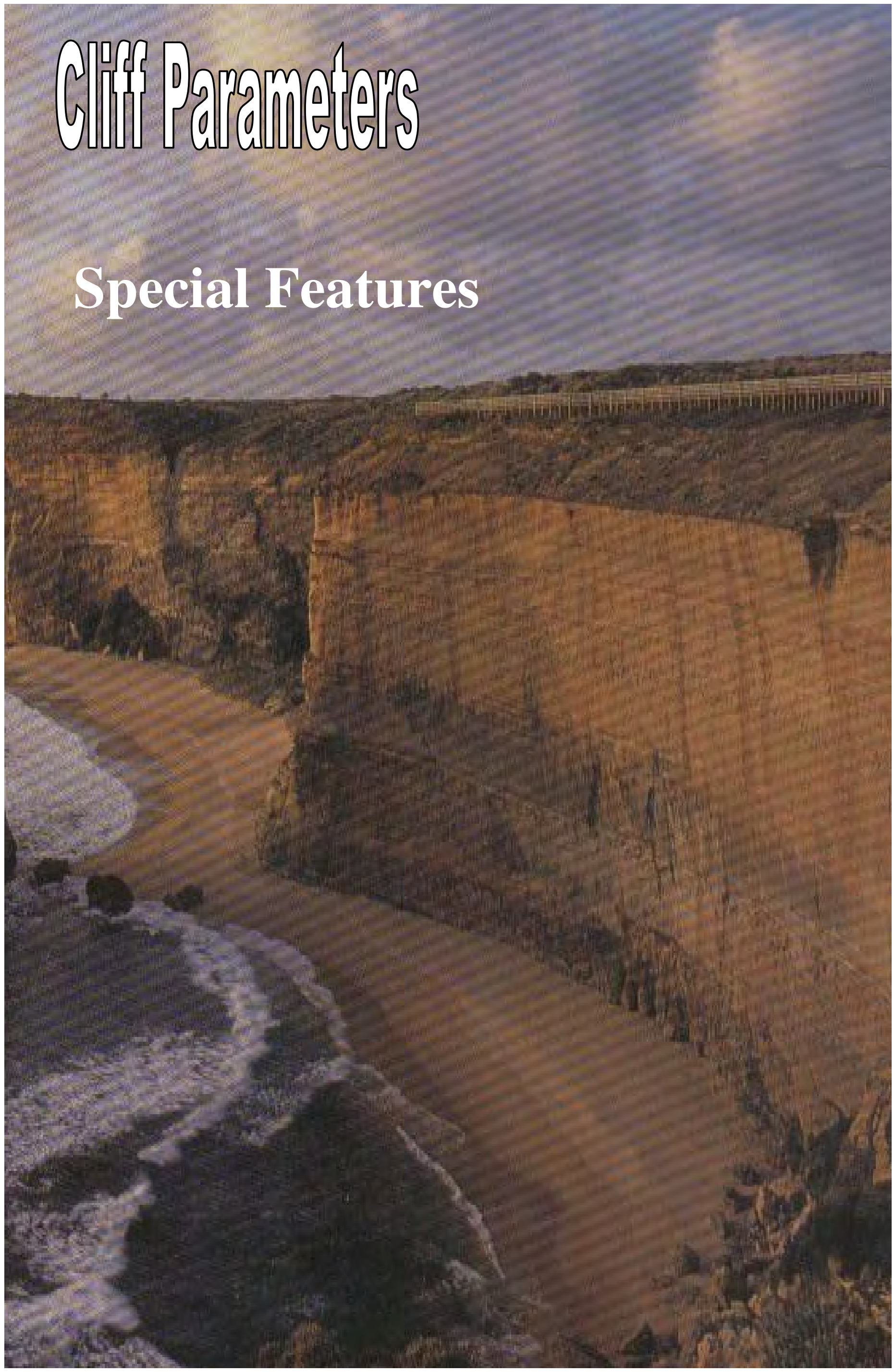



**Figure 9. Cliff Parameters; Special Features**

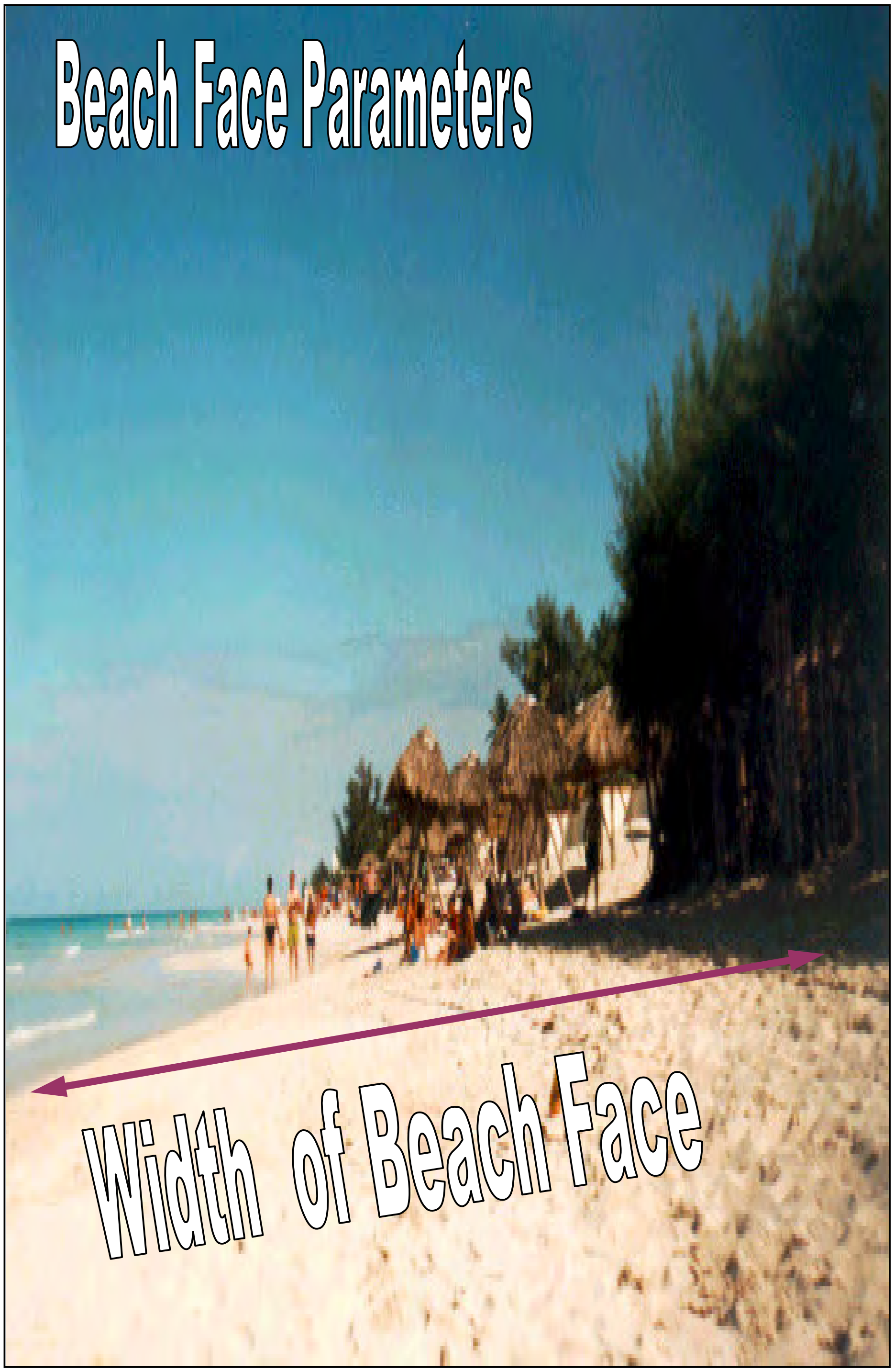



**Figure 10. Beach Face Parameters; Type, Width, Color**

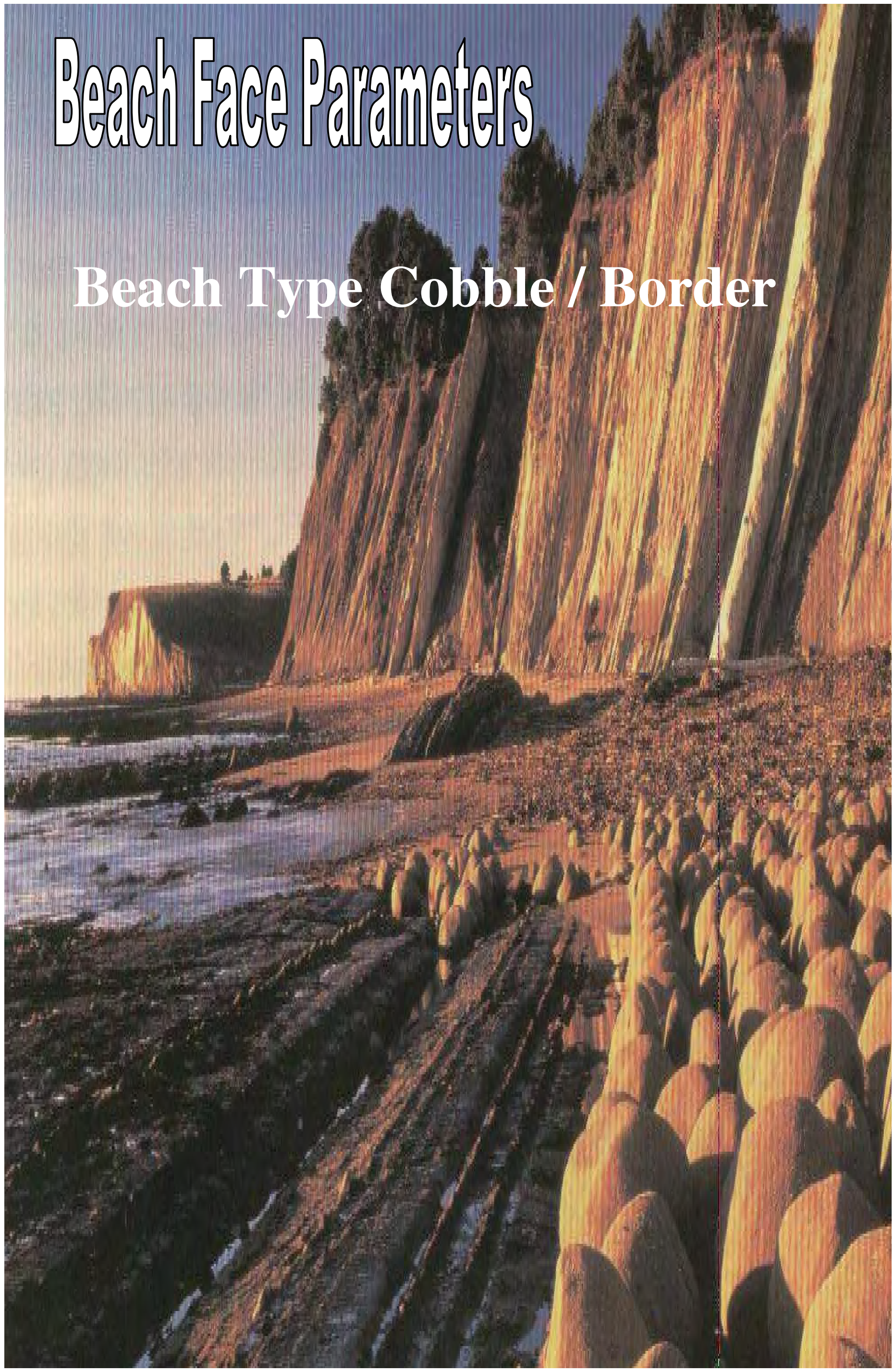



**Figure 11. Beach Face Parameters; Beach Type Cobble/Border**

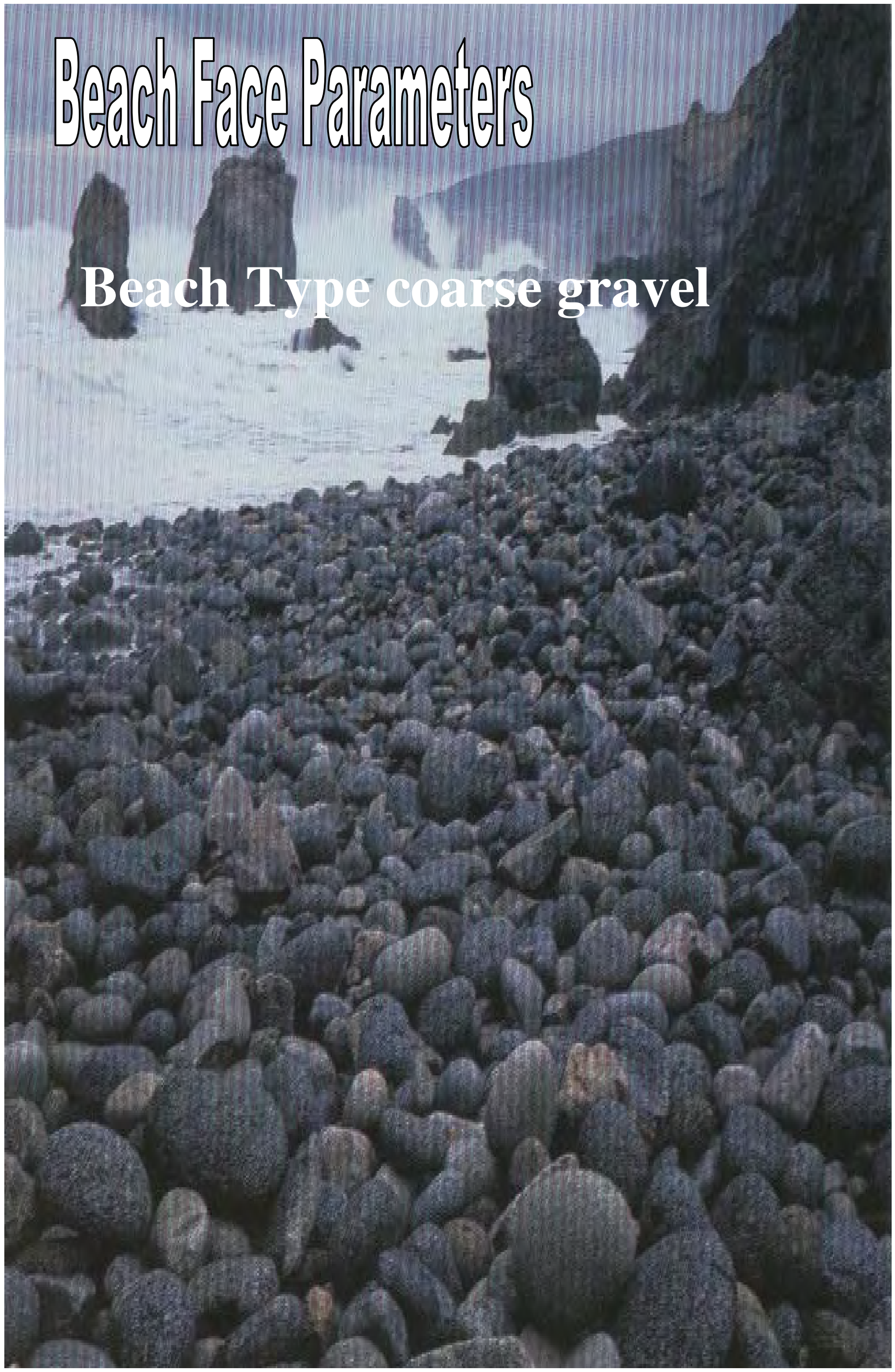



**Figure 12. Beach Face Parameters; Beach Type Coarse Gravel**

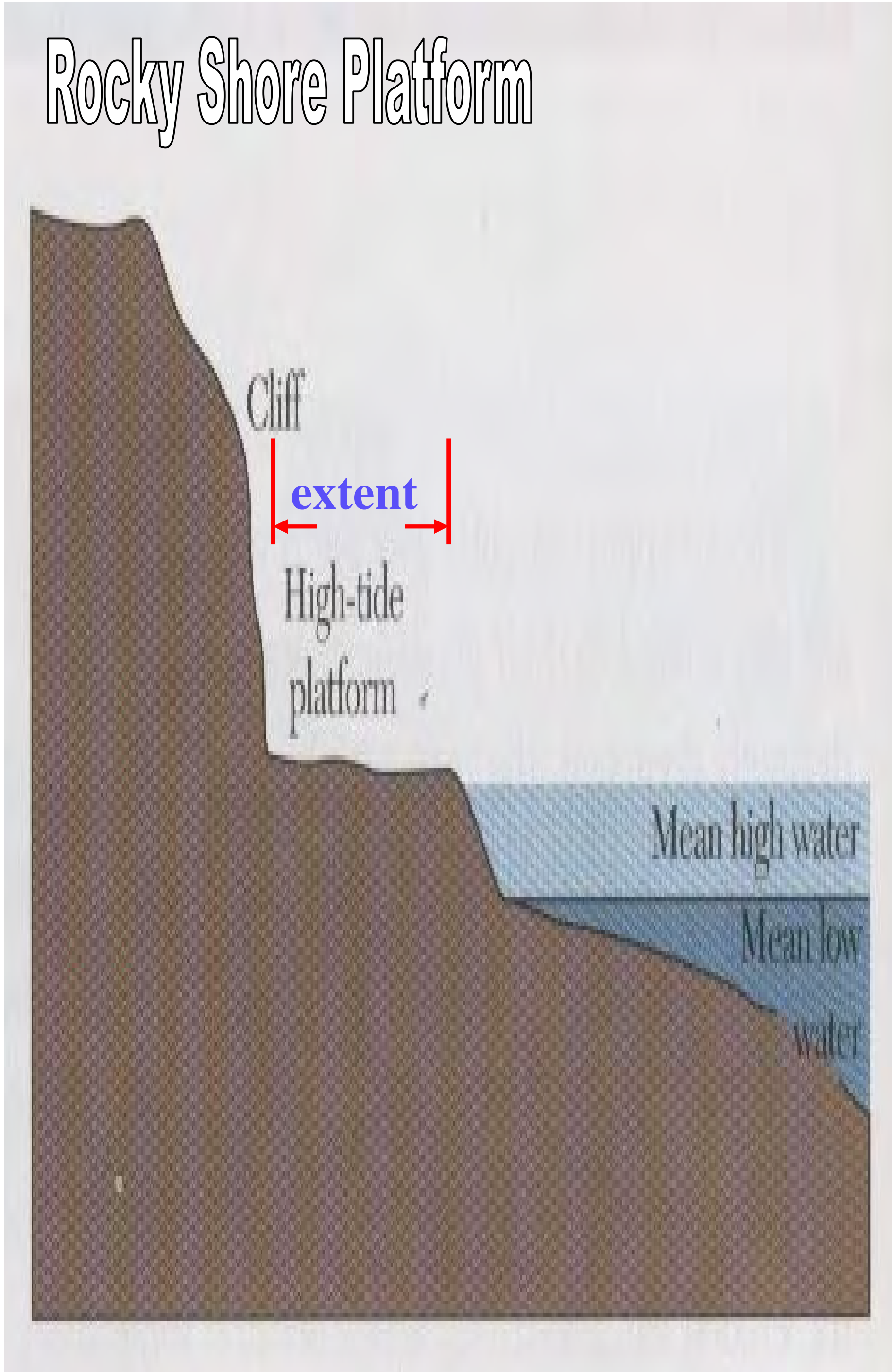



**Figure 13. Rocky Shore Platform Parameters; Extent**

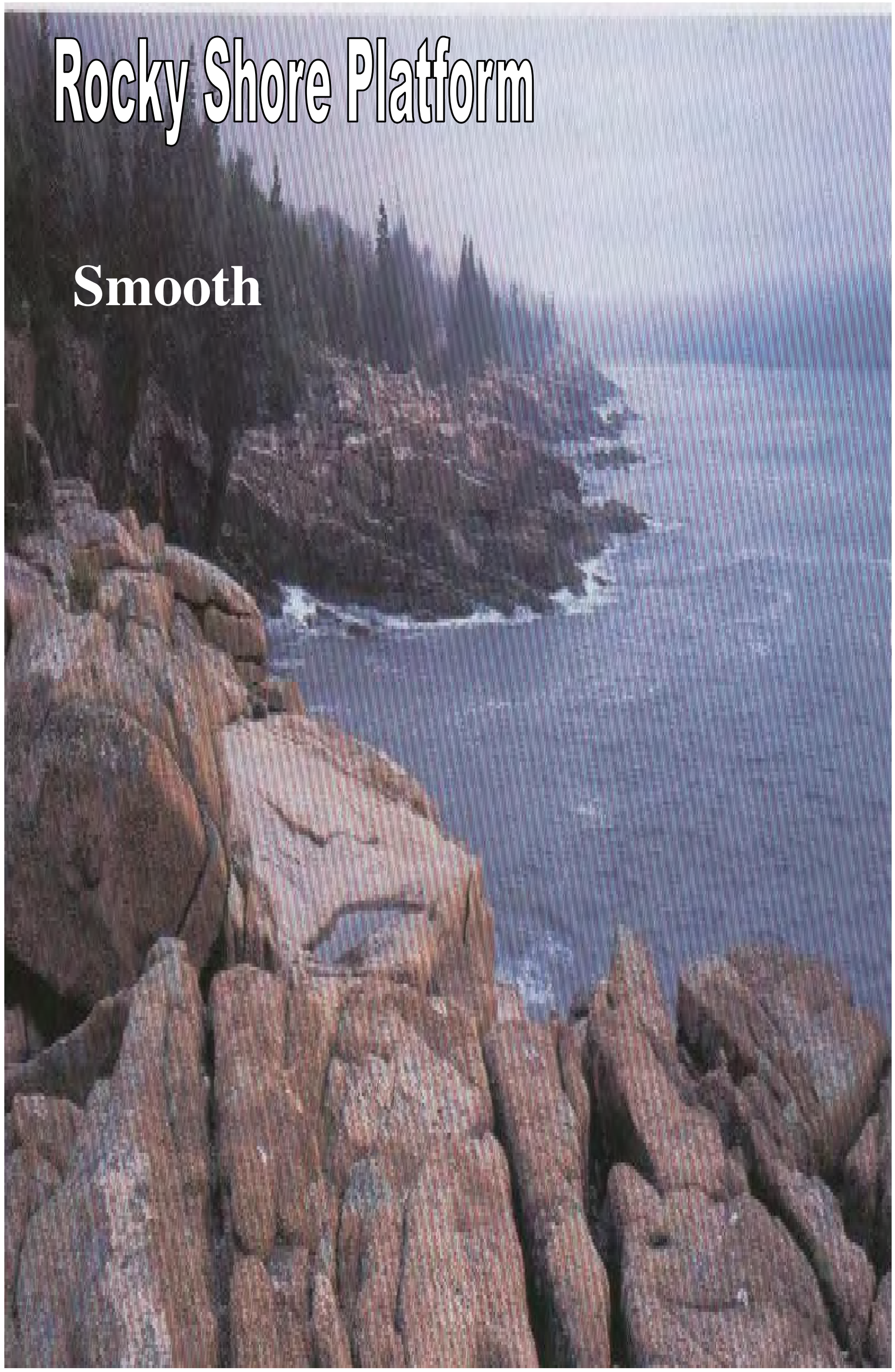



**Figure 14. Rocky Shore Platform Parameters; Smooth**

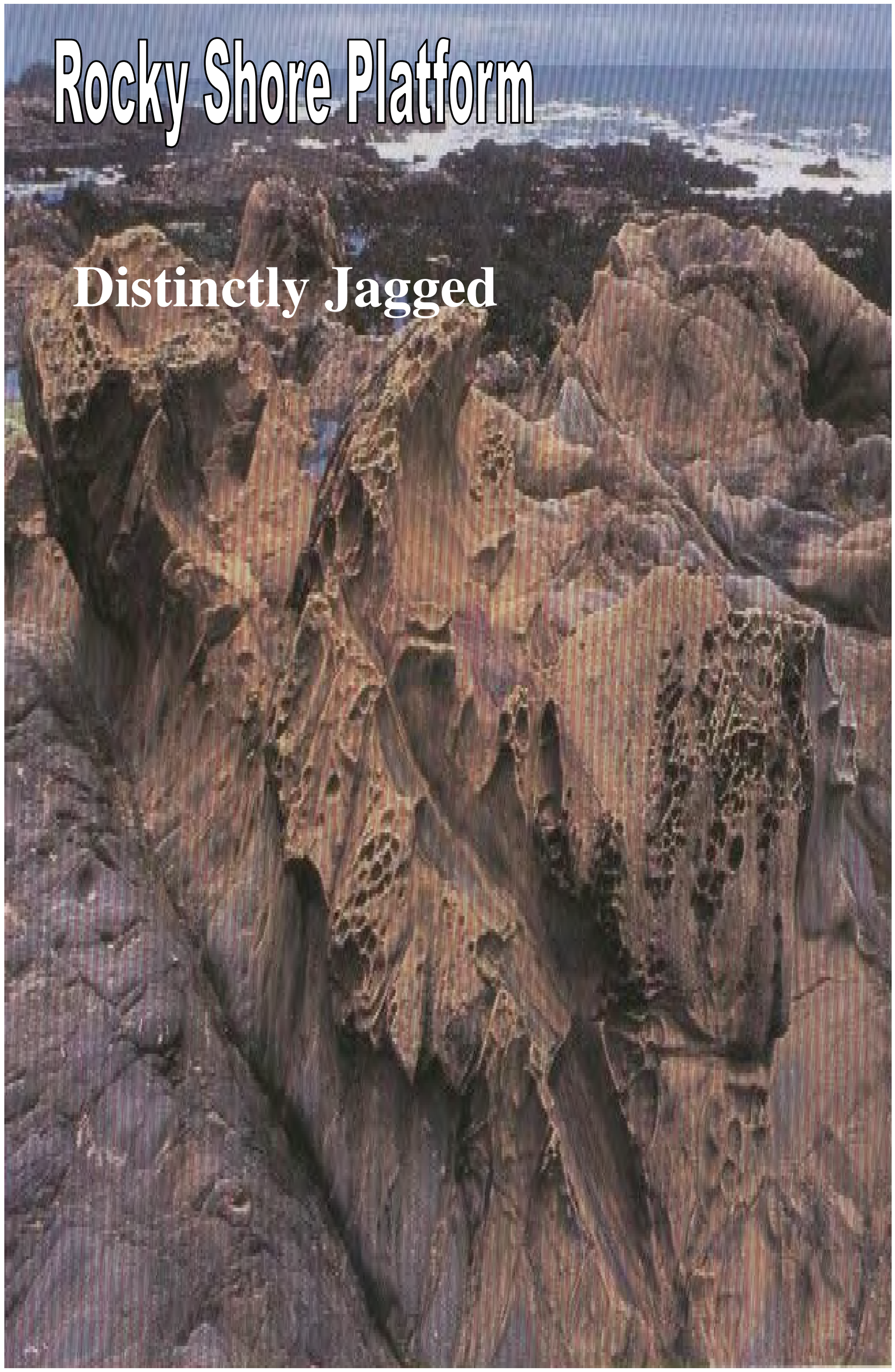



**Figure 15. Rocky Shore Platform Parameters; Distinctly Jagged**

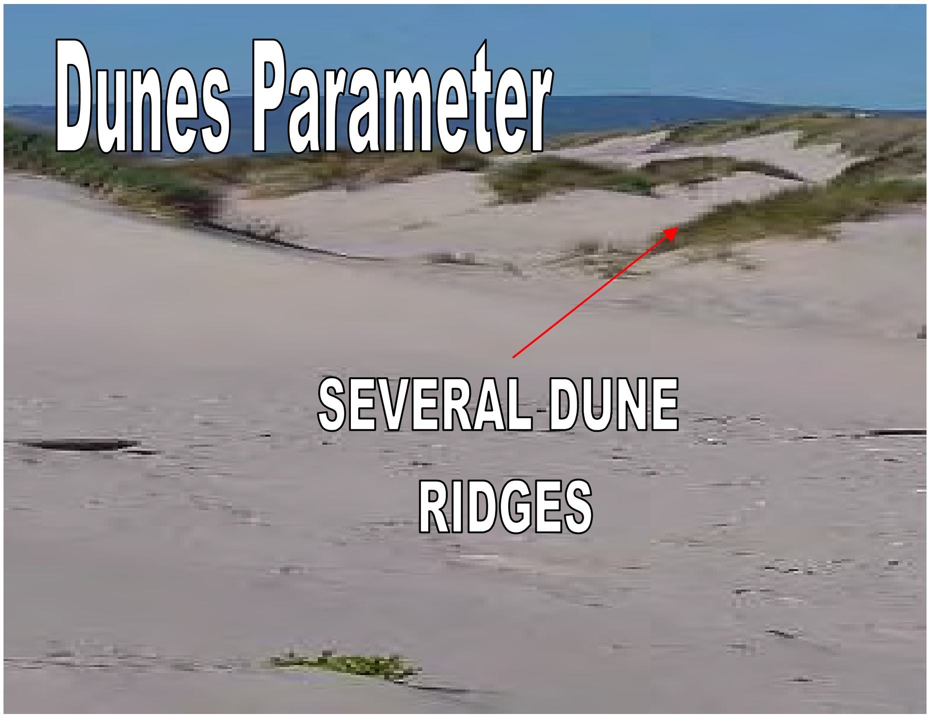
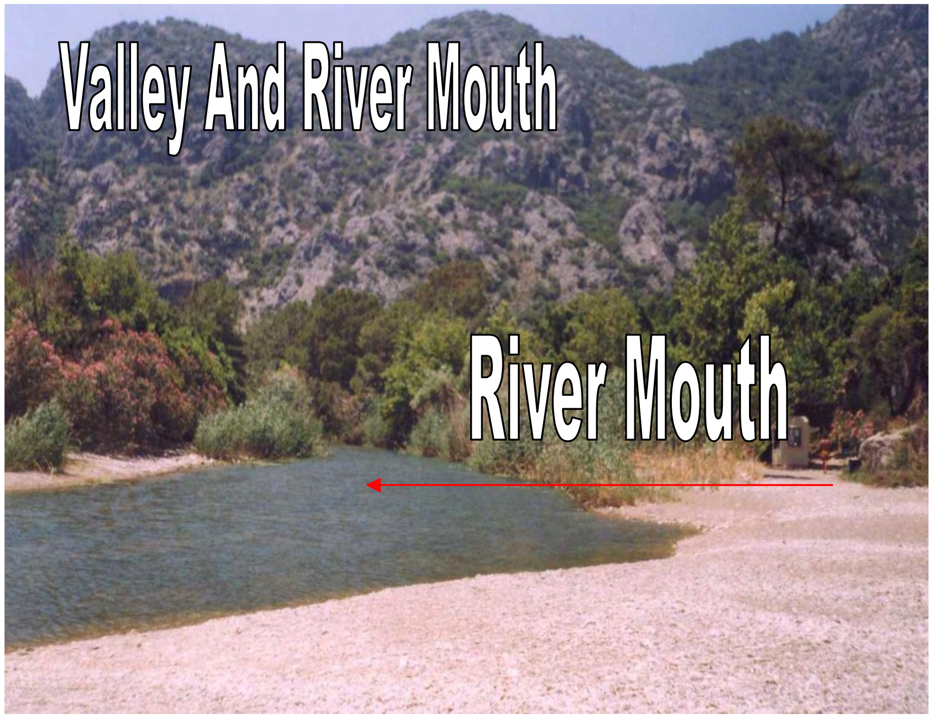




**Figure 16. Dunes Parameter; Several Dune Ridges and Foredune**



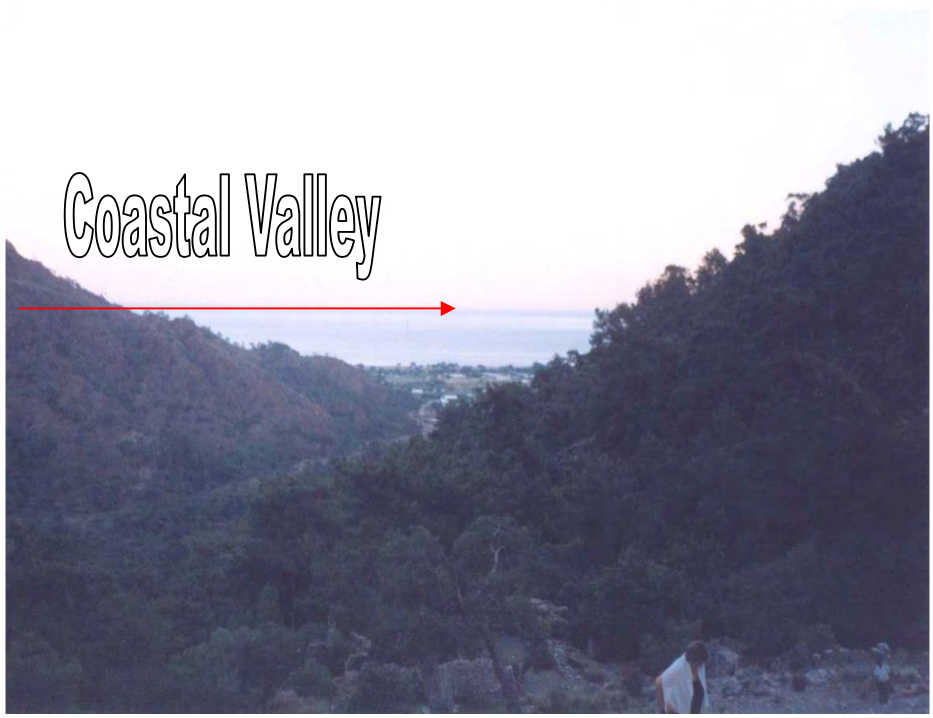




**Figure 17. Valley and River Mouth**

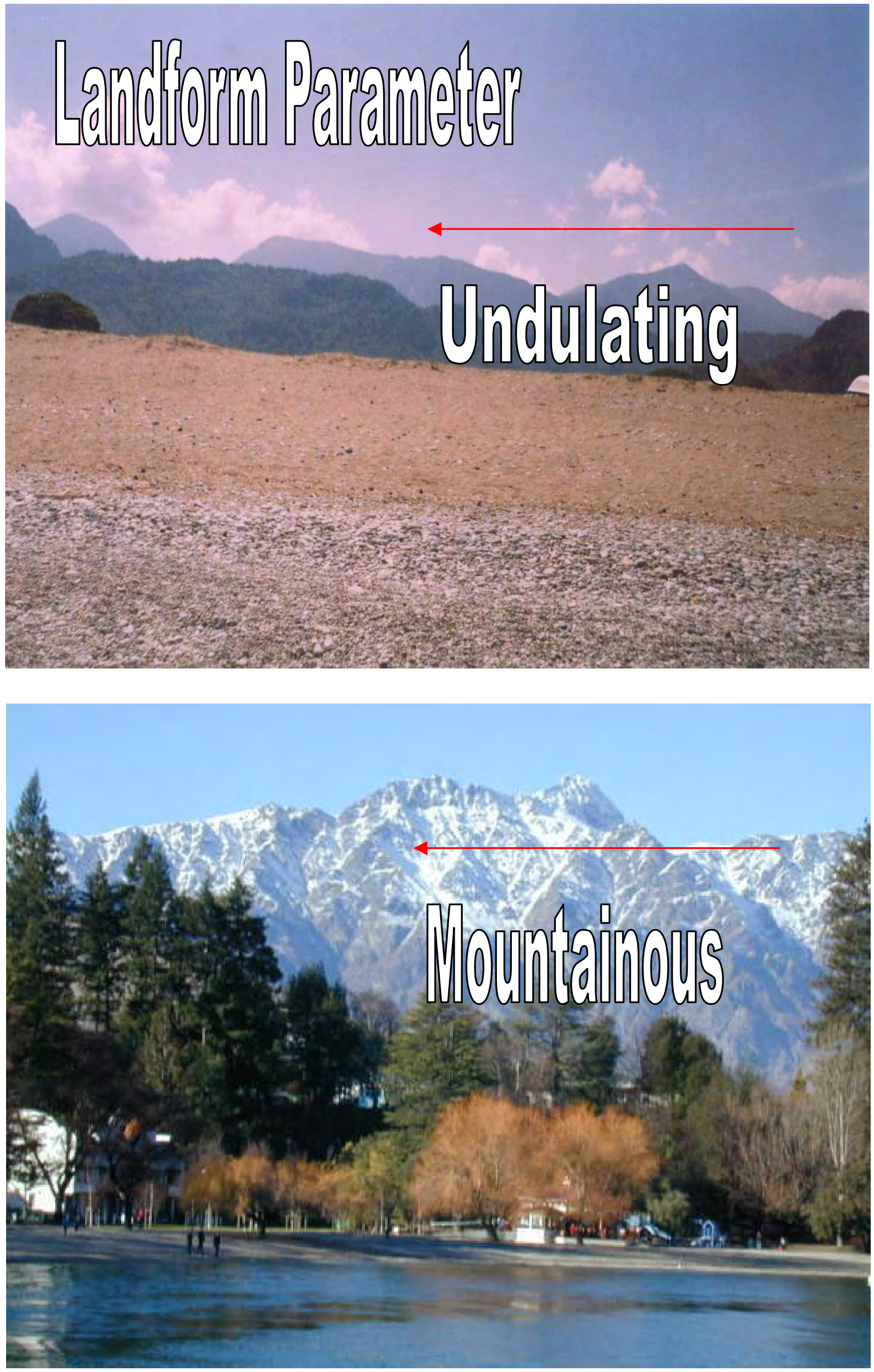



**Figure 18. Landform Parameter; Undulating, Mountainous**


**Figure 19. Tide Parameter; Views of the Same Place at Low Tide and High Tide**

# Coastal Landscape Features

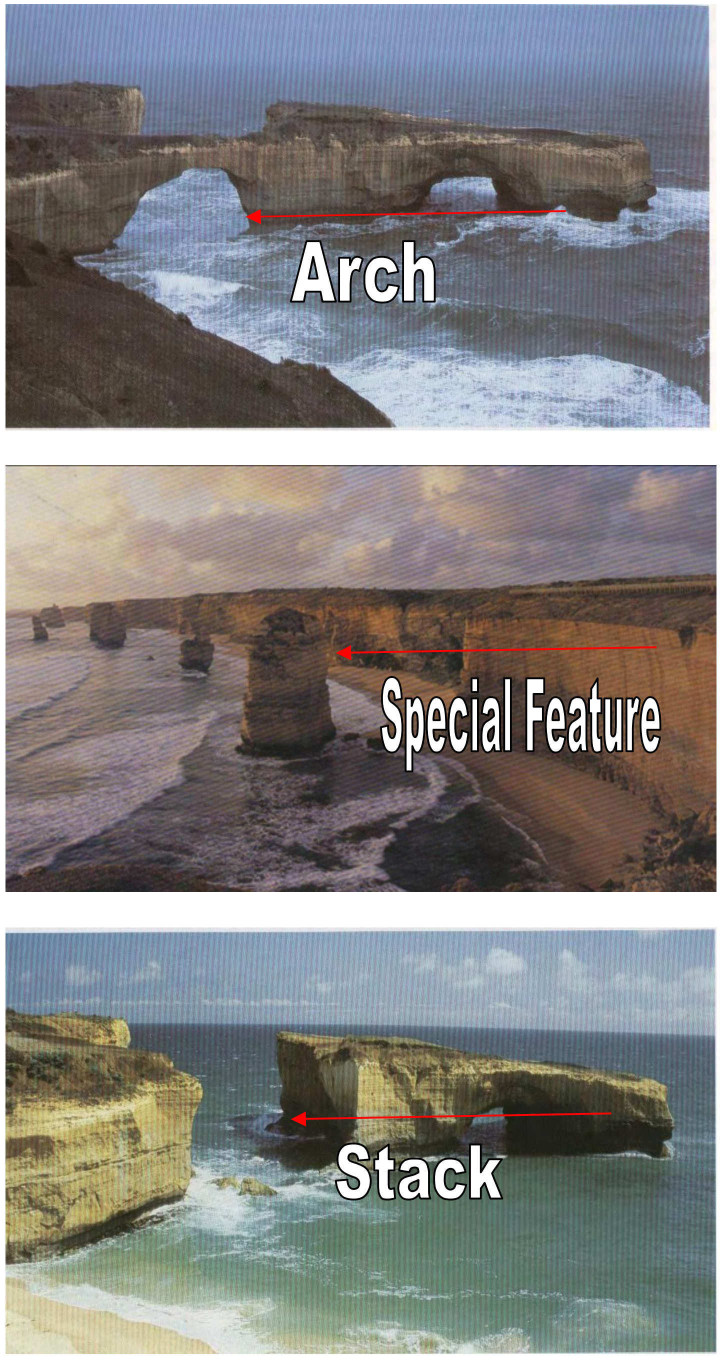



**Figure 20. Coastal Landscape Features; Arch, Special Feature, Stack**



**Figure 21. Coastal Landscape Features; Island, Cave**


**Figure 22. Vistas of Far Places; Open In One Side**

# Vegetation Cover Parameter

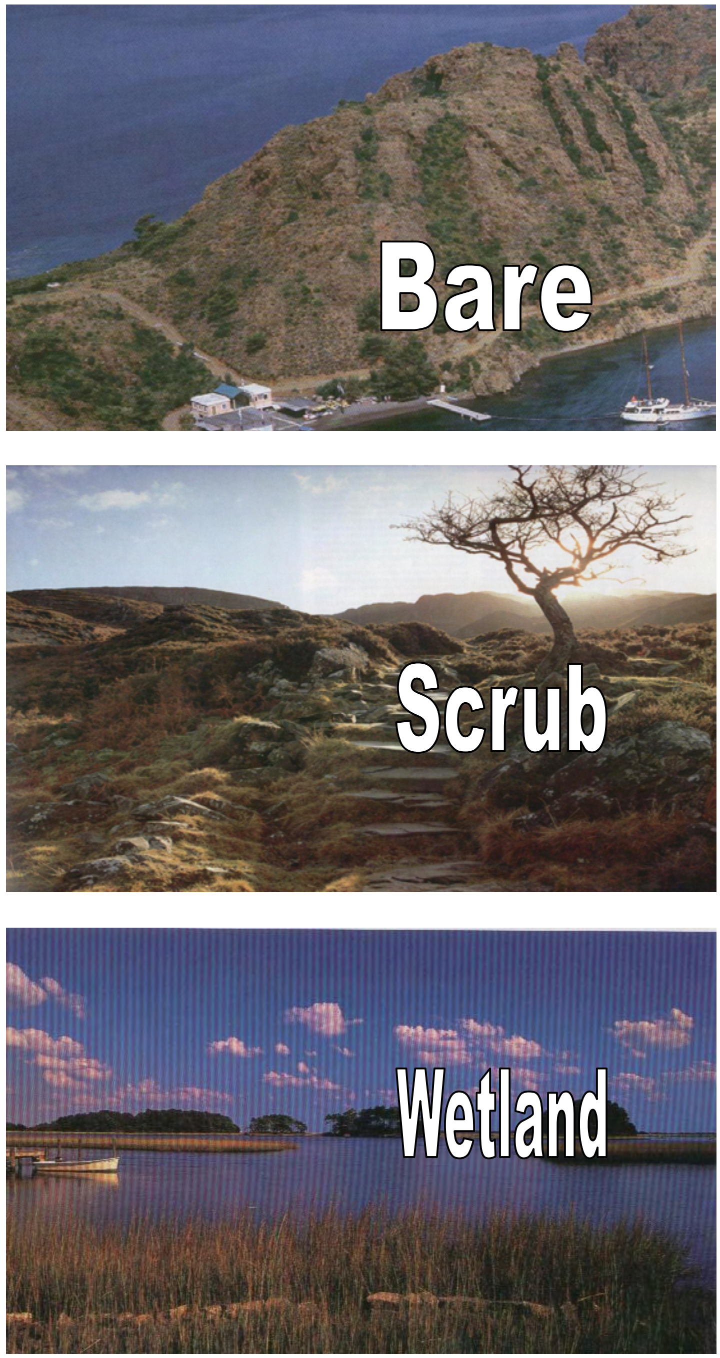



**Figure 23. Vegetation Cover Parameter; Bare, Scrub, Wetland**

# Vegetation Cover Parameters



**Figure 24. Vegetation Cover Parameter; Maquis, Forest**


**Figure 25. Vegetation Debris Parameter, Seaweed Banquet**


**Figure 26. Water Color and Clarity; Muddy Grey, Turquoise**

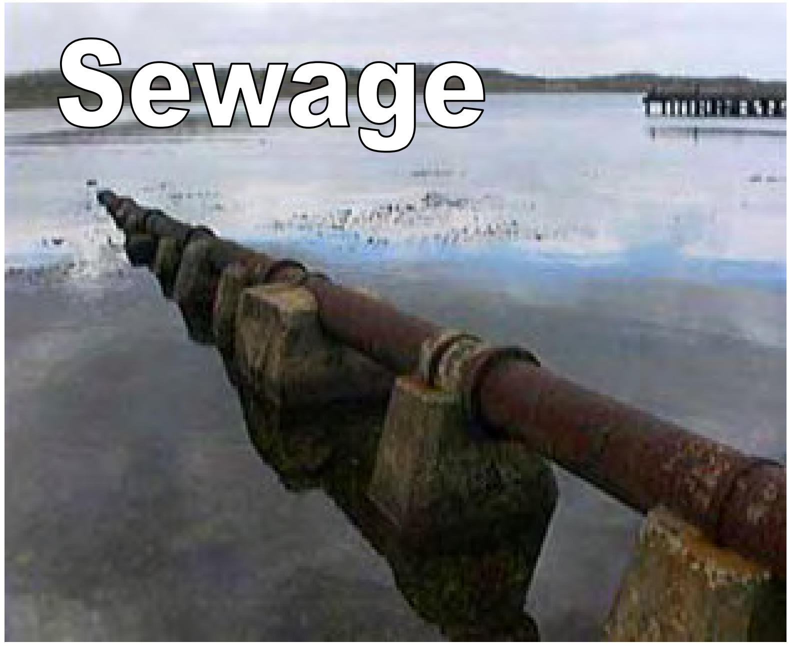



**Figure 27. Evidence of Sewage**


**Figure 28. Built Environment; Heavy Industry**


**Figure 29. Built Environment; Heavy Tourism and/or Urban, Light Tourism and/or Urban**

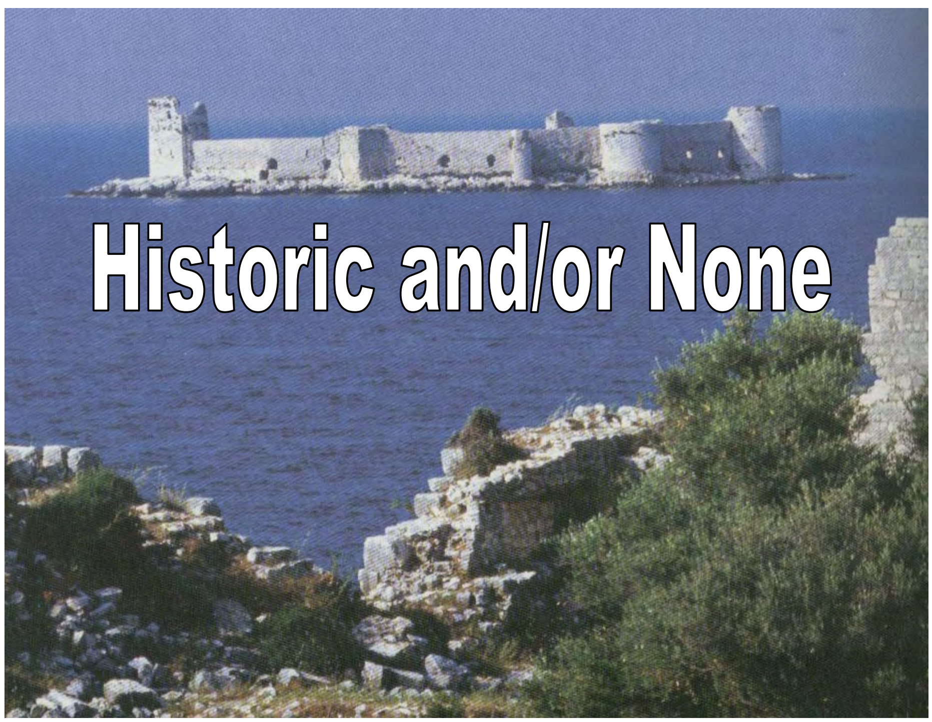




**Figure 30. Built Environment; Sensitive Tourism and/or Urban, Historic and/or None**


**Figure 31. Skyline**


**Figure 32. Litter**


**Figure 33. None-Built Environment**


**Figure 34. Noise Disturbance**


**Figure 35. Access Type; Parking Lot Visible From Coastal Area**


**Figure 36. Utilities**

# APPENDIX B

## MEMBERSHIP GRADING MATRICES

$M_1$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 2 | 0,0 | 1,0 | 0,3 | 0,0 | 0,0 |
| 3 | 0,0 | 0,3 | 1,0 | 0,3 | 0,0 |
| 4 | 0,0 | 0,0 | 0,5 | 1,0 | 0,5 |
| 5 | 0,0 | 0,0 | 0,0 | 0,5 | 1,0 |

$M_2$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 2 | 0,0 | 1,0 | 0,5 | 0,0 | 0,0 |
| 3 | 0,0 | 0,5 | 1,0 | 0,5 | 0,0 |
| 4 | 0,0 | 0,0 | 0,5 | 1,0 | 0,5 |
| 5 | 0,0 | 0,0 | 0,0 | 0,5 | 1,0 |

$M_3$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 2 | 0,0 | 1,0 | 0,3 | 0,0 | 0,0 |
| 3 | 0,0 | 0,0 | 1,0 | 0,3 | 0,0 |
| 4 | 0,0 | 0,0 | 0,0 | 1,0 | 0,3 |
| 5 | 0,0 | 0,0 | 0,0 | 0,0 | 1,0 |

$M_4$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 2 | 0,0 | 1,0 | 0,0 | 0,0 | 0,0 |
| 3 | 0,0 | 0,0 | 1,0 | 0,0 | 0,0 |
| 4 | 0,0 | 0,0 | 0,0 | 1,0 | 0,0 |
| 5 | 0,0 | 0,0 | 0,0 | 0,0 | 1,0 |

$M_5$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 2 | 0,0 | 1,0 | 0,0 | 0,0 | 0,0 |
| 3 | 0,0 | 0,2 | 1,0 | 0,2 | 0,0 |
| 4 | 0,0 | 0,0 | 0,2 | 1,0 | 0,6 |
| 5 | 0,0 | 0,0 | 0,0 | 0,6 | 1,0 |

$M_6$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 2 | 0,0 | 1,0 | 0,0 | 0,0 | 0,0 |
| 3 | 0,0 | 0,0 | 1,0 | 0,6 | 0,0 |
| 4 | 0,0 | 0,0 | 0,6 | 1,0 | 0,0 |
| 5 | 0,0 | 0,0 | 0,0 | 0,0 | 1,0 |

$M_7$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 2 | 0,0 | 1,0 | 0,5 | 0,0 | 0,0 |
| 3 | 0,0 | 0,5 | 1,0 | 0,5 | 0,0 |
| 4 | 0,0 | 0,0 | 0,5 | 1,0 | 0,5 |
| 5 | 0,0 | 0,0 | 0,0 | 0,2 | 1,0 |

$M_8$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 2 | 0,0 | 1,0 | 0,2 | 0,0 | 0,0 |
| 3 | 0,0 | 0,2 | 1,0 | 0,5 | 0,0 |
| 4 | 0,0 | 0,0 | 0,5 | 1,0 | 0,4 |
| 5 | 0,0 | 0,0 | 0,0 | 0,4 | 1,0 |

$M_9$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 2 | 0,0 | 1,0 | 0,1 | 0,0 | 0,0 |
| 3 | 0,0 | 0,1 | 1,0 | 0,6 | 0,0 |
| 4 | 0,0 | 0,0 | 0,6 | 1,0 | 0,5 |
| 5 | 0,0 | 0,0 | 0,0 | 0,5 | 1,0 |

$M_{10}$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 2 | 0,0 | 1,0 | 0,0 | 0,0 | 0,0 |
| 3 | 0,0 | 0,0 | 1,0 | 0,0 | 0,0 |
| 4 | 0,0 | 0,0 | 0,0 | 1,0 | 0,0 |
| 5 | 0,0 | 0,0 | 0,0 | 0,0 | 1,0 |

$M_{11}$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 2 | 0,0 | 1,0 | 0,0 | 0,0 | 0,0 |
| 3 | 0,0 | 0,0 | 1,0 | 0,0 | 0,0 |
| 4 | 0,0 | 0,0 | 0,0 | 1,0 | 0,1 |
| 5 | 0,0 | 0,0 | 0,0 | 0,1 | 1,0 |

$M_{12}$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,2 | 0,0 | 0,0 | 0,0 |
| 2 | 0,0 | 1,0 | 0,3 | 0,0 | 0,0 |
| 3 | 0,0 | 0,6 | 1,0 | 0,6 | 0,0 |
| 4 | 0,0 | 0,0 | 0,6 | 1,0 | 0,2 |
| 5 | 0,0 | 0,0 | 0,0 | 0,2 | 1,0 |

$M_{13}$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 2 | 0,0 | 1,0 | 0,0 | 0,0 | 0,0 |
| 3 | 0,0 | 0,0 | 1,0 | 0,0 | 0,0 |
| 4 | 0,0 | 0,0 | 0,0 | 1,0 | 0,0 |
| 5 | 0,0 | 0,0 | 0,0 | 0,0 | 1,0 |

$M_{14}$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,2 | 0,0 | 0,0 | 0,0 |
| 2 | 0,0 | 1,0 | 0,2 | 0,0 | 0,0 |
| 3 | 0,0 | 0,0 | 1,0 | 0,2 | 0,0 |
| 4 | 0,0 | 0,0 | 0,0 | 1,0 | 0,2 |
| 5 | 0,0 | 0,0 | 0,0 | 0,0 | 1,0 |

$M_{15}$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 2 | 0,0 | 1,0 | 0,0 | 0,0 | 0,0 |
| 3 | 0,0 | 0,0 | 1,0 | 0,0 | 0,0 |
| 4 | 0,0 | 0,0 | 0,0 | 1,0 | 0,3 |
| 5 | 0,0 | 0,0 | 0,0 | 0,3 | 1,0 |

$M_{16}$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,2 | 0,0 | 0,0 | 0,0 |
| 2 | 0,2 | 1,0 | 0,2 | 0,0 | 0,0 |
| 3 | 0,0 | 0,5 | 1,0 | 0,5 | 0,0 |
| 4 | 0,0 | 0,0 | 0,5 | 1,0 | 0,2 |
| 5 | 0,0 | 0,0 | 0,0 | 0,2 | 1,0 |

$M_{17}$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,2 | 0,0 | 0,0 | 0,0 |
| 2 | 0,2 | 1,0 | 0,2 | 0,1 | 0,0 |
| 3 | 0,0 | 0,2 | 1,0 | 0,2 | 0,0 |
| 4 | 0,0 | 0,0 | 0,2 | 1,0 | 0,2 |
| 5 | 0,0 | 0,0 | 0,0 | 0,2 | 1,0 |

$M_{18}$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,2 | 0,0 | 0,0 | 0,0 |
| 2 | 0,2 | 1,0 | 0,0 | 0,0 | 0,0 |
| 3 | 0,0 | 0,0 | 1,0 | 0,2 | 0,0 |
| 4 | 0,0 | 0,0 | 0,2 | 1,0 | 0,0 |
| 5 | 0,0 | 0,0 | 0,0 | 0,2 | 1,0 |

$M_{19}$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 2 | 0,2 | 1,0 | 0,0 | 0,2 | 0,0 |
| 3 | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 4 | 0,0 | 0,2 | 0,0 | 1,0 | 0,2 |
| 5 | 0,0 | 0,0 | 0,0 | 0,2 | 1,0 |

$M_{20}$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,2 | 0,0 | 0,0 | 0,0 |
| 2 | 0,2 | 1,0 | 0,2 | 0,0 | 0,0 |
| 3 | 0,0 | 0,2 | 1,0 | 0,2 | 0,0 |
| 4 | 0,0 | 0,0 | 0,2 | 1,0 | 0,2 |
| 5 | 0,0 | 0,0 | 0,0 | 0,2 | 1,0 |

$M_{21}$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,0 | 0,2 | 0,0 | 0,0 |
| 2 | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 3 | 0,3 | 0,0 | 1,0 | 0,0 | 0,1 |
| 4 | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 5 | 0,0 | 0,0 | 0,2 | 0,0 | 1,0 |

$M_{22}$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,0 | 0,2 | 0,0 | 0,0 |
| 2 | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 3 | 0,2 | 0,0 | 1,0 | 0,0 | 0,2 |
| 4 | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 5 | 0,0 | 0,0 | 0,2 | 0,0 | 1,0 |

$M_{23}$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 2 | 0,0 | 1,0 | 0,2 | 0,0 | 0,0 |
| 3 | 0,0 | 0,2 | 1,0 | 0,2 | 0,0 |
| 4 | 0,0 | 0,0 | 0,3 | 1,0 | 0,0 |
| 5 | 0,0 | 0,0 | 0,0 | 0,0 | 1,0 |

$M_{24}$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,2 | 0,0 | 0,0 | 0,0 |
| 2 | 0,2 | 1,0 | 0,0 | 0,2 | 0,0 |
| 3 | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 4 | 0,0 | 0,2 | 0,0 | 1,0 | 0,2 |
| 5 | 0,0 | 0,0 | 0,0 | 0,2 | 1,0 |

$M_{25}$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,4 | 0,0 | 0,0 | 0,0 |
| 2 | 0,4 | 1,0 | 0,2 | 0,0 | 0,0 |
| 3 | 0,0 | 0,4 | 1,0 | 0,2 | 0,0 |
| 4 | 0,0 | 0,0 | 0,4 | 1,0 | 0,0 |
| 5 | 0,0 | 0,0 | 0,0 | 0,0 | 1,0 |

$M_{26}$ =

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| 2 | 0,2 | 1,0 | 0,0 | 0,0 | 0,0 |
| 3 | 0,0 | 0,2 | 1,0 | 0,0 | 0,0 |
| 4 | 0,0 | 0,0 | 0,2 | 1,0 | 0,0 |
| 5 | 0,0 | 0,0 | 0,0 | 0,2 | 1,0 |

# APPENDIX C

## TABLES OF D VALUES AND WEIGHTS OF PARAMETERS ACCORDING TO VARIOUS PERCEPTION SURVEYS IN TURKEY, MALTA, UK, CROATIA

Table 27- Values of 86 Sites According To Various Perception Surveys In Turkey, Malta, UK , Croatia

C: Croatia ; Ç: Çıralı (2004) ; M: Malta ; S: Southerdown (UK) ; P : Previous Study (BCR 2003)

| No | Site | C | Ç | ÇMCS | M(local) | M(total) | M(touri.st) | S | ÇMCSP | P | Mean | Std. Dev. | Max. | Min. | Cof. Var. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Austenmeer beach, Austria | 0,71 | 0,59 | 0,62 | 0,6 | 0,59 | 0,58 | 0,45 | 0,62 | 0,62 | 0,598 | 0,067412 | 0,71 | 0,45 | 0,112772 |
| 2 | Strangford, Ireland | -0,52 | -0,54 | -0,56 | -0,54 | -0,6 | -0,62 | -0,7 | -0,56 | -0,56 | -0,578 | 0,055176 | -0,52 | -0,7 | -0,095498 |
| 3 | Ryan's daughter area, Ireland | 0,8 | 0,85 | 0,86 | 0,98 | 0,93 | 0,91 | 0,93 | 0,86 | 0,86 | 0,887 | 0,054772 | 0,98 | 0,8 | 0,061773 |
| 4 | Mather Cliffs, Ireland | 0,74 | 0,66 | 0,72 | 0,79 | 0,79 | 0,78 | 0,69 | 0,75 | 0,76 | 0,742 | 0,045216 | 0,79 | 0,66 | 0,060919 |
| 5 | Magellan Foreland-tip, Ireland | 0,52 | 0,55 | 0,5 | 0,37 | 0,41 | 0,43 | 0,45 | 0,54 | 0,56 | 0,481 | 0,068272 | 0,56 | 0,37 | 0,141906 |
| 6 | Magellan Foreland, Ireland | 0,3 | 0,29 | 0,28 | 0,26 | 0,28 | 0,3 | 0,3 | 0,29 | 0,3 | 0,289 | 0,013642 | 0,3 | 0,26 | 0,047223 |
| 7 | Giant Cause, Ireland | 0,85 | 0,75 | 0,76 | 0,76 | 0,71 | 0,68 | 0,6 | 0,81 | 0,86 | 0,753 | 0,082765 | 0,86 | 0,6 | 0,109865 |
| 8 | Dunbeg, Ireland | 0,91 | 0,82 | 0,87 | 0,97 | 0,93 | 0,9 | 0,81 | 0,89 | 0,9 | 0,889 | 0,05036 | 0,97 | 0,81 | 0,056655 |
| 9 | Burren Area, Ireland | 0,33 | 0,22 | 0,28 | 0,35 | 0,33 | 0,33 | 0,25 | 0,27 | 0,26 | 0,291 | 0,045123 | 0,35 | 0,22 | 0,155004 |
| 10 | Tojo Beach, Japan | 0,79 | 0,7 | 0,75 | 0,7 | 0,75 | 0,77 | 0,73 | 0,74 | 0,73 | 0,74 | 0,02958 | 0,79 | 0,7 | 0,039974 |
| 11 | Shirahama Beach, Japan | 0,53 | 0,43 | 0,46 | 0,46 | 0,46 | 0,46 | 0,44 | 0,46 | 0,46 | 0,462 | 0,027739 | 0,53 | 0,43 | 0,060012 |
| 12 | Irohzaki Lighthouse, Japan | 1,31 | 1,3 | 1,3 | 1,32 | 1,29 | 1,28 | 1,26 | 1,3 | 1,31 | 1,297 | 0,018028 | 1,32 | 1,26 | 0,013903 |
| 13 | Irita, Japan | 0,53 | 0,42 | 0,45 | 0,45 | 0,45 | 0,45 | 0,43 | 0,43 | 0,41 | 0,447 | 0,034641 | 0,53 | 0,41 | 0,077555 |
| 14 | Ebisu Beach, Japan | 1,11 | 1,11 | 1,1 | 1,15 | 1,1 | 1,08 | 1,07 | 1,12 | 1,13 | 1,108 | 0,024381 | 1,15 | 1,07 | 0,022009 |
| 15 | Xwieni Point, Malta | 0,13 | 0,01 | 0,04 | 0,07 | 0,04 | 0,02 | -0,01 | 0,06 | 0.08 | 0,045 | 0,043095 | 0,13 | -0,01 | 0,957657 |
| 16 | Xlendi Bay, Malta | 0,17 | 0,19 | 0,2 | 0,26 | 0,22 | 0,2 | 0,18 | 0,21 | 0.07 | 0,204 | 0,027742 | 0,26 | 0,17 | 0,136159 |
| 17 | White Towers, Malta | 0,2 | 0,08 | 0,12 | 0,14 | 0,13 | 0,12 | 0,02 | 0,11 | 0.10 | 0,115 | 0,05127 | 0,2 | 0,02 | 0,445823 |
| 18 | St. George's Bay, Malta | -0,63 | -0,69 | -0,68 | -0,69 | -0,69 | -0,7 | -0,7 | -0,66 | -0.64 | -0,68 | 0,023905 | -0,63 | -0,7 | -0,035154 |
| 19 | Ramla Bay, Malta | 0,13 | 0,09 | 0,12 | 0,12 | 0,15 | 0,17 | 0,05 | 0,12 | 0,12 | 0,119 | 0,034075 | 0,17 | 0,05 | 0,286613 |
| 20 | Mygar Ixxini, Malta | 0,32 | 0,3 | 0,32 | 0,36 | 0,31 | 0,32 | 0,31 | 0,33 | 0,33 | 0,322 | 0,017159 | 0,36 | 0,3 | 0,053253 |
| 21 | Mellieha, Malta | 0,37 | 0,35 | 0,34 | 0,28 | 0,3 | 0,31 | 0,27 | 0,36 | 0.37 | 0,323 | 0,037702 | 0,37 | 0,27 | 0,116905 |
| 22 | Marsalforn Bay, Malta | -0,31 | -0,39 | -0,36 | -0,31 | -0,34 | -0,36 | -0,39 | -0,37 | -0.37 | -0,354 | 0,031595 | -0,31 | -0,39 | -0,089313 |
| 23 | Manikata, Malta | 0,54 | 0,58 | 0,54 | 0,45 | 0,48 | 0,5 | 0,47 | 0,54 | 0.56 | 0,513 | 0,04432 | 0,58 | 0,45 | 0,086479 |
| 24 | Kercem Cliffs, Malta | 0,08 | 0,08 | 0,11 | 0,16 | 0,16 | 0,16 | 0,12 | 0,14 | 0.16 | 0,126 | 0,0342 | 0,16 | 0,08 | 0,270891 |
| 25 | Ghallis rocks coastline, Malta | -0,1 | -0,11 | -0,12 | -0,09 | -0,14 | -0,15 | -0,13 | -0,13 | -0.12 | -0,121 | 0,02031 | -0,09 | -0,15 | -0,167506 |
| 26 | Ghajn Tufieha, Malta | 0,48 | 0,57 | 0,54 | 0,54 | 0,53 | 0,53 | 0,48 | 0,56 | 0.56 | 0,529 | 0,033139 | 0,57 | 0,48 | 0,062675 |
| 27 | Fungus Rock, Malta | 0,78 | 0,67 | 0,73 | 0,81 | 0,78 | 0,76 | 0,71 | 0,76 | 0.77 | 0,75 | 0,044721 | 0,81 | 0,67 | 0,059628 |
| 28 | Dingli Cliffs, Malta | 0,96 | 0,89 | 0,95 | 1,08 | 1,05 | 1,04 | 1 | 0,95 | 0.97 | 0,99 | 0,063696 | 1,08 | 0,89 | 0,064339 |
| 29 | Calipso Cave, Malta | 0,56 | 0,41 | 0,46 | 0,48 | 0,48 | 0,49 | 0,36 | 0,46 | 0.48 | 0,463 | 0,058737 | 0,56 | 0,36 | 0,126998 |
| 30 | Bahar- IC Caghaq, Malta | -0,37 | -0,36 | -0,41 | -0,46 | -0,48 | -0,5 | -0,54 | -0,41 | -0.41 | -0,441 | 0,064017 | -0,36 | -0,54 | -0,145082 |
| 31 | Taylors Mistake, New Zealand | 0,91 | 0,92 | 0,91 | 0,87 | 0,89 | 0,89 | 0,89 | 0,91 | 0,91 | 0,9 | 0,015811 | 0,92 | 0,87 | 0,017568 |
| 32 | Sumner, New Zealand | 1,15 | 1,13 | 1,15 | 1,12 | 1,15 | 1,16 | 1,14 | 1,16 | 1,17 | 1,148 | 0,015635 | 1,17 | 1,12 | 0,013622 |
| 33 | Piha, New Zealand | 0,97 | 0,96 | 0,94 | 0,94 | 0,92 | 0,92 | 0,89 | 0,96 | 0,97 | 0,941 | 0,027131 | 0,97 | 0,89 | 0,028829 |
| 34 | Manley, New Zealand | 0,01 | -0,22 | -0,14 | -0,13 | -0,11 | -0,11 | -0,24 | -0,14 | -0,13 | -0,134 | 0,071259 | 0,01 | -0,24 | -0,530022 |
| 35 | Long reef, New Zealand | 1,44 | 1,37 | 1,4 | 1,36 | 1,39 | 1,39 | 1,33 | 1,39 | 1,39 | 1,384 | 0,030046 | 1,44 | 1,33 | 0,021703 |

Table 27- Values of 86 Sites According To Various Perception Surveys In Turkey, Malta, UK , Croatia (con.)

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **36** | Karekare, New Zealand | 1,22 | 1,34 | 1,29 | 1,26 | 1,26 | 1,26 | 1,29 | 1,29 | 1,29 | 1,278 | 0,033082 | 1,34 | 1,22 | 0,025891 |
| **37** | Dee why, New Zealand | 0,91 | 0,84 | 0,86 | 0,82 | 0,83 | 0,83 | 0,79 | 0,86 | 0,86 | 0,844 | 0,033582 | 0,91 | 0,79 | 0,039769 |
| **38** | Bondi, New Zealand | 0,39 | 0,21 | 0,28 | 0,29 | 0,32 | 0,34 | 0,2 | 0,27 | 0,27 | 0,286 | 0,059815 | 0,39 | 0,2 | 0,209467 |
| **39** | Tisan Tample Mersin, Turkey | 0,73 | 0,69 | 0,69 | 0,71 | 0,68 | 0,67 | 0,61 | 0,68 | 0.68 | 0,683 | 0,034949 | 0,73 | 0,61 | 0,051207 |
| **40** | Tisan Back Bay Mersin, Turkey | 0,82 | 0,85 | 0,83 | 0,84 | 0,82 | 0,81 | 0,79 | 0,93 | 0.83 | 0,836 | 0,042067 | 0,93 | 0,79 | 0,050304 |
| **41** | Tekirova South, Turkey | 0,26 | 0,18 | 0,19 | 0,16 | 0,16 | 0,17 | 0,1 | 0,18 | 0.18 | 0,175 | 0,044078 | 0,26 | 0,1 | 0,251873 |
| **42** | Tekirova North, Turkey | 0,21 | 0,21 | 0,19 | 0,12 | 0,14 | 0,16 | 0,12 | 0,19 | 0.19 | 0,168 | 0,037702 | 0,21 | 0,12 | 0,225086 |
| **43** | Phasalis Small Bay, Turkey | 1,13 | 1,09 | 1,08 | 1,05 | 1,05 | 1,05 | 0,99 | 1,08 | 0.91 | 1,065 | 0,040708 | 1,13 | 0,99 | 0,038223 |
| **44** | Phasalis Large Bay, Turkey | 0,94 | 0,9 | 0,9 | 0,83 | 0,86 | 0,87 | 0,83 | 0,91 | 1,08 | 0,902 | 0,076121 | 1,08 | 0,83 | 0,084371 |
| **45** | Lara Beach, Turkey | -0,16 | -0,35 | -0,28 | -0,32 | -0,27 | -0,25 | -0,36 | -0,29 | -0.28 | -0,285 | 0,063471 | -0,16 | -0,36 | -0,222705 |
| **46** | Konyaaltı West, Turkey | 0,11 | 0,06 | 0,09 | 0,08 | 0,12 | 0,14 | 0,13 | 0,1 | 0.10 | 0,104 | 0,026693 | 0,14 | 0,06 | 0,257279 |
| **47** | Konyaaltı Middle, Turkey | 0,16 | 0 | 0,05 | 0,02 | 0,06 | 0,09 | 0,02 | 0,04 | 0.04 | 0,055 | 0,050709 | 0,16 | 0 | 0,921986 |
| **48** | Konyaaltı East, Antalya, Turkey | 0,19 | 0,04 | 0,09 | 0,06 | 0,1 | 0,13 | 0,07 | 0,09 | 0.09 | 0,096 | 0,046579 | 0,19 | 0,04 | 0,483942 |
| **49** | Kızkalesi, Mersin, Turkey | -0,62 | -0,63 | -0,6 | -0,6 | -0,57 | -0,56 | -0,64 | -0,59 | -0.58 | -0,601 | 0,027999 | -0,56 | -0,64 | -0,046568 |
| **50** | Kemer, Turkey | 0,19 | 0,12 | 0,12 | 0,04 | 0,08 | 0,1 | 0,03 | 0,11 | 0,11 | 0,1 | 0,047434 | 0,19 | 0,03 | 0,474342 |
| **51** | Karaburun Akyar, Mersin, Turkey | 0,66 | 0,68 | 0,64 | 0,6 | 0,58 | 0,56 | 0,6 | 0,66 | 0.67 | 0,623 | 0,043342 | 0,68 | 0,56 | 0,069626 |
| **52** | Göksu Hurma, Mersin, Turkey | 0,6 | 0,55 | 0,59 | 0,64 | 0,63 | 0,63 | 0,6 | 0,6 | 0.61 | 0,605 | 0,028785 | 0,64 | 0,55 | 0,047578 |
| **53** | Çıralı Midsection, Turkey | 1,3 | 1,33 | 1,31 | 1,28 | 1,27 | 1,27 | 1,21 | 1,31 | 1,31 | 1,288 | 0,035629 | 1,33 | 1,21 | 0,027667 |
| **54** | Çıralı Karaburun, Turkey | 1,26 | 1,26 | 1,24 | 1,23 | 1,22 | 1,22 | 1,17 | 1,26 | 1,26 | 1,236 | 0,030046 | 1,26 | 1,17 | 0,024318 |
| **55** | Antalya Waterfalls, Turkey | 0 | -0,1 | 0 | 0,05 | 0,05 | 0,04 | -0,08 | -0,01 | -0.01 | -0,006 | 0,057056 | 0,05 | -0,1 | -9,128918 |
| **56** | Antalya Old Harbour, Turkey | 0,17 | 0,17 | 0,17 | 0,23 | 0,21 | 0,2 | 0,25 | 0,19 | 0.19 | 0,199 | 0,02997 | 0,25 | 0,17 | 0,150794 |
| **57** | Antalya Lara barınak, Turkey | -0,1 | -0,23 | -0,14 | -0,05 | -0,05 | -0,06 | -0,17 | -0,15 | -0.16 | -0,119 | 0,065124 | -0,05 | -0,23 | -0,548408 |
| **58** | Antalya Dedeman Otel, Turkey | -0,16 | -0,22 | -0,22 | -0,23 | -0,26 | -0,28 | -0,32 | -0,22 | -0.21 | -0,239 | 0,04794 | -0,16 | -0,32 | -0,200795 |
| **59** | Alata West, Mersin, Turkey | 0,34 | 0,33 | 0,32 | 0,23 | 0,26 | 0,28 | 0,24 | 0,31 | 0.31 | 0,289 | 0,042237 | 0,34 | 0,23 | 0,146274 |
| **60** | Alata Mid section, Mersin, Turkey | 0,33 | 0,31 | 0,3 | 0,21 | 0,24 | 0,26 | 0,21 | 0,29 | 0.29 | 0,269 | 0,045806 | 0,33 | 0,21 | 0,170442 |
| **61** | Alata East, Turkey | 0,12 | 0,07 | 0,08 | 0,03 | 0,06 | 0,07 | -0,03 | 0,07 | 0.07 | 0,059 | 0,043569 | 0,12 | -0,03 | 0,741592 |
| **62** | Wisemans Bridge,UK | 0,37 | 0,29 | 0,31 | 0,28 | 0,26 | 0,24 | 0,25 | 0,33 | 0.34 | 0,291 | 0,043895 | 0,37 | 0,24 | 0,150713 |
| **63** | Whitesands, UK | 0,7 | 0,6 | 0,66 | 0,7 | 0,7 | 0,7 | 0,62 | 0,67 | 0.68 | 0,669 | 0,039799 | 0,7 | 0,6 | 0,059512 |
| **64** | Tenby S, UK | 0,53 | 0,54 | 0,56 | 0,57 | 0,59 | 0,6 | 0,61 | 0,57 | 0.57 | 0,571 | 0,027999 | 0,61 | 0,53 | 0,049013 |
| **65** | Tenby N, UK | 0,24 | 0,24 | 0,25 | 0,25 | 0,26 | 0,27 | 0,21 | 0,26 | 0.26 | 0,248 | 0,018323 | 0,27 | 0,21 | 0,07403 |
| **66** | Stgovans, UK | 0,69 | 0,59 | 0,65 | 0,7 | 0,7 | 0,68 | 0,57 | 0,67 | 0.69 | 0,656 | 0,050125 | 0,7 | 0,57 | 0,076381 |
| **67** | Southerdown, UK | 0,48 | 0,48 | 0,49 | 0,53 | 0,52 | 0,51 | 0,48 | 0,52 | 0,54 | 0,506 | 0,023511 | 0,54 | 0,48 | 0,046506 |
| **68** | Seamans Bridge, UK | 0,39 | 0,3 | 0,32 | 0,29 | 0,29 | 0,29 | 0,29 | 0,35 | 0,37 | 0,321 | 0,039193 | 0,39 | 0,29 | 0,122055 |
| **69** | Saundersfoot, UK | 0,16 | 0,11 | 0,11 | 0,02 | 0,02 | 0,02 | 0 | 0,13 | 0.15 | 0,071 | 0,062436 | 0,16 | 0 | 0,87629 |
| **70** | Saundersfoot- west, UK | 0,14 | 0,14 | 0,09 | 0 | 0,02 | 0,02 | 0,02 | 0,12 | 0,14 | 0,077 | 0,060828 | 0,14 | 0 | 0,793404 |
| **71** | Porthcawl, UK | 0,03 | -0,02 | 0,01 | -0,02 | 0,02 | 0,04 | -0,04 | 0,02 | 0.02 | 0,005 | 0,028284 | 0,04 | -0,04 | 5,656854 |
| **72** | Poppit, UK | 0,95 | 0,92 | 0,93 | 0,89 | 0,9 | 0,9 | 0,88 | 0,91 | 0.91 | 0,91 | 0,022678 | 0,95 | 0,88 | 0,024921 |
| **73** | Ogmore, UK | -0,03 | 0,04 | 0,04 | 0,04 | 0,06 | 0,07 | 0,05 | 0,03 | 0.03 | 0,038 | 0,030119 | 0,07 | -0,03 | 0,803168 |
| **74** | Newgale, UK | 0,67 | 0,62 | 0,66 | 0,7 | 0,68 | 0,68 | 0,6 | 0,66 | 0.66 | 0,659 | 0,033139 | 0,7 | 0,6 | 0,050306 |
| **75** | Nash, UK | 0,73 | 0,63 | 0,69 | 0,77 | 0,75 | 0,74 | 0,63 | 0,72 | 0.74 | 0,708 | 0,053117 | 0,77 | 0,63 | 0,075077 |
| **76** | llanwit, UK | 0,06 | 0,02 | 0,02 | -0,04 | -0,02 | -0,01 | -0,09 | 0,03 | 0.04 | -0,004 | 0,046885 | 0,06 | -0,09 | -12,5027 |
| **77** | Little Haven, UK | 1,02 | 0,94 | 0,96 | 0,94 | 0,93 | 0,93 | 0,85 | 0,99 | 1.00 | 0,945 | 0,049857 | 1,02 | 0,85 | 0,052759 |
| **78** | Fresh water, UK | 0,46 | 0,39 | 0,44 | 0,44 | 0,47 | 0,48 | 0,44 | 0,45 | 0.46 | 0,446 | 0,027223 | 0,48 | 0,39 | 0,061003 |
| **79** | Broadhaven, UK | 0,38 | 0,25 | 0,31 | 0,37 | 0,35 | 0,34 | 0,21 | 0,33 | 0.34 | 0,318 | 0,059221 | 0,38 | 0,21 | 0,186523 |
| **80** | Blue Lagoon, UK | 0,43 | 0,37 | 0,4 | 0,42 | 0,42 | 0,42 | 0,38 | 0,43 | 0.45 | 0,409 | 0,022952 | 0,43 | 0,37 | 0,056151 |
| **81** | Angle, UK | 0,36 | 0,28 | 0,32 | 0,3 | 0,34 | 0,36 | 0,27 | 0,32 | 0.33 | 0,319 | 0,033991 | 0,36 | 0,27 | 0,106637 |

Table 27- Values of 86 Sites According To Various Perception Surveys In Turkey, Malta, UK , Croatia (con.)

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **82** | Amroth, UK | -0,11 | -0,12 | -0,12 | -0,14 | -0,14 | -0,14 | -0,16 | -0,1 | -0.08 | -0,129 | 0,019594 | -0,1 | -0,16 | -0,152187 |
| **83** | Sagg Main, USA | 1,13 | 1,1 | 1,11 | 1,01 | 1,08 | 1,1 | 1,04 | 1,1 | 1,1 | 1,086 | 0,037454 | 1,13 | 1,01 | 0,034502 |
| **84** | Montauk Point, USA | 0,52 | 0,42 | 0,46 | 0,36 | 0,4 | 0,42 | 0,37 | 0,49 | 0,5 | 0,438 | 0,057615 | 0,52 | 0,36 | 0,131607 |
| **85** | Haven Beach, USA | 0,8 | 0,69 | 0,7 | 0,67 | 0,68 | 0,68 | 0,56 | 0,71 | 0,71 | 0,689 | 0,061734 | 0,8 | 0,56 | 0,089614 |
| **86** | Alki Beach, USA | 0,22 | 0,19 | 0,17 | 0,17 | 0,19 | 0,19 | 0,14 | 0,19 | 0,2 | 0,184 | 0,022423 | 0,22 | 0,14 | 0,121569 |

**C: CROTIA ; Ç: ÇIRALI (2004) ; M: MALTA ; S: SOUTHERNDOWN (UK) ; P : PREVIOUS STUDY (BCR 2003)**

Table 28- Weights of Parameters According To Perception Surveys in Turkey, Malta, UK, Croatia

| No | Parameter | C | Ç | ÇMCS | M(total) | M(local) | M (tourist) | S | ÇMCSP | P | Mean | Std. D. | Cof.Var. | Max | Min |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Cliff Height | 0,0112 | 0,0155 | 0,0178 | 0,0268 | 0,0259 | 0,0271 | 0,0162 | 0,0186 | 0,0191 | 0,0198 | 0,0056 | 0,2826 | 0,0271 | 0,0112 |
| 2 | Cliff Slope | 0,0138 | 0,0074 | 0,0102 | 0,0079 | 0,0075 | 0,0081 | 0,0301 | 0,0144 | 0,0171 | 0,0130 | 0,0073 | 0,5662 | 0,0301 | 0,0074 |
| 3 | Cliff Features | 0,0196 | 0,0143 | 0,0169 | 0,0254 | 0,0224 | 0,0268 | 0,0220 | 0,0239 | 0,0283 | 0,0222 | 0,0046 | 0,2068 | 0,0283 | 0,0143 |
| 4 | Beach Type | 0,0303 | 0,0292 | 0,0348 | 0,0466 | 0,0345 | 0,0527 | 0,0336 | 0,0342 | 0,0338 | 0,0366 | 0,0078 | 0,2124 | 0,0527 | 0,0292 |
| 5 | Beach Width | 0,0329 | 0,0210 | 0,0289 | 0,0298 | 0,0207 | 0,0343 | 0,0243 | 0,0287 | 0,0287 | 0,0277 | 0,0048 | 0,1731 | 0,0343 | 0,0207 |
| 6 | Beach color | 0,0277 | 0,0175 | 0,0208 | 0,0189 | 0,0069 | 0,0250 | 0,0267 | 0,0227 | 0,0240 | 0,0211 | 0,0063 | 0,2994 | 0,0277 | 0,0069 |
| 7 | Shore Slope | 0,0126 | 0,0100 | 0,0102 | 0,0083 | 0,0098 | 0,0075 | 0,0104 | 0,0126 | 0,0141 | 0,0106 | 0,0021 | 0,1985 | 0,0141 | 0,0075 |
| 8 | Shore Extent | 0,0231 | 0,0100 | 0,0132 | 0,0101 | 0,0190 | 0,0054 | 0,0104 | 0,0141 | 0,0147 | 0,0134 | 0,0053 | 0,3949 | 0,0231 | 0,0054 |
| 9 | Shore Roughness | 0,0219 | 0,0169 | 0,0185 | 0,0193 | 0,0213 | 0,0181 | 0,0093 | 0,0209 | 0,0225 | 0,0187 | 0,0040 | 0,2144 | 0,0225 | 0,0093 |
| 10 | Sand dunes | 0,0322 | 0,0626 | 0,0542 | 0,0494 | 0,0362 | 0,0560 | 0,1078 | 0,0446 | 0,0386 | 0,0535 | 0,0226 | 0,4233 | 0,1078 | 0,0322 |
| 11 | River valley | 0,0608 | 0,0982 | 0,0839 | 0,0816 | 0,0880 | 0,0777 | 0,0730 | 0,0810 | 0,0793 | 0,0804 | 0,0102 | 0,1271 | 0,0982 | 0,0608 |
| 12 | Landform | 0,0751 | 0,0989 | 0,0853 | 0,0852 | 0,0984 | 0,0840 | 0,1217 | 0,0850 | 0,0850 | 0,0909 | 0,0137 | 0,1505 | 0,1217 | 0,0751 |
| 13 | Tides | 0,0379 | 0,0289 | 0,0423 | 0,0590 | 0,0518 | 0,0623 | 0,0800 | 0,0381 | 0,0355 | 0,0484 | 0,0162 | 0,3354 | 0,0800 | 0,0289 |
| 14 | Coastal Landscape Features | 0,1438 | 0,1146 | 0,1338 | 0,1536 | 0,1726 | 0,1427 | 0,1251 | 0,1271 | 0,1213 | 0,1372 | 0,0181 | 0,1320 | 0,1726 | 0,1146 |
| 15 | Vistas of Far Places | 0,1202 | 0,0727 | 0,0931 | 0,1024 | 0,1001 | 0,1030 | 0,0765 | 0,0942 | 0,0951 | 0,0952 | 0,0142 | 0,1494 | 0,1202 | 0,0727 |
| 16 | Water Color | 0,1559 | 0,1557 | 0,1602 | 0,1697 | 0,1657 | 0,1707 | 0,1460 | 0,1474 | 0,1395 | 0,1568 | 0,0109 | 0,0698 | 0,1707 | 0,1395 |
| 17 | Vegetation Cover | 0,1316 | 0,1357 | 0,1121 | 0,0643 | 0,0604 | 0,0659 | 0,0730 | 0,1151 | 0,1172 | 0,0973 | 0,0308 | 0,3170 | 0,1357 | 0,0604 |
| 18 | Seaweed | 0,0494 | 0,0907 | 0,0637 | 0,0417 | 0,0587 | 0,0325 | 0,0139 | 0,0774 | 0,0863 | 0,0571 | 0,0255 | 0,4465 | 0,0907 | 0,0139 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Disturbance Factor | 0,1392 | 0,1345 | 0,1357 | 0,1358 | 0,1395 | 0,1337 | 0,1336 | 0,1362 | 0,1374 | 0,1362 | 0,0022 | 0,0161 | 0,1395 | 0,1336 |
| 2 | Litter | 0,1885 | 0,1413 | 0,1526 | 0,1487 | 0,1395 | 0,1538 | 0,1489 | 0,1501 | 0,1491 | 0,1525 | 0,0143 | 0,0937 | 0,1885 | 0,1395 |
| 3 | Seawege | 0,1885 | 0,1413 | 0,1526 | 0,1487 | 0,1395 | 0,1538 | 0,1489 | 0,1501 | 0,1491 | 0,1525 | 0,0143 | 0,0937 | 0,1885 | 0,1395 |
| 4 | Non-Built Environment | 0,0730 | 0,0738 | 0,0639 | 0,0492 | 0,0814 | 0,0314 | 0,0191 | 0,0636 | 0,0637 | 0,0577 | 0,0207 | 0,3585 | 0,0814 | 0,0191 |
| 5 | Built Environment | 0,1087 | 0,1331 | 0,1299 | 0,1347 | 0,1323 | 0,1361 | 0,1527 | 0,1344 | 0,1366 | 0,1331 | 0,0113 | 0,0847 | 0,1527 | 0,1087 |
| 6 | Access Type | 0,0849 | 0,1098 | 0,1055 | 0,1135 | 0,1032 | 0,1192 | 0,0916 | 0,0968 | 0,0910 | 0,1017 | 0,0115 | 0,1126 | 0,1192 | 0,0849 |
| 7 | Skyline | 0,1087 | 0,1331 | 0,1299 | 0,1347 | 0,1323 | 0,1361 | 0,1527 | 0,1344 | 0,1366 | 0,1331 | 0,0113 | 0,0847 | 0,1527 | 0,1087 |
| 8 | Utilities | 0,1087 | 0,1331 | 0,1299 | 0,1347 | 0,1323 | 0,1361 | 0,1527 | 0,1344 | 0,1366 | 0,1331 | 0,0113 | 0,0847 | 0,1527 | 0,1087 |

# APPENDIX- D

# SPSS OUTPUT TABLES FOR ONE WAY ANOVA AND INDEPENDENT T TESTS

## Table 29- ANOVA Results for Age Category with Factors - Descriptives

**Descriptives**

| | | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean Lower Bound | 95% Confidence Interval for Mean Upper Bound | Minimum | Maximum |
|---|---|---|---|---|---|---|---|---|---|
| REGR factor score 1 for analysis 2 | 18-29 | 15 | -,2206985 | 1,0331785 | ,2667655 | -,7928536 | ,3514567 | -2,01497 | ,97263 |
| | 30-44 | 39 | -,1470030 | ,9359081 | ,1498652 | -,4503893 | ,1563833 | -2,85698 | 1,07374 |
| | 45-64 | 30 | ,2462691 | 1,0505667 | ,1918064 | -,1460190 | ,6385571 | -2,59644 | 1,33348 |
| | 65- | 2 | ,8277605 | 1,51E-02 | 1,07E-02 | ,6917008 | ,9638201 | ,81705 | ,83847 |
| | Total | 86 | -1,0E-17 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,85698 | 1,33348 |
| REGR factor score 2 for analysis 2 | 18-29 | 15 | ,1262245 | 1,0805867 | ,2790063 | -,4721845 | ,7246334 | -2,16933 | 1,62559 |
| | 30-44 | 39 | ,2532419 | ,9806782 | ,1570342 | -6,5E-02 | ,5711410 | -1,66588 | 2,11625 |
| | 45-64 | 30 | -,4090360 | ,8884469 | ,1622075 | -,7407875 | -7,7E-02 | -1,97836 | 1,34608 |
| | 65- | 2 | ,2506399 | 1,1537136 | ,8157987 | -10,1151 | 10,61635 | -,56516 | 1,06644 |
| | Total | 86 | 1,55E-17 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,16933 | 2,11625 |
| REGR factor score 3 for analysis 2 | 18-29 | 15 | -,1472715 | 1,1138139 | ,2875855 | -,7640810 | ,4695381 | -2,42142 | 1,75968 |
| | 30-44 | 39 | 4,59E-02 | ,9606368 | ,1538250 | -,2655460 | ,3572588 | -2,25454 | 2,12268 |
| | 45-64 | 30 | 7,72E-02 | ,9843699 | ,1797205 | -,2903558 | ,4447837 | -1,79101 | 1,76988 |
| | 65- | 2 | -,9478727 | 1,4425408 | 1,0200304 | -13,9086 | 12,01284 | -1,96790 | ,07216 |
| | Total | 86 | -5,7E-17 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,42142 | 2,12268 |
| REGR factor score 4 for analysis 2 | 18-29 | 15 | 7,08E-02 | 1,1729335 | ,3028501 | -,5787784 | ,7203194 | -2,07449 | 2,13200 |
| | 30-44 | 39 | 2,37E-02 | ,9779256 | ,1565934 | -,2932739 | ,3407397 | -2,05397 | 1,80154 |
| | 45-64 | 30 | -8,4E-02 | ,9987447 | ,1823450 | -,4572751 | ,2885997 | -3,07873 | 1,95539 |
| | 65- | 2 | ,2714958 | ,1147968 | 8,12E-02 | -,7599125 | 1,3029042 | ,19032 | ,35267 |
| | Total | 86 | 2,76E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -3,07873 | 2,13200 |
| REGR factor score 5 for analysis 2 | 18-29 | 15 | ,6455359 | ,8748459 | ,2258842 | ,1610624 | 1,1300094 | -,93196 | 1,94250 |
| | 30-44 | 39 | 8,79E-02 | ,8327681 | ,1333496 | -,1820420 | ,3578624 | -2,03228 | 1,24670 |
| | 45-64 | 30 | -,3976578 | 1,0723166 | ,1957773 | -,7980674 | 2,75E-03 | -2,29376 | 1,70347 |
| | 65- | 2 | -,5908999 | 1,6098046 | 1,1383037 | -15,0544 | 13,87262 | -1,72920 | ,54740 |
| | Total | 86 | -4,8E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,29376 | 1,94250 |
| REGR factor score 6 for analysis 2 | 18-29 | 15 | -,4312773 | 1,3215879 | ,3412325 | -1,16315 | ,3005937 | -3,61702 | 1,33114 |
| | 30-44 | 39 | ,2069786 | ,9980152 | ,1598103 | -,1165405 | ,5304977 | -2,59757 | 2,26129 |
| | 45-64 | 30 | -5,3E-02 | ,7641438 | ,1395129 | -,3380198 | ,2326522 | -1,75958 | 1,07095 |
| | 65- | 2 | -1,1E-02 | 1,1047734 | ,7811928 | -9,93724 | 9,9147489 | -,79244 | ,76995 |
| | Total | 86 | -1,4E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -3,61702 | 2,26129 |
| REGR factor score 7 for analysis 2 | 18-29 | 15 | 6,15E-03 | 1,1148976 | ,2878653 | -,6112595 | ,6235599 | -1,63374 | 2,30405 |
| | 30-44 | 39 | -6,8E-02 | 1,1671211 | ,1868889 | -,4467960 | ,3098778 | -2,29456 | 2,11067 |
| | 45-64 | 30 | 2,21E-02 | ,6540106 | ,1194055 | -,2220966 | ,2663266 | -2,06209 | ,93064 |
| | 65- | 2 | ,9571006 | 1,1837480 | ,8370363 | -9,67845 | 11,59265 | ,12006 | 1,79414 |
| | Total | 86 | -1,5E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,29456 | 2,30405 |
| REGR factor score 8 for analysis 2 | 18-29 | 15 | -,4697662 | 1,1710011 | ,3023512 | -1,11825 | ,1787126 | -2,49640 | 1,74221 |
| | 30-44 | 39 | -1,1E-02 | ,9968263 | ,1596200 | -,3337139 | ,3125535 | -2,38834 | 1,69333 |
| | 45-64 | 30 | ,2758867 | ,8730211 | ,1593911 | -5,0E-02 | ,6018781 | -1,11164 | 2,81032 |
| | 65- | 2 | -,4087399 | 9,21E-02 | 6,52E-02 | -1,23666 | ,4191825 | -,47390 | -,34358 |
| | Total | 86 | -1,3E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,49640 | 2,81032 |
| REGR factor score 9 for analysis 2 | 18-29 | 15 | ,1838114 | 1,1560933 | ,2985020 | -,4564117 | ,8240346 | -3,06082 | 1,71186 |
| | 30-44 | 39 | -5,0E-02 | 1,0476518 | ,1677585 | -,3897876 | ,2894313 | -1,99011 | 2,43225 |
| | 45-64 | 30 | -6,5E-02 | ,8895953 | ,1624171 | -,3972590 | ,2671017 | -3,06194 | 1,16412 |
| | 65- | 2 | ,5760681 | ,4844391 | ,3425502 | -3,77644 | 4,9285806 | ,23352 | ,91862 |
| | Total | 86 | -4,0E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -3,06194 | 2,43225 |
| REGR factor score 10 for analysis 2 | 18-29 | 15 | ,2090532 | 1,1721905 | ,3026583 | -,4400842 | ,8581907 | -1,32903 | 2,74018 |
| | 30-44 | 39 | 6,85E-02 | ,9911986 | ,1587188 | -,2528335 | ,3897853 | -2,17341 | 2,33443 |
| | 45-64 | 30 | -,2054034 | ,9513311 | ,1736885 | -,5606363 | ,1498294 | -2,55030 | 1,65402 |
| | 65- | 2 | ,1778717 | ,1274090 | 9,01E-02 | -,9668530 | 1,3225964 | ,08778 | ,26796 |
| | Total | 86 | -2,5E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,55030 | 2,74018 |
| REGR factor score 11 for analysis 2 | 18-29 | 15 | -,1016191 | 1,2309926 | ,3178409 | -,7833200 | ,5800819 | -2,85720 | 1,99383 |
| | 30-44 | 39 | ,1144019 | ,9589746 | ,1535588 | -,1964617 | ,4252655 | -1,90811 | 2,75077 |
| | 45-64 | 30 | -9,8E-02 | ,9805794 | ,1790285 | -,4637310 | ,2685778 | -2,01123 | 3,20452 |
| | 65- | 2 | -5,0E-03 | 6,02E-02 | 4,26E-02 | -,5461765 | ,5360871 | -,04763 | ,03754 |
| | Total | 86 | 2,16E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,85720 | 3,20452 |

## Table 30- ANOVA Results for Age Category with Factors – Multiple Comparisons

**Multiple Comparisons**

Bonferroni

| Dependent Variable | (I) AGECAT | (J) AGECAT | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval Lower Bound | 95% Confidence Interval Upper Bound |
|---|---|---|---|---|---|---|---|
| REGR factor score 1 for analysis 2 | 18-29 | 30-44 | -7,37E-02 | ,3005375 | 1,000 | -,8862798 | ,7388888 |
| | | 45-64 | -,4669675 | ,3128094 | ,836 | -1,31273 | ,3787970 |
| | | 65- | -1,0484589 | ,7446353 | ,977 | -3,06178 | ,9648634 |
| | 30-44 | 18-29 | 7,370E-02 | ,3005375 | 1,000 | -,7388888 | ,8862798 |
| | | 45-64 | -,3932721 | ,2402212 | ,633 | -1,04277 | ,2562308 |
| | | 65- | -,9747635 | ,7171738 | 1,000 | -2,91384 | ,9643093 |
| | 45-64 | 18-29 | ,4669675 | ,3128094 | ,836 | -,3787970 | 1,3127321 |
| | | 30-44 | ,3932721 | ,2402212 | ,633 | -,2562308 | 1,0427750 |
| | | 65- | -,5814914 | ,7224024 | 1,000 | -2,53470 | 1,3717182 |
| | 65- | 18-29 | 1,0484589 | ,7446353 | ,977 | -,9648634 | 3,0617813 |
| | | 30-44 | ,9747635 | ,7171738 | 1,000 | -,9643093 | 2,9138362 |
| | | 45-64 | ,5814914 | ,7224024 | 1,000 | -1,37172 | 2,5347010 |
| REGR factor score 2 for analysis 2 | 18-29 | 30-44 | -,1270174 | ,2946329 | 1,000 | -,9236369 | ,6696021 |
| | | 45-64 | ,5352604 | ,3066637 | ,508 | -,2938875 | 1,3644083 |
| | | 65- | -,1244154 | ,7300055 | 1,000 | -2,09818 | 1,8493514 |
| | 30-44 | 18-29 | ,1270174 | ,2946329 | 1,000 | -,6696021 | ,9236369 |
| | | 45-64 | ,6622779* | ,2355016 | ,037 | 2,55E-02 | 1,2990200 |
| | | 65- | 2,602E-03 | ,7030836 | 1,000 | -1,89837 | 1,9035780 |
| | 45-64 | 18-29 | -,5352604 | ,3066637 | ,508 | -1,36441 | ,2938875 |
| | | 30-44 | -,6622779* | ,2355016 | ,037 | -1,29902 | -2,6E-02 |
| | | 65- | -,6596759 | ,7082094 | 1,000 | -2,57451 | 1,2551592 |
| | 65- | 18-29 | ,1244154 | ,7300055 | 1,000 | -1,84935 | 2,0981822 |
| | | 30-44 | -2,60E-03 | ,7030836 | 1,000 | -1,90358 | 1,8983740 |
| | | 45-64 | ,6596759 | ,7082094 | 1,000 | -1,25516 | 2,5745109 |
| REGR factor score 3 for analysis 2 | 18-29 | 30-44 | -,1931278 | ,3049625 | 1,000 | -1,01768 | ,6314204 |
| | | 45-64 | -,2244854 | ,3174150 | 1,000 | -1,08270 | ,6337316 |
| | | 65- | ,8006013 | ,7555988 | 1,000 | -1,24236 | 2,8435665 |
| | 30-44 | 18-29 | ,1931278 | ,3049625 | 1,000 | -,6314204 | 1,0176761 |
| | | 45-64 | -3,14E-02 | ,2437581 | 1,000 | -,6904234 | ,6277082 |
| | | 65- | ,9937291 | ,7277330 | 1,000 | -,9738933 | 2,9613515 |
| | 45-64 | 18-29 | ,2244854 | ,3174150 | 1,000 | -,6337316 | 1,0827025 |
| | | 30-44 | 3,136E-02 | ,2437581 | 1,000 | -,6277082 | ,6904234 |
| | | 65- | 1,0250867 | ,7330385 | ,995 | -,9568807 | 3,0070541 |
| | 65- | 18-29 | -,8006013 | ,7555988 | 1,000 | -2,84357 | 1,2423639 |
| | | 30-44 | -,9937291 | ,7277330 | 1,000 | -2,96135 | ,9738933 |
| | | 45-64 | -1,0250867 | ,7330385 | ,995 | -3,00705 | ,9568807 |
| REGR factor score 4 for analysis 2 | 18-29 | 30-44 | 4,704E-02 | ,3084953 | 1,000 | -,7870625 | ,8811379 |
| | | 45-64 | ,1551083 | ,3210921 | 1,000 | -,7130507 | 1,0232673 |
| | | 65- | -,2007253 | ,7643520 | 1,000 | -2,26736 | 1,8659066 |
| | 30-44 | 18-29 | -4,70E-02 | ,3084953 | 1,000 | -,8811379 | ,7870625 |
| | | 45-64 | ,1080706 | ,2465819 | 1,000 | -,5586301 | ,7747713 |
| | | 65- | -,2477629 | ,7361634 | 1,000 | -2,23818 | 1,7426533 |
| | 45-64 | 18-29 | -,1551083 | ,3210921 | 1,000 | -1,02327 | ,7130507 |
| | | 30-44 | -,1080706 | ,2465819 | 1,000 | -,7747713 | ,5586301 |
| | | 65- | -,3558335 | ,7415304 | 1,000 | -2,36076 | 1,6490938 |
| | 65- | 18-29 | ,2007253 | ,7643520 | 1,000 | -1,86591 | 2,2673571 |
| | | 30-44 | ,2477629 | ,7361634 | 1,000 | -1,74265 | 2,2381792 |
| | | 45-64 | ,3558335 | ,7415304 | 1,000 | -1,64909 | 2,3607609 |
| REGR factor score 5 for analysis 2 | 18-29 | 30-44 | ,5576257 | ,2866751 | ,331 | -,2174778 | 1,3327293 |
| | | 45-64 | 1,0431937* | ,2983809 | ,005 | ,2364404 | 1,8499471 |
| | | 65- | 1,2364358 | ,7102887 | ,513 | -,6840213 | 3,1568929 |
| | 30-44 | 18-29 | -,5576257 | ,2866751 | ,331 | -1,33273 | ,2174778 |
| | | 45-64 | ,4855680 | ,2291409 | ,223 | -,1339763 | 1,1051123 |
| | | 65- | ,6788101 | ,6840939 | 1,000 | -1,17082 | 2,5284424 |
| | 45-64 | 18-29 | -1,0431937* | ,2983809 | ,005 | -1,84995 | -,2364404 |
| | | 30-44 | -,4855680 | ,2291409 | ,223 | -1,10511 | ,1339763 |
| | | 65- | ,1932421 | ,6890813 | 1,000 | -1,66987 | 2,0563591 |
| | 65- | 18-29 | -1,2364358 | ,7102887 | ,513 | -3,15689 | ,6840213 |
| | | 30-44 | -,6788101 | ,6840939 | 1,000 | -2,52844 | 1,1708222 |
| | | 45-64 | -,1932421 | ,6890813 | 1,000 | -2,05636 | 1,6698750 |
| REGR factor score 6 for analysis 2 | 18-29 | 30-44 | -,6382560 | ,3009473 | ,222 | -1,45195 | ,1754362 |
| | | 45-64 | -,3785935 | ,3132359 | 1,000 | -1,22551 | ,4683242 |
| | | 65- | -,4200309 | ,7456506 | 1,000 | -2,43610 | 1,5960364 |
| | 30-44 | 18-29 | ,6382560 | ,3009473 | ,222 | -,1754362 | 1,4519482 |
| | | 45-64 | ,2596624 | ,2405488 | 1,000 | -,3907260 | ,9100509 |
| | | 65- | ,2182250 | ,7181516 | 1,000 | -1,72349 | 2,1599416 |
| | 45-64 | 18-29 | ,3785935 | ,3132359 | 1,000 | -,4683242 | 1,2255112 |
| | | 30-44 | -,2596624 | ,2405488 | 1,000 | -,9100509 | ,3907260 |
| | | 65- | -4,14E-02 | ,7233873 | 1,000 | -1,99731 | 1,9144352 |
| | 65- | 18-29 | ,4200309 | ,7456506 | 1,000 | -1,59604 | 2,4360983 |
| | | 30-44 | -,2182250 | ,7181516 | 1,000 | -2,15994 | 1,7234915 |
| | | 45-64 | 4,144E-02 | ,7233873 | 1,000 | -1,91444 | 1,9973100 |

*. The mean difference is significant at the .05 level.

Table 30- ANOVA Results for Age Category with Factors - Multiple Comparisons (con.)

**Multiple Comparisons**

Bonferroni

| Dependent Variable | (I) AGECAT | (J) AGECAT | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval Lower Bound | 95% Confidence Interval Upper Bound |
|---|---|---|---|---|---|---|---|
| REGR factor score 7 for analysis 2 | 18-29 | 30-44 | 7,461E-02 | ,3056133 | 1,000 | -,7516988 | ,9009174 |
| | | 45-64 | -1,60E-02 | ,3180924 | 1,000 | -,8760135 | ,8440839 |
| | | 65- | -,9509503 | ,7572115 | 1,000 | -2,99828 | 1,0963751 |
| | 30-44 | 18-29 | -7,46E-02 | ,3056133 | 1,000 | -,9009174 | ,7516988 |
| | | 45-64 | -9,06E-02 | ,2442783 | 1,000 | -,7510465 | ,5698983 |
| | | 65- | -1,0255596 | ,7292862 | ,981 | -2,99738 | ,9462622 |
| | 45-64 | 18-29 | 1,596E-02 | ,3180924 | 1,000 | -,8440839 | ,8760135 |
| | | 30-44 | 9,057E-02 | ,2442783 | 1,000 | -,5698983 | ,7510465 |
| | | 65- | -,9349856 | ,7346030 | 1,000 | -2,92118 | 1,0512118 |
| | 65- | 18-29 | ,9509503 | ,7572115 | 1,000 | -1,09638 | 2,9982758 |
| | | 30-44 | 1,0255596 | ,7292862 | ,981 | -,9462622 | 2,9973815 |
| | | 45-64 | ,9349856 | ,7346030 | 1,000 | -1,05121 | 2,9211830 |
| REGR factor score 8 for analysis 2 | 18-29 | 30-44 | -,4591861 | ,2983404 | ,766 | -1,26583 | ,3474577 |
| | | 45-64 | -,7456529 | ,3105226 | ,112 | -1,58523 | 9,39E-02 |
| | | 65- | -6,10E-02 | ,7391915 | 1,000 | -2,05963 | 1,9375773 |
| | 30-44 | 18-29 | ,4591861 | ,2983404 | ,766 | -,3474577 | 1,2658298 |
| | | 45-64 | -,2864668 | ,2384651 | 1,000 | -,9312214 | ,3582878 |
| | | 65- | ,3981597 | ,7119308 | 1,000 | -1,52674 | 2,3230566 |
| | 45-64 | 18-29 | ,7456529 | ,3105226 | ,112 | -9,4E-02 | 1,5852344 |
| | | 30-44 | ,2864668 | ,2384651 | 1,000 | -,3582878 | ,9312214 |
| | | 65- | ,6846266 | ,7171211 | 1,000 | -1,25430 | 2,6235569 |
| | 65- | 18-29 | 6,103E-02 | ,7391915 | 1,000 | -1,93758 | 2,0596300 |
| | | 30-44 | -,3981597 | ,7119308 | 1,000 | -2,32306 | 1,5267371 |
| | | 45-64 | -,6846266 | ,7171211 | 1,000 | -2,62356 | 1,2543037 |
| REGR factor score 9 for analysis 2 | 18-29 | 30-44 | ,2339896 | ,3067794 | 1,000 | -,5954712 | 1,0634504 |
| | | 45-64 | ,2488901 | ,3193061 | 1,000 | -,6144400 | 1,1122203 |
| | | 65- | -,3922567 | ,7601006 | 1,000 | -2,44739 | 1,6628802 |
| | 30-44 | 18-29 | -,2339896 | ,3067794 | 1,000 | -1,06345 | ,5954712 |
| | | 45-64 | 1,490E-02 | ,2452104 | 1,000 | -,6480918 | ,6778929 |
| | | 65- | -,6262462 | ,7320687 | 1,000 | -2,60559 | 1,3530990 |
| | 45-64 | 18-29 | -,2488901 | ,3193061 | 1,000 | -1,11222 | ,6144400 |
| | | 30-44 | -1,49E-02 | ,2452104 | 1,000 | -,6778929 | ,6480918 |
| | | 65- | -,6411468 | ,7374059 | 1,000 | -2,63492 | 1,3526288 |
| | 65- | 18-29 | ,3922567 | ,7601006 | 1,000 | -1,66288 | 2,4473935 |
| | | 30-44 | ,6262462 | ,7320687 | 1,000 | -1,35310 | 2,6055914 |
| | | 45-64 | ,6411468 | ,7374059 | 1,000 | -1,35263 | 2,6349224 |
| REGR factor score 10 for analysis 2 | 18-29 | 30-44 | ,1405773 | ,3053603 | 1,000 | -,6850467 | ,9662013 |
| | | 45-64 | ,4144567 | ,3178291 | 1,000 | -,4448801 | 1,2737934 |
| | | 65- | 3,118E-02 | ,7565846 | 1,000 | -2,01445 | 2,0768121 |
| | 30-44 | 18-29 | -,1405773 | ,3053603 | 1,000 | -,9662013 | ,6850467 |
| | | 45-64 | ,2738793 | ,2440761 | 1,000 | -,3860463 | ,9338050 |
| | | 65- | -,1093958 | ,7286825 | 1,000 | -2,07959 | 1,8607937 |
| | 45-64 | 18-29 | -,4144567 | ,3178291 | 1,000 | -1,27379 | ,4448801 |
| | | 30-44 | -,2738793 | ,2440761 | 1,000 | -,9338050 | ,3860463 |
| | | 65- | -,3832751 | ,7339949 | 1,000 | -2,36783 | 1,6012781 |
| | 65- | 18-29 | -3,12E-02 | ,7565846 | 1,000 | -2,07681 | 2,0144491 |
| | | 30-44 | ,1093958 | ,7286825 | 1,000 | -1,86079 | 2,0795853 |
| | | 45-64 | ,3832751 | ,7339949 | 1,000 | -1,60128 | 2,3678283 |
| REGR factor score 11 for analysis 2 | 18-29 | 30-44 | -,2160209 | ,3075943 | 1,000 | -1,04769 | ,6156432 |
| | | 45-64 | -4,04E-03 | ,3201543 | 1,000 | -,8696659 | ,8615810 |
| | | 65- | -9,66E-02 | ,7621197 | 1,000 | -2,15717 | 1,9640217 |
| | 30-44 | 18-29 | ,2160209 | ,3075943 | 1,000 | -,6156432 | 1,0476851 |
| | | 45-64 | ,2119785 | ,2458617 | 1,000 | -,4527750 | ,8767320 |
| | | 65- | ,1194466 | ,7340133 | 1,000 | -1,86516 | 2,1040497 |
| | 45-64 | 18-29 | 4,042E-03 | ,3201543 | 1,000 | -,8615810 | ,8696659 |
| | | 30-44 | -,2119785 | ,2458617 | 1,000 | -,8767320 | ,4527750 |
| | | 65- | -9,25E-02 | ,7393647 | 1,000 | -2,09160 | 1,9065399 |
| | 65- | 18-29 | 9,657E-02 | ,7621197 | 1,000 | -1,96402 | 2,1571703 |
| | | 30-44 | -,1194466 | ,7340133 | 1,000 | -2,10405 | 1,8651564 |
| | | 45-64 | 9,253E-02 | ,7393647 | 1,000 | -1,90654 | 2,0916036 |

## Table 31- ANOVA Results for Locality and Factors - Descriptives

**Descriptives**

| | | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean Lower Bound | 95% Confidence Interval for Mean Upper Bound | Minimum | Maximum |
|---|---|---|---|---|---|---|---|---|---|
| REGR factor score 1 for analysis 2 | local | 29 | ,8267545 | ,2247412 | 4,17E-02 | ,7412675 | ,9122415 | ,11420 | 1,16640 |
| | native tourist | 33 | -,6651025 | ,9721243 | ,1692251 | -1,00980 | -,3204022 | -2,85698 | ,95312 |
| | foreign tourist | 24 | -8,4E-02 | ,9029797 | ,1843200 | -,4657740 | ,2968157 | -2,59644 | 1,33348 |
| | Total | 86 | -6,2E-17 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,85698 | 1,33348 |
| REGR factor score 2 for analysis 2 | local | 29 | ,1482770 | 1,0045661 | ,1865432 | -,2338395 | ,5303935 | -1,53014 | 2,11625 |
| | native tourist | 33 | ,1921966 | ,8622668 | ,1501014 | -,1135500 | ,4979431 | -1,65008 | 1,62559 |
| | foreign tourist | 24 | -,4434383 | 1,0708729 | ,2185910 | -,8956283 | 8,75E-03 | -2,16933 | 1,94425 |
| | Total | 86 | -6,2E-17 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,16933 | 2,11625 |
| REGR factor score 3 for analysis 2 | local | 29 | -9,1E-02 | ,9112955 | ,1692233 | -,4377880 | ,2554886 | -2,42142 | 1,52105 |
| | native tourist | 33 | -,2721673 | 1,1240101 | ,1956650 | -,6707240 | ,1263893 | -2,25454 | 2,12268 |
| | foreign tourist | 24 | ,4843693 | ,7518739 | ,1534756 | ,1668808 | ,8018578 | -1,15560 | 1,76988 |
| | Total | 86 | -6,2E-17 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,42142 | 2,12268 |
| REGR factor score 4 for analysis 2 | local | 29 | 6,25E-02 | ,8160431 | ,1515354 | -,2479391 | ,3728734 | -2,18448 | 1,56378 |
| | native tourist | 33 | -,1666704 | ,9571858 | ,1666247 | -,5060737 | ,1727329 | -2,07449 | 1,95539 |
| | foreign tourist | 24 | ,1536906 | 1,2412957 | ,2533784 | -,3704626 | ,6778438 | -3,07873 | 2,13200 |
| | Total | 86 | 2,89E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -3,07873 | 2,13200 |
| REGR factor score 5 for analysis 2 | local | 29 | -,5219217 | ,9228749 | ,1713736 | -,8729645 | -,1708789 | -1,72920 | 1,20719 |
| | native tourist | 33 | ,2897261 | ,9268550 | ,1613447 | -3,9E-02 | ,6183746 | -2,03228 | 1,94250 |
| | foreign tourist | 24 | ,2322820 | ,9712808 | ,1982619 | -,1778539 | ,6424179 | -2,29376 | 1,70347 |
| | Total | 86 | -4,5E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,29376 | 1,94250 |
| REGR factor score 6 for analysis 2 | local | 29 | ,2286303 | ,8355128 | ,1551508 | -8,9E-02 | ,5464424 | -,86652 | 2,26129 |
| | native tourist | 33 | -,2288745 | ,9200368 | ,1601578 | -,5551053 | 9,74E-02 | -2,30135 | 1,57271 |
| | foreign tourist | 24 | 3,84E-02 | 1,2351156 | ,2521169 | -,4831028 | ,5599844 | -3,61702 | 1,70164 |
| | Total | 86 | -1,7E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -3,61702 | 2,26129 |
| REGR factor score 7 for analysis 2 | local | 29 | -,1070895 | ,8114302 | ,1506788 | -,4157410 | ,2015620 | -1,59446 | 2,30405 |
| | native tourist | 33 | -6,7E-03 | 1,2762923 | ,2221740 | -,4592826 | ,4458246 | -2,29456 | 2,11067 |
| | foreign tourist | 24 | ,1386521 | ,7701866 | ,1572137 | -,1865691 | ,4638734 | -1,82740 | 1,50057 |
| | Total | 86 | -1,3E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,29456 | 2,30405 |
| REGR factor score 8 for analysis 2 | local | 29 | 2,21E-02 | ,8048981 | ,1494658 | -,2840667 | ,3282670 | -1,11164 | 1,74221 |
| | native tourist | 33 | -,1111959 | 1,0432126 | ,1816000 | -,4811030 | ,2587112 | -2,49640 | 1,69333 |
| | foreign tourist | 24 | ,1261901 | 1,1652610 | ,2378579 | -,3658565 | ,6182366 | -2,38834 | 2,81032 |
| | Total | 86 | -1,3E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,49640 | 2,81032 |
| REGR factor score 9 for analysis 2 | local | 29 | ,3433666 | ,4386381 | 8,15E-02 | ,1765176 | ,5102156 | -,51701 | 1,28795 |
| | native tourist | 33 | -5,6E-02 | ,9811448 | ,1707954 | -,4034850 | ,2923126 | -3,06082 | 1,42619 |
| | foreign tourist | 24 | -,3384702 | 1,3599471 | ,2775980 | -,9127255 | ,2357850 | -3,06194 | 2,43225 |
| | Total | 86 | -3,9E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -3,06194 | 2,43225 |
| REGR factor score 10 for analysis 2 | local | 29 | 2,14E-02 | ,6958600 | ,1292180 | -,2433052 | ,2860768 | -1,32903 | 1,80196 |
| | native tourist | 33 | -,1692390 | 1,2211735 | ,2125790 | -,6022483 | ,2637703 | -2,55030 | 2,74018 |
| | foreign tourist | 24 | ,2068625 | ,9721308 | ,1984354 | -,2036323 | ,6173573 | -1,19578 | 2,12991 |
| | Total | 86 | -2,5E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,55030 | 2,74018 |
| REGR factor score 11 for analysis 2 | local | 29 | 4,29E-02 | ,5917102 | ,1098778 | -,1821257 | ,2680233 | -1,04194 | 1,49375 |
| | native tourist | 33 | 4,63E-02 | ,9960109 | ,1733832 | -,3068749 | ,3994653 | -2,85720 | 1,99383 |
| | foreign tourist | 24 | -,1155524 | 1,3674274 | ,2791250 | -,6929664 | ,4618616 | -2,01123 | 3,20452 |
| | Total | 86 | 1,91E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,85720 | 3,20452 |

# Table 32- ANOVA Results for Locality and Factors – Multiple Comparisons

**Multiple Comparisons**

Bonferroni

| Dependent Variable | (I) locality | (J) locality | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval Lower Bound | 95% Confidence Interval Upper Bound |
|---|---|---|---|---|---|---|---|
| REGR factor score 1 for analysis 2 | local | native tourist | 1,4918570* | ,1983596 | ,000 | 1,0071716 | 1,9765424 |
| | | foreign tourist | ,9112337* | ,2150536 | ,000 | ,3857571 | 1,4367102 |
| | native tourist | local | -1,4918570* | ,1983596 | ,000 | -1,97654 | -1,00717 |
| | | foreign tourist | -,5806233* | ,2090683 | ,020 | -1,09148 | -7,0E-02 |
| | foreign tourist | local | -,9112337* | ,2150536 | ,000 | -1,43671 | -,3857571 |
| | | native tourist | ,5806233* | ,2090683 | ,020 | 6,98E-02 | 1,0914751 |
| REGR factor score 2 for analysis 2 | local | native tourist | -4,39E-02 | ,2474148 | 1,000 | -,6484696 | ,5606305 |
| | | foreign tourist | ,5917153 | ,2682372 | ,090 | -6,4E-02 | 1,2471444 |
| | native tourist | local | 4,392E-02 | ,2474148 | 1,000 | -,5606305 | ,6484696 |
| | | foreign tourist | ,6356349 | ,2607718 | ,051 | -1,6E-03 | 1,2728223 |
| | foreign tourist | local | -,5917153 | ,2682372 | ,090 | -1,24714 | 6,37E-02 |
| | | native tourist | -,6356349 | ,2607718 | ,051 | -1,27282 | 1,55E-03 |
| REGR factor score 3 for analysis 2 | local | native tourist | ,1810177 | ,2446543 | 1,000 | -,4167872 | ,7788225 |
| | | foreign tourist | -,5755189 | ,2652444 | ,099 | -1,22364 | 7,26E-02 |
| | native tourist | local | -,1810177 | ,2446543 | 1,000 | -,7788225 | ,4167872 |
| | | foreign tourist | -,7565366* | ,2578622 | ,013 | -1,38661 | -,1264585 |
| | foreign tourist | local | ,5755189 | ,2652444 | ,099 | -7,3E-02 | 1,2236351 |
| | | native tourist | ,7565366* | ,2578622 | ,013 | ,1264585 | 1,3866147 |
| REGR factor score 4 for analysis 2 | local | native tourist | ,2291375 | ,2551481 | 1,000 | -,3943086 | ,8525836 |
| | | foreign tourist | -9,12E-02 | ,2766214 | 1,000 | -,7671389 | ,5846919 |
| | native tourist | local | -,2291375 | ,2551481 | 1,000 | -,8525836 | ,3943086 |
| | | foreign tourist | -,3203610 | ,2689226 | ,711 | -,9774646 | ,3367426 |
| | foreign tourist | local | 9,122E-02 | ,2766214 | 1,000 | -,5846919 | ,7671389 |
| | | native tourist | ,3203610 | ,2689226 | ,711 | -,3367426 | ,9774646 |
| REGR factor score 5 for analysis 2 | local | native tourist | -,8116478* | ,2387632 | ,003 | -1,39506 | -,2282376 |
| | | foreign tourist | -,7542037* | ,2588576 | ,014 | -1,38671 | -,1216936 |
| | native tourist | local | ,8116478* | ,2387632 | ,003 | ,2282376 | 1,3950580 |
| | | foreign tourist | 5,744E-02 | ,2516531 | 1,000 | -,5574622 | ,6723505 |
| | foreign tourist | local | ,7542037* | ,2588576 | ,014 | ,1216936 | 1,3867138 |
| | | native tourist | -5,74E-02 | ,2516531 | 1,000 | -,6723505 | ,5574622 |
| REGR factor score 6 for analysis 2 | local | native tourist | ,4575048 | ,2525602 | ,221 | -,1596181 | 1,0746276 |
| | | foreign tourist | ,1901895 | ,2738158 | 1,000 | -,4788705 | ,8592495 |
| | native tourist | local | -,4575048 | ,2525602 | ,221 | -1,07463 | ,1596181 |
| | | foreign tourist | -,2673153 | ,2661950 | ,955 | -,9177543 | ,3831238 |
| | foreign tourist | local | -,1901895 | ,2738158 | 1,000 | -,8592495 | ,4788705 |
| | | native tourist | ,2673153 | ,2661950 | ,955 | -,3831238 | ,9177543 |
| REGR factor score 7 for analysis 2 | local | native tourist | -,1003605 | ,2563708 | 1,000 | -,7267944 | ,5260734 |
| | | foreign tourist | -,2457416 | ,2779470 | 1,000 | -,9248962 | ,4334130 |
| | native tourist | local | ,1003605 | ,2563708 | 1,000 | -,5260734 | ,7267944 |
| | | foreign tourist | -,1453811 | ,2702113 | 1,000 | -,8056338 | ,5148716 |
| | foreign tourist | local | ,2457416 | ,2779470 | 1,000 | -,4334130 | ,9248962 |
| | | native tourist | ,1453811 | ,2702113 | 1,000 | -,5148716 | ,8056338 |
| REGR factor score 8 for analysis 2 | local | native tourist | ,1332960 | ,2563573 | 1,000 | -,4931047 | ,7596968 |
| | | foreign tourist | -,1040899 | ,2779323 | 1,000 | -,7832086 | ,5750288 |
| | native tourist | local | -,1332960 | ,2563573 | 1,000 | -,7596968 | ,4931047 |
| | | foreign tourist | -,2373860 | ,2701970 | 1,000 | -,8976037 | ,4228318 |
| | foreign tourist | local | ,1040899 | ,2779323 | 1,000 | -,5750288 | ,7832086 |
| | | native tourist | ,2373860 | ,2701970 | 1,000 | -,4228318 | ,8976037 |
| REGR factor score 9 for analysis 2 | local | native tourist | ,3989528 | ,2478959 | ,334 | -,2067729 | 1,0046786 |
| | | foreign tourist | ,6818369* | ,2687589 | ,039 | 2,51E-02 | 1,3385405 |
| | native tourist | local | -,3989528 | ,2478959 | ,334 | -1,00468 | ,2067729 |
| | | foreign tourist | ,2828840 | ,2612789 | ,846 | -,3555426 | ,9213106 |
| | foreign tourist | local | -,6818369* | ,2687589 | ,039 | -1,33854 | -2,5E-02 |
| | | native tourist | -,2828840 | ,2612789 | ,846 | -,9213106 | ,3555426 |
| REGR factor score 10 for analysis 2 | local | native tourist | ,1906248 | ,2545528 | 1,000 | -,4313668 | ,8126165 |
| | | foreign tourist | -,1854767 | ,2759760 | 1,000 | -,8598153 | ,4888619 |
| | native tourist | local | -,1906248 | ,2545528 | 1,000 | -,8126165 | ,4313668 |
| | | foreign tourist | -,3761015 | ,2682952 | ,494 | -1,03167 | ,2794691 |
| | foreign tourist | local | ,1854767 | ,2759760 | 1,000 | -,4888619 | ,8598153 |
| | | native tourist | ,3761015 | ,2682952 | ,494 | -,2794691 | 1,0316722 |
| REGR factor score 11 for analysis 2 | local | native tourist | -3,35E-03 | ,2569043 | 1,000 | -,6310837 | ,6243909 |
| | | foreign tourist | ,1585012 | ,2785254 | 1,000 | -,5220666 | ,8390690 |
| | native tourist | local | 3,346E-03 | ,2569043 | 1,000 | -,6243909 | ,6310837 |
| | | foreign tourist | ,1618476 | ,2707736 | 1,000 | -,4997789 | ,8234741 |
| | foreign tourist | local | -,1585012 | ,2785254 | 1,000 | -,8390690 | ,5220666 |
| | | native tourist | -,1618476 | ,2707736 | 1,000 | -,8234741 | ,4997789 |

*. The mean difference is significant at the .05 level.

Table 33- Independent T-Test Results for Sex Category and Factors – Group Statistics

**Group Statistics**

| | sex | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| REGR factor score 1 for analysis 1 | female | 34 | -,1927187 | 1,0471846 | ,1795907 |
| | male | 52 | ,1260084 | ,9571599 | ,1327342 |
| REGR factor score 2 for analysis 1 | female | 34 | 5,24E-02 | ,9372605 | ,1607389 |
| | male | 52 | -3,4E-02 | 1,0465311 | ,1451278 |
| REGR factor score 3 for analysis 1 | female | 34 | -,1616614 | 1,1143787 | ,1911144 |
| | male | 52 | ,1057017 | ,9134048 | ,1266665 |
| REGR factor score 4 for analysis 1 | female | 34 | -,3311304 | 1,1039572 | ,1893271 |
| | male | 52 | ,2165084 | ,8701660 | ,1206703 |
| REGR factor score 5 for analysis 1 | female | 34 | ,2979728 | ,8971722 | ,1538638 |
| | male | 52 | -,1948284 | 1,0236909 | ,1419604 |
| REGR factor score 6 for analysis 1 | female | 34 | -,1889922 | 1,1267347 | ,1932334 |
| | male | 52 | ,1235718 | ,8976769 | ,1244854 |
| REGR factor score 7 for analysis 1 | female | 34 | 9,17E-02 | ,9951974 | ,1706749 |
| | male | 52 | -6,0E-02 | 1,0082349 | ,1398170 |
| REGR factor score 8 for analysis 1 | female | 34 | ,1330707 | 1,2021607 | ,2061689 |
| | male | 52 | -8,7E-02 | ,8438125 | ,1170157 |
| REGR factor score 9 for analysis 1 | female | 34 | 4,57E-03 | 1,1939105 | ,2047540 |
| | male | 52 | -3,0E-03 | ,8627350 | ,1196398 |
| REGR factor score 10 for analysis 1 | female | 34 | 7,08E-03 | 1,0794347 | ,1851215 |
| | male | 52 | -4,6E-03 | ,9553386 | ,1324816 |
| REGR factor score 11 for analysis 1 | female | 34 | -,2435132 | 1,2119016 | ,2078394 |
| | male | 52 | ,1592202 | ,8068130 | ,1118848 |
| REGR factor score 1 for analysis 2 | female | 34 | -,1927187 | 1,0471846 | ,1795907 |
| | male | 52 | ,1260084 | ,9571599 | ,1327342 |
| REGR factor score 2 for analysis 2 | female | 34 | 5,24E-02 | ,9372605 | ,1607389 |
| | male | 52 | -3,4E-02 | 1,0465311 | ,1451278 |
| REGR factor score 3 for analysis 2 | female | 34 | -,1616614 | 1,1143787 | ,1911144 |
| | male | 52 | ,1057017 | ,9134048 | ,1266665 |
| REGR factor score 4 for analysis 2 | female | 34 | -,3311304 | 1,1039572 | ,1893271 |
| | male | 52 | ,2165084 | ,8701660 | ,1206703 |
| REGR factor score 5 for analysis 2 | female | 34 | ,2979728 | ,8971722 | ,1538638 |
| | male | 52 | -,1948284 | 1,0236909 | ,1419604 |
| REGR factor score 6 for analysis 2 | female | 34 | -,1889922 | 1,1267347 | ,1932334 |
| | male | 52 | ,1235718 | ,8976769 | ,1244854 |
| REGR factor score 7 for analysis 2 | female | 34 | 9,17E-02 | ,9951974 | ,1706749 |
| | male | 52 | -6,0E-02 | 1,0082349 | ,1398170 |
| REGR factor score 8 for analysis 2 | female | 34 | ,1330707 | 1,2021607 | ,2061689 |
| | male | 52 | -8,7E-02 | ,8438125 | ,1170157 |
| REGR factor score 9 for analysis 2 | female | 34 | 4,57E-03 | 1,1939105 | ,2047540 |
| | male | 52 | -3,0E-03 | ,8627350 | ,1196398 |
| REGR factor score 10 for analysis 2 | female | 34 | 7,08E-03 | 1,0794347 | ,1851215 |
| | male | 52 | -4,6E-03 | ,9553386 | ,1324816 |
| REGR factor score 11 for analysis 2 | female | 34 | -,2435132 | 1,2119016 | ,2078394 |
| | male | 52 | ,1592202 | ,8068130 | ,1118848 |

Table 34- Independent T- Test Results for Sex Category and Factors – Independent Sample Tests

**Independent Samples Test**

| | | Levene's Test for Equality of Variances: F | Levene's Test for Equality of Variances: Sig. | t-test for Equality of Means: t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference: Lower | 95% Confidence Interval of the Difference: Upper |
|---|---|---|---|---|---|---|---|---|---|---|
| REGR factor score 1 for analysis 1 | Equal variances assumed | ,374 | ,543 | -1,455 | 84 | ,150 | -,3187271 | ,2191170 | -,7544652 | ,1170110 |
| | Equal variances not assumed | | | -1,427 | 66,131 | ,158 | -,3187271 | ,2233186 | -,7645804 | ,1271263 |
| REGR factor score 2 for analysis 1 | Equal variances assumed | ,678 | ,413 | ,391 | 84 | ,697 | 8,664E-02 | ,2216580 | -,3541540 | ,5274284 |
| | Equal variances not assumed | | | ,400 | 76,037 | ,690 | 8,664E-02 | ,2165619 | -,3446798 | ,5179542 |
| REGR factor score 3 for analysis 1 | Equal variances assumed | 4,585 | ,035 | -1,216 | 84 | ,228 | -,2673631 | ,2199332 | -,7047244 | ,1699982 |
| | Equal variances not assumed | | | -1,166 | 60,772 | ,248 | -,2673631 | ,2292795 | -,7258706 | ,1911444 |
| REGR factor score 4 for analysis 1 | Equal variances assumed | 2,723 | ,103 | -2,563 | 84 | ,012 | -,5476388 | ,2136616 | -,9725283 | -,1227493 |
| | Equal variances not assumed | | | -2,439 | 58,961 | ,018 | -,5476388 | ,2245130 | -,9968944 | -9,8E-02 |
| REGR factor score 5 for analysis 1 | Equal variances assumed | 2,128 | ,148 | 2,289 | 84 | ,025 | ,4928012 | ,2152452 | 6,48E-02 | ,9208400 |
| | Equal variances not assumed | | | 2,354 | 76,995 | ,021 | ,4928012 | ,2093485 | 7,59E-02 | ,9096679 |
| REGR factor score 6 for analysis 1 | Equal variances assumed | 1,301 | ,257 | -1,426 | 84 | ,158 | -,3125641 | ,2192226 | -,7485123 | ,1233842 |
| | Equal variances not assumed | | | -1,360 | 59,450 | ,179 | -,3125641 | ,2298603 | -,7724407 | ,1473126 |
| REGR factor score 7 for analysis 1 | Equal variances assumed | ,468 | ,496 | ,685 | 84 | ,495 | ,1516511 | ,2212416 | -,2883120 | ,5916142 |
| | Equal variances not assumed | | | ,687 | 71,359 | ,494 | ,1516511 | ,2206326 | -,2882394 | ,5915416 |
| REGR factor score 8 for analysis 1 | Equal variances assumed | 6,254 | ,014 | ,998 | 84 | ,321 | ,2200784 | ,2205561 | -,2185217 | ,6586785 |
| | Equal variances not assumed | | | ,928 | 54,056 | ,357 | ,2200784 | ,2370618 | -,2551906 | ,6953474 |
| REGR factor score 9 for analysis 1 | Equal variances assumed | 3,869 | ,052 | ,034 | 84 | ,973 | 7,563E-03 | ,2218579 | -,4336257 | ,4487518 |
| | Equal variances not assumed | | | ,032 | 55,216 | ,975 | 7,563E-03 | ,2371452 | -,4676449 | ,4827710 |
| REGR factor score 10 for analysis 1 | Equal variances assumed | 1,260 | ,265 | ,053 | 84 | ,958 | 1,171E-02 | ,2218558 | -,4294714 | ,4528976 |
| | Equal variances not assumed | | | ,051 | 64,509 | ,959 | 1,171E-02 | ,2276431 | -,4429871 | ,4664132 |
| REGR factor score 11 for analysis 1 | Equal variances assumed | 6,093 | ,016 | -1,852 | 84 | ,068 | -,4027334 | ,2174643 | -,8351851 | 2,97E-02 |
| | Equal variances not assumed | | | -1,706 | 52,068 | ,094 | -,4027334 | ,2360412 | -,8763699 | 7,09E-02 |
| REGR factor score 1 for analysis 2 | Equal variances assumed | ,374 | ,543 | -1,455 | 84 | ,150 | -,3187271 | ,2191170 | -,7544652 | ,1170110 |
| | Equal variances not assumed | | | -1,427 | 66,131 | ,158 | -,3187271 | ,2233186 | -,7645804 | ,1271263 |
| REGR factor score 2 for analysis 2 | Equal variances assumed | ,678 | ,413 | ,391 | 84 | ,697 | 8,664E-02 | ,2216580 | -,3541540 | ,5274284 |
| | Equal variances not assumed | | | ,400 | 76,037 | ,690 | 8,664E-02 | ,2165619 | -,3446798 | ,5179542 |
| REGR factor score 3 for analysis 2 | Equal variances assumed | 4,585 | ,035 | -1,216 | 84 | ,228 | -,2673631 | ,2199332 | -,7047244 | ,1699982 |
| | Equal variances not assumed | | | -1,166 | 60,772 | ,248 | -,2673631 | ,2292795 | -,7258706 | ,1911444 |
| REGR factor score 4 for analysis 2 | Equal variances assumed | 2,723 | ,103 | -2,563 | 84 | ,012 | -,5476388 | ,2136616 | -,9725283 | -,1227493 |
| | Equal variances not assumed | | | -2,439 | 58,961 | ,018 | -,5476388 | ,2245130 | -,9968944 | -9,8E-02 |
| REGR factor score 5 for analysis 2 | Equal variances assumed | 2,128 | ,148 | 2,289 | 84 | ,025 | ,4928012 | ,2152452 | 6,48E-02 | ,9208400 |
| | Equal variances not assumed | | | 2,354 | 76,995 | ,021 | ,4928012 | ,2093485 | 7,59E-02 | ,9096679 |
| REGR factor score 6 for analysis 2 | Equal variances assumed | 1,301 | ,257 | -1,426 | 84 | ,158 | -,3125641 | ,2192226 | -,7485123 | ,1233842 |
| | Equal variances not assumed | | | -1,360 | 59,450 | ,179 | -,3125641 | ,2298603 | -,7724407 | ,1473126 |
| REGR factor score 7 for analysis 2 | Equal variances assumed | ,468 | ,496 | ,685 | 84 | ,495 | ,1516511 | ,2212416 | -,2883120 | ,5916142 |
| | Equal variances not assumed | | | ,687 | 71,359 | ,494 | ,1516511 | ,2206326 | -,2882394 | ,5915416 |
| REGR factor score 8 for analysis 2 | Equal variances assumed | 6,254 | ,014 | ,998 | 84 | ,321 | ,2200784 | ,2205561 | -,2185217 | ,6586785 |
| | Equal variances not assumed | | | ,928 | 54,056 | ,357 | ,2200784 | ,2370618 | -,2551906 | ,6953474 |
| REGR factor score 9 for analysis 2 | Equal variances assumed | 3,869 | ,052 | ,034 | 84 | ,973 | 7,563E-03 | ,2218579 | -,4336257 | ,4487518 |
| | Equal variances not assumed | | | ,032 | 55,216 | ,975 | 7,563E-03 | ,2371452 | -,4676449 | ,4827710 |
| REGR factor score 10 for analysis 2 | Equal variances assumed | 1,260 | ,265 | ,053 | 84 | ,958 | 1,171E-02 | ,2218558 | -,4294714 | ,4528976 |
| | Equal variances not assumed | | | ,051 | 64,509 | ,959 | 1,171E-02 | ,2276431 | -,4429871 | ,4664132 |
| REGR factor score 11 for analysis 2 | Equal variances assumed | 6,093 | ,016 | -1,852 | 84 | ,068 | -,4027334 | ,2174643 | -,8351851 | 2,97E-02 |
| | Equal variances not assumed | | | -1,706 | 52,068 | ,094 | -,4027334 | ,2360412 | -,8763699 | 7,09E-02 |

Table 35- Independent T- Test Results for Education Category and Factors – Group Statistics

**Group Statistics**

| | education | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| REGR factor score 1 for analysis 1 | higher education | 46 | -,1413034 | ,9880593 | ,1456814 |
| | a degree below higher education | 40 | ,1624989 | 1,0011986 | ,1583034 |
| REGR factor score 2 for analysis 1 | higher education | 46 | 5,87E-02 | 1,0413789 | ,1535429 |
| | a degree below higher education | 40 | -6,8E-02 | ,9588701 | ,1516107 |
| REGR factor score 3 for analysis 1 | higher education | 46 | ,1614284 | 1,0749375 | ,1584909 |
| | a degree below higher education | 40 | -,1856426 | ,8832584 | ,1396554 |
| REGR factor score 4 for analysis 1 | higher education | 46 | -2,2E-02 | 1,1877856 | ,1751294 |
| | a degree below higher education | 40 | 2,51E-02 | ,7418843 | ,1173022 |
| REGR factor score 5 for analysis 1 | higher education | 46 | ,1714385 | 1,0028610 | ,1478638 |
| | a degree below higher education | 40 | -,1971542 | ,9718521 | ,1536633 |
| REGR factor score 6 for analysis 1 | higher education | 46 | -,1180619 | 1,0658803 | ,1571555 |
| | a degree below higher education | 40 | ,1357712 | ,9128279 | ,1443308 |
| REGR factor score 7 for analysis 1 | higher education | 46 | 5,81E-02 | 1,0047920 | ,1481485 |
| | a degree below higher education | 40 | -6,7E-02 | 1,0030006 | ,1585883 |
| REGR factor score 8 for analysis 1 | higher education | 46 | -,1024360 | ,9808180 | ,1446137 |
| | a degree below higher education | 40 | ,1178014 | 1,0212116 | ,1614677 |
| REGR factor score 9 for analysis 1 | higher education | 46 | -,1850198 | 1,2051532 | ,1776901 |
| | a degree below higher education | 40 | ,2127728 | ,6456299 | ,1020830 |
| REGR factor score 10 for analysis 1 | higher education | 46 | -6,3E-02 | 1,1538590 | ,1701272 |
| | a degree below higher education | 40 | 7,27E-02 | ,7957023 | ,1258116 |
| REGR factor score 11 for analysis 1 | higher education | 46 | -8,3E-02 | 1,0586972 | ,1560964 |
| | a degree below higher education | 40 | 9,51E-02 | ,9321314 | ,1473829 |
| REGR factor score 1 for analysis 2 | higher education | 46 | -,1413034 | ,9880593 | ,1456814 |
| | a degree below higher education | 40 | ,1624989 | 1,0011986 | ,1583034 |
| REGR factor score 2 for analysis 2 | higher education | 46 | 5,87E-02 | 1,0413789 | ,1535429 |
| | a degree below higher education | 40 | -6,8E-02 | ,9588701 | ,1516107 |
| REGR factor score 3 for analysis 2 | higher education | 46 | ,1614284 | 1,0749375 | ,1584909 |
| | a degree below higher education | 40 | -,1856426 | ,8832584 | ,1396554 |
| REGR factor score 4 for analysis 2 | higher education | 46 | -2,2E-02 | 1,1877856 | ,1751294 |
| | a degree below higher education | 40 | 2,51E-02 | ,7418843 | ,1173022 |
| REGR factor score 5 for analysis 2 | higher education | 46 | ,1714385 | 1,0028610 | ,1478638 |
| | a degree below higher education | 40 | -,1971542 | ,9718521 | ,1536633 |
| REGR factor score 6 for analysis 2 | higher education | 46 | -,1180619 | 1,0658803 | ,1571555 |
| | a degree below higher education | 40 | ,1357712 | ,9128279 | ,1443308 |
| REGR factor score 7 for analysis 2 | higher education | 46 | 5,81E-02 | 1,0047920 | ,1481485 |
| | a degree below higher education | 40 | -6,7E-02 | 1,0030006 | ,1585883 |
| REGR factor score 8 for analysis 2 | higher education | 46 | -,1024360 | ,9808180 | ,1446137 |
| | a degree below higher education | 40 | ,1178014 | 1,0212116 | ,1614677 |
| REGR factor score 9 for analysis 2 | higher education | 46 | -,1850198 | 1,2051532 | ,1776901 |
| | a degree below higher education | 40 | ,2127728 | ,6456299 | ,1020830 |
| REGR factor score 10 for analysis 2 | higher education | 46 | -6,3E-02 | 1,1538590 | ,1701272 |
| | a degree below higher education | 40 | 7,27E-02 | ,7957023 | ,1258116 |
| REGR factor score 11 for analysis 2 | higher education | 46 | -8,3E-02 | 1,0586972 | ,1560964 |
| | a degree below higher education | 40 | 9,51E-02 | ,9321314 | ,1473829 |

Table 36- Independent T- Test Results for Education Category and Factors – Independent Sample Tests

**Independent Samples Test**

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 95% Confidence Interval of the Difference | |
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | Lower | Upper |
| REGR factor score 1 for analysis 1 | Equal variances assumed | ,299 | ,586 | -1,413 | 84 | ,161 | -,3038022 | ,2149344 | -,7312228 | ,1236183 |
| | Equal variances not assumed | | | -1,412 | 82,036 | ,162 | -,3038022 | ,2151349 | -,7317713 | ,1241668 |
| REGR factor score 2 for analysis 1 | Equal variances assumed | ,323 | ,572 | ,582 | 84 | ,562 | ,1262478 | ,2170387 | -,3053575 | ,5578531 |
| | Equal variances not assumed | | | ,585 | 83,709 | ,560 | ,1262478 | ,2157805 | -,3028772 | ,5553727 |
| REGR factor score 3 for analysis 1 | Equal variances assumed | 1,452 | ,232 | 1,621 | 84 | ,109 | ,3470710 | ,2141530 | -7,9E-02 | ,7729378 |
| | Equal variances not assumed | | | 1,643 | 83,751 | ,104 | ,3470710 | ,2112416 | -7,3E-02 | ,7671563 |
| REGR factor score 4 for analysis 1 | Equal variances assumed | 7,411 | ,008 | -,216 | 84 | ,830 | -4,69E-02 | ,2174151 | -,4792917 | ,3854158 |
| | Equal variances not assumed | | | -,223 | 76,637 | ,824 | -4,69E-02 | ,2107846 | -,4666954 | ,3728195 |
| REGR factor score 5 for analysis 1 | Equal variances assumed | ,166 | ,685 | 1,725 | 84 | ,088 | ,3685927 | ,2137245 | -5,6E-02 | ,7936073 |
| | Equal variances not assumed | | | 1,728 | 82,993 | ,088 | ,3685927 | ,2132513 | -5,6E-02 | ,7927414 |
| REGR factor score 6 for analysis 1 | Equal variances assumed | ,099 | ,754 | -1,177 | 84 | ,243 | -,2538332 | ,2157047 | -,6827856 | ,1751192 |
| | Equal variances not assumed | | | -1,190 | 83,985 | ,238 | -,2538332 | ,2133758 | -,6781554 | ,1704890 |
| REGR factor score 7 for analysis 1 | Equal variances assumed | ,034 | ,854 | ,575 | 84 | ,567 | ,1248110 | ,2170486 | -,3068139 | ,5564360 |
| | Equal variances not assumed | | | ,575 | 82,390 | ,567 | ,1248110 | ,2170213 | -,3068828 | ,5565048 |
| REGR factor score 8 for analysis 1 | Equal variances assumed | ,044 | ,834 | -1,019 | 84 | ,311 | -,2202374 | ,2161437 | -,6500629 | ,2095881 |
| | Equal variances not assumed | | | -1,016 | 81,316 | ,313 | -,2202374 | ,2167601 | -,6514967 | ,2110219 |
| REGR factor score 9 for analysis 1 | Equal variances assumed | 17,197 | ,000 | -1,867 | 84 | ,065 | -,3977926 | ,2131003 | -,8215660 | 2,60E-02 |
| | Equal variances not assumed | | | -1,941 | 70,718 | ,056 | -,3977926 | ,2049262 | -,8064320 | 1,08E-02 |
| REGR factor score 10 for analysis 1 | Equal variances assumed | 5,302 | ,024 | -,626 | 84 | ,533 | -,1358544 | ,2169697 | -,5673223 | ,2956136 |
| | Equal variances not assumed | | | -,642 | 80,052 | ,523 | -,1358544 | ,2115935 | -,5569347 | ,2852260 |
| REGR factor score 11 for analysis 1 | Equal variances assumed | 2,900 | ,092 | -,821 | 84 | ,414 | -,1777945 | ,2166085 | -,6085442 | ,2529552 |
| | Equal variances not assumed | | | -,828 | 83,983 | ,410 | -,1777945 | ,2146807 | -,6047118 | ,2491229 |
| REGR factor score 1 for analysis 2 | Equal variances assumed | ,299 | ,586 | -1,413 | 84 | ,161 | -,3038022 | ,2149344 | -,7312228 | ,1236183 |
| | Equal variances not assumed | | | -1,412 | 82,036 | ,162 | -,3038022 | ,2151349 | -,7317713 | ,1241668 |
| REGR factor score 2 for analysis 2 | Equal variances assumed | ,323 | ,572 | ,582 | 84 | ,562 | ,1262478 | ,2170387 | -,3053575 | ,5578531 |
| | Equal variances not assumed | | | ,585 | 83,709 | ,560 | ,1262478 | ,2157805 | -,3028772 | ,5553727 |
| REGR factor score 3 for analysis 2 | Equal variances assumed | 1,452 | ,232 | 1,621 | 84 | ,109 | ,3470710 | ,2141530 | -7,9E-02 | ,7729378 |
| | Equal variances not assumed | | | 1,643 | 83,751 | ,104 | ,3470710 | ,2112416 | -7,3E-02 | ,7671563 |
| REGR factor score 4 for analysis 2 | Equal variances assumed | 7,411 | ,008 | -,216 | 84 | ,830 | -4,69E-02 | ,2174151 | -,4792917 | ,3854158 |
| | Equal variances not assumed | | | -,223 | 76,637 | ,824 | -4,69E-02 | ,2107846 | -,4666954 | ,3728195 |
| REGR factor score 5 for analysis 2 | Equal variances assumed | ,166 | ,685 | 1,725 | 84 | ,088 | ,3685927 | ,2137245 | -5,6E-02 | ,7936073 |
| | Equal variances not assumed | | | 1,728 | 82,993 | ,088 | ,3685927 | ,2132513 | -5,6E-02 | ,7927414 |
| REGR factor score 6 for analysis 2 | Equal variances assumed | ,099 | ,754 | -1,177 | 84 | ,243 | -,2538332 | ,2157047 | -,6827856 | ,1751192 |
| | Equal variances not assumed | | | -1,190 | 83,985 | ,238 | -,2538332 | ,2133758 | -,6781554 | ,1704890 |
| REGR factor score 7 for analysis 2 | Equal variances assumed | ,034 | ,854 | ,575 | 84 | ,567 | ,1248110 | ,2170486 | -,3068139 | ,5564360 |
| | Equal variances not assumed | | | ,575 | 82,390 | ,567 | ,1248110 | ,2170213 | -,3068828 | ,5565048 |
| REGR factor score 8 for analysis 2 | Equal variances assumed | ,044 | ,834 | -1,019 | 84 | ,311 | -,2202374 | ,2161437 | -,6500629 | ,2095881 |
| | Equal variances not assumed | | | -1,016 | 81,316 | ,313 | -,2202374 | ,2167601 | -,6514967 | ,2110219 |
| REGR factor score 9 for analysis 2 | Equal variances assumed | 17,197 | ,000 | -1,867 | 84 | ,065 | -,3977926 | ,2131003 | -,8215660 | 2,60E-02 |
| | Equal variances not assumed | | | -1,941 | 70,718 | ,056 | -,3977926 | ,2049262 | -,8064320 | 1,08E-02 |
| REGR factor score 10 for analysis 2 | Equal variances assumed | 5,302 | ,024 | -,626 | 84 | ,533 | -,1358544 | ,2169697 | -,5673223 | ,2956136 |
| | Equal variances not assumed | | | -,642 | 80,052 | ,523 | -,1358544 | ,2115935 | -,5569347 | ,2852260 |
| REGR factor score 11 for analysis 2 | Equal variances assumed | 2,900 | ,092 | -,821 | 84 | ,414 | -,1777945 | ,2166085 | -,6085442 | ,2529552 |
| | Equal variances not assumed | | | -,828 | 83,983 | ,410 | -,1777945 | ,2146807 | -,6047118 | ,2491229 |

## Table 37- ANOVA Results for Occupation Category and Factors – Descriptives

**Descriptives**

| | | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean Lower Bound | 95% Confidence Interval for Mean Upper Bound | Minimum | Maximum |
|---|---|---|---|---|---|---|---|---|---|
| REGR factor score 1 for analysis 2 | retired | 8 | -,3426203 | 1,1390613 | ,4027190 | -1,29490 | ,6096588 | -2,08869 | 1,16640 |
| | employed | 65 | ,1611272 | ,9368748 | ,1162050 | -7,1E-02 | ,3932734 | -2,85698 | 1,33348 |
| | student | 8 | -,6714988 | ,8261287 | ,2920806 | -1,36216 | 1,92E-02 | -1,82074 | ,53861 |
| | unemployed | 5 | -,4720627 | 1,3799656 | ,6171394 | -2,18552 | 1,2413909 | -2,01497 | ,95312 |
| | Total | 86 | -2,1E-17 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,85698 | 1,33348 |
| REGR factor score 2 for analysis 2 | retired | 8 | -,1673716 | 1,0436987 | ,3690032 | -1,03993 | ,7051823 | -1,65008 | 1,06368 |
| | employed | 65 | -7,7E-03 | ,9698865 | ,1202996 | -,2480153 | ,2326369 | -1,80120 | 2,11625 |
| | student | 8 | ,2812040 | 1,1940554 | ,4221623 | -,7170513 | 1,2794593 | -2,16933 | 1,62559 |
| | unemployed | 5 | -8,2E-02 | 1,2546565 | ,5610994 | -1,64003 | 1,4756901 | -1,97836 | 1,26190 |
| | Total | 86 | -3,6E-17 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,16933 | 2,11625 |
| REGR factor score 3 for analysis 2 | retired | 8 | -,3110919 | 1,3564166 | ,4795657 | -1,44508 | ,8229008 | -1,79101 | 1,31160 |
| | employed | 65 | 3,19E-02 | ,9861508 | ,1223170 | -,2124440 | ,2762684 | -2,42142 | 2,12268 |
| | student | 8 | ,1836219 | ,9749401 | ,3446934 | -,6314484 | ,9986922 | -,86491 | 1,75968 |
| | unemployed | 5 | -,2109071 | ,6883373 | ,3078338 | -1,06559 | ,6437766 | -,94040 | ,87855 |
| | Total | 86 | -5,2E-17 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,42142 | 2,12268 |
| REGR factor score 4 for analysis 2 | retired | 8 | -,1356726 | 1,4706082 | ,5199385 | -1,36513 | 1,0937866 | -2,18448 | 1,95539 |
| | employed | 65 | 6,45E-02 | ,9272000 | ,1150050 | -,1652728 | ,2942250 | -3,07873 | 1,80154 |
| | student | 8 | -,3247872 | 1,3179694 | ,4659725 | -1,42664 | ,7770628 | -2,07449 | 2,13200 |
| | unemployed | 5 | -,1014539 | ,5848617 | ,2615581 | -,8276557 | ,6247478 | -,71224 | ,59247 |
| | Total | 86 | 2,41E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -3,07873 | 2,13200 |
| REGR factor score 5 for analysis 2 | retired | 8 | -,6024103 | ,8751017 | ,3093952 | -1,33401 | ,1291930 | -1,91228 | ,66199 |
| | employed | 65 | -8,3E-02 | ,9734518 | ,1207418 | -,3237574 | ,1586617 | -2,29376 | 1,70347 |
| | student | 8 | 1,0350661 | ,7384119 | ,2610680 | ,4177383 | 1,6523939 | ,07176 | 1,94250 |
| | unemployed | 5 | ,3808731 | ,7958258 | ,3559041 | -,6072752 | 1,3690214 | -,93196 | 1,22401 |
| | Total | 86 | -4,5E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,29376 | 1,94250 |
| REGR factor score 6 for analysis 2 | retired | 8 | 1,29E-02 | ,5770107 | ,2040041 | -,4695045 | ,4952815 | -,86892 | ,78257 |
| | employed | 65 | ,1120173 | ,9469378 | ,1174532 | -,1226224 | ,3466570 | -2,59757 | 2,26129 |
| | student | 8 | -,9038168 | 1,4544024 | ,5142089 | -2,11973 | ,3120940 | -3,61702 | ,55039 |
| | unemployed | 5 | -3,1E-02 | ,8828124 | ,3948057 | -1,12690 | 1,0654167 | -1,35880 | ,98376 |
| | Total | 86 | -9,8E-17 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -3,61702 | 2,26129 |
| REGR factor score 7 for analysis 2 | retired | 8 | -,3596049 | ,9470424 | ,3348301 | -1,15135 | ,4321424 | -2,06209 | ,44535 |
| | employed | 65 | 3,81E-02 | ,9467829 | ,1174340 | -,1965234 | ,2726793 | -2,29456 | 2,30405 |
| | student | 8 | -,4289504 | 1,1864797 | ,4194839 | -1,42087 | ,5629715 | -1,95275 | 1,43530 |
| | unemployed | 5 | ,7666749 | 1,2204977 | ,5458231 | -,7487731 | 2,2821229 | -,81097 | 2,11067 |
| | Total | 86 | -1,5E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,29456 | 2,30405 |
| REGR factor score 8 for analysis 2 | retired | 8 | ,5691170 | ,8003120 | ,2829530 | -1,0E-01 | 1,2381946 | -,58371 | 1,37339 |
| | employed | 65 | -9,1E-03 | ,9087609 | ,1127179 | -,2342588 | ,2161010 | -2,38834 | 1,74221 |
| | student | 8 | -,9428733 | 1,0195314 | ,3604588 | -1,79522 | -9,1E-02 | -2,49640 | ,73079 |
| | unemployed | 5 | ,7160358 | 1,4242631 | ,6369498 | -1,05242 | 2,4844919 | -,64506 | 2,81032 |
| | Total | 86 | -1,4E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,49640 | 2,81032 |
| REGR factor score 9 for analysis 2 | retired | 8 | -,4243843 | 1,1813610 | ,4176742 | -1,41203 | ,5632581 | -3,06194 | ,62817 |
| | employed | 65 | 4,71E-02 | ,9342339 | ,1158775 | -,1844183 | ,2785654 | -1,99011 | 2,43225 |
| | student | 8 | -1,1E-02 | 1,4305678 | ,5057821 | -1,20722 | 1,1847531 | -3,06082 | 1,45497 |
| | unemployed | 5 | 8,50E-02 | ,9252399 | ,4137799 | -1,06381 | 1,2338660 | -1,41519 | 1,03210 |
| | Total | 86 | -4,2E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -3,06194 | 2,43225 |
| REGR factor score 10 for analysis 2 | retired | 8 | -,8164117 | 1,0636816 | ,3760682 | -1,70567 | 7,28E-02 | -2,55030 | ,80517 |
| | employed | 65 | ,1023676 | ,9899362 | ,1227865 | -,1429266 | ,3476618 | -2,17341 | 2,74018 |
| | student | 8 | -1,1E-02 | ,9120808 | ,3224693 | -,7730981 | ,7519392 | -1,31316 | 1,68438 |
| | unemployed | 5 | -7,6E-03 | ,7943500 | ,3552441 | -,9939088 | ,9787228 | -,90264 | ,74173 |
| | Total | 86 | -2,3E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,55030 | 2,74018 |
| REGR factor score 11 for analysis 2 | retired | 8 | ,1617517 | ,6888785 | ,2435553 | -,4141652 | ,7376685 | -1,44448 | ,53845 |
| | employed | 65 | -9,6E-02 | ,8729702 | ,1082786 | -,3127993 | ,1198236 | -2,01123 | 2,75077 |
| | student | 8 | ,1121984 | 1,6480180 | ,5826624 | -1,26558 | 1,4899759 | -2,85720 | 1,99333 |
| | unemployed | 5 | ,8160221 | 1,5531286 | ,6945802 | -1,11244 | 2,7444859 | -,61269 | 3,20452 |
| | Total | 86 | 2,27E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,85720 | 3,20452 |

Table 38- ANOVA Results for Occupation Category and Factors – Multiple Comparisons

**Multiple Comparisons**

Bonferroni

| Dependent Variable | (I) occupation | (J) occupation | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval Lower Bound | Upper Bound |
|---|---|---|---|---|---|---|---|
| REGR factor score 1 for analysis 2 | retired | employed | -,5037475 | ,3646102 | 1,000 | -1,48957 | ,4820744 |
| | | student | ,3288785 | ,4865629 | 1,000 | -,9866756 | 1,6444326 |
| | | unemployed | ,1294424 | ,5547671 | 1,000 | -1,37052 | 1,6294048 |
| | employed | retired | ,5037475 | ,3646102 | 1,000 | -,4820744 | 1,4895694 |
| | | student | ,8326259 | ,3646102 | ,150 | -,1531960 | 1,8184478 |
| | | unemployed | ,6331898 | ,4516233 | ,988 | -,5878956 | 1,8542752 |
| | student | retired | -,3288785 | ,4865629 | 1,000 | -1,64443 | ,9866756 |
| | | employed | -,8326259 | ,3646102 | ,150 | -1,81845 | ,1531960 |
| | | unemployed | -,1994361 | ,5547671 | 1,000 | -1,69940 | 1,3005263 |
| | unemployed | retired | -,1294424 | ,5547671 | 1,000 | -1,62940 | 1,3705201 |
| | | employed | -,6331898 | ,4516233 | ,988 | -1,85428 | ,5878956 |
| | | student | ,1994361 | ,5547671 | 1,000 | -1,30053 | 1,6993985 |
| REGR factor score 2 for analysis 2 | retired | employed | -,1596824 | ,3794596 | 1,000 | -1,18565 | ,8662889 |
| | | student | -,4485756 | ,5063791 | 1,000 | -1,81771 | ,9205568 |
| | | unemployed | -8,52E-02 | ,5773610 | 1,000 | -1,64625 | 1,4758512 |
| | employed | retired | ,1596824 | ,3794596 | 1,000 | -,8662889 | 1,1856536 |
| | | student | -,2888932 | ,3794596 | 1,000 | -1,31486 | ,7370781 |
| | | unemployed | 7,448E-02 | ,4700165 | 1,000 | -1,19633 | 1,3452988 |
| | student | retired | ,4485756 | ,5063791 | 1,000 | -,9205568 | 1,8177079 |
| | | employed | ,2888932 | ,3794596 | 1,000 | -,7370781 | 1,3148645 |
| | | unemployed | ,3633757 | ,5773610 | 1,000 | -1,19768 | 1,9244268 |
| | unemployed | retired | 8,520E-02 | ,5773610 | 1,000 | -1,47585 | 1,6462510 |
| | | employed | -7,45E-02 | ,4700165 | 1,000 | -1,34530 | 1,1963339 |
| | | student | -,3633757 | ,5773610 | 1,000 | -1,92443 | 1,1976754 |
| REGR factor score 3 for analysis 2 | retired | employed | -,3430041 | ,3784696 | 1,000 | -1,36630 | ,6802907 |
| | | student | -,4947138 | ,5050581 | 1,000 | -1,86027 | ,8708469 |
| | | unemployed | -,1001848 | ,5758548 | 1,000 | -1,65716 | 1,4567939 |
| | employed | retired | ,3430041 | ,3784696 | 1,000 | -,6802907 | 1,3662989 |
| | | student | -,1517097 | ,3784696 | 1,000 | -1,17500 | ,8715851 |
| | | unemployed | ,2428193 | ,4687903 | 1,000 | -1,02468 | 1,5103204 |
| | student | retired | ,4947138 | ,5050581 | 1,000 | -,8708469 | 1,8602744 |
| | | employed | ,1517097 | ,3784696 | 1,000 | -,8715851 | 1,1750044 |
| | | unemployed | ,3945290 | ,5758548 | 1,000 | -1,16245 | 1,9515077 |
| | unemployed | retired | ,1001848 | ,5758548 | 1,000 | -1,45679 | 1,6571635 |
| | | employed | -,2428193 | ,4687903 | 1,000 | -1,51032 | 1,0246817 |
| | | student | -,3945290 | ,5758548 | 1,000 | -1,95151 | 1,1624497 |
| REGR factor score 4 for analysis 2 | retired | employed | -,2001488 | ,3785143 | 1,000 | -1,22356 | ,8232667 |
| | | student | ,1891145 | ,5051176 | 1,000 | -1,17661 | 1,5548362 |
| | | unemployed | -3,42E-02 | ,5759227 | 1,000 | -1,59138 | 1,5229436 |
| | employed | retired | ,2001488 | ,3785143 | 1,000 | -,8232667 | 1,2235642 |
| | | student | ,3892633 | ,3785143 | 1,000 | -,6341521 | 1,4126787 |
| | | unemployed | ,1659300 | ,4688456 | 1,000 | -1,10172 | 1,4335806 |
| | student | retired | -,1891145 | ,5051176 | 1,000 | -1,55484 | 1,1766072 |
| | | employed | -,3892633 | ,3785143 | 1,000 | -1,41268 | ,6341521 |
| | | unemployed | -,2233333 | ,5759227 | 1,000 | -1,78050 | 1,3338290 |
| | unemployed | retired | 3,422E-02 | ,5759227 | 1,000 | -1,52294 | 1,5913811 |
| | | employed | -,1659300 | ,4688456 | 1,000 | -1,43358 | 1,1017205 |
| | | student | ,2233333 | ,5759227 | 1,000 | -1,33383 | 1,7804956 |
| REGR factor score 5 for analysis 2 | retired | employed | -,5198624 | ,3519615 | ,861 | -1,47149 | ,4317603 |
| | | student | -1,6374764* | ,4696836 | ,005 | -2,90739 | -,3675602 |
| | | unemployed | -,9832835 | ,5355217 | ,420 | -2,43121 | ,4646438 |
| | employed | retired | ,5198624 | ,3519615 | ,861 | -,4317603 | 1,4714852 |
| | | student | -1,1176140* | ,3519615 | ,013 | -2,06924 | -,1659912 |
| | | unemployed | -,4634210 | ,4359561 | 1,000 | -1,64215 | ,7153038 |
| | student | retired | 1,6374764* | ,4696836 | ,005 | ,3675602 | 2,9073927 |
| | | employed | 1,1176140* | ,3519615 | ,013 | ,1659912 | 2,0692368 |
| | | unemployed | ,6541930 | ,5355217 | 1,000 | -,7937343 | 2,1021203 |
| | unemployed | retired | ,9832835 | ,5355217 | ,420 | -,4646438 | 2,4312108 |
| | | employed | ,4634210 | ,4359561 | 1,000 | -,7153038 | 1,6421458 |
| | | student | -,6541930 | ,5355217 | 1,000 | -2,10212 | ,7937343 |
| REGR factor score 6 for analysis 2 | retired | employed | -9,91E-02 | ,3645900 | 1,000 | -1,08490 | ,8866385 |
| | | student | ,9167053 | ,4865360 | ,379 | -,3987758 | 2,2321865 |
| | | unemployed | 4,363E-02 | ,5547363 | 1,000 | -1,45625 | 1,5435074 |
| | employed | retired | 9,913E-02 | ,3645900 | 1,000 | -,8866385 | 1,0848961 |
| | | student | 1,0158341* | ,3645900 | ,040 | 3,01E-02 | 2,0016014 |
| | | unemployed | ,1427569 | ,4515983 | 1,000 | -1,07826 | 1,3637746 |
| | student | retired | -,9167053 | ,4865360 | ,379 | -2,23219 | ,3987758 |
| | | employed | -1,0158341* | ,3645900 | ,040 | -2,00160 | -3,0E-02 |
| | | unemployed | -,8730772 | ,5547363 | ,716 | -2,37296 | ,6268021 |
| | unemployed | retired | -4,36E-02 | ,5547363 | 1,000 | -1,54351 | 1,4562512 |
| | | employed | -,1427569 | ,4515983 | 1,000 | -1,36377 | 1,0782608 |
| | | student | ,8730772 | ,5547363 | ,716 | -,6268021 | 2,3729565 |

*. The mean difference is significant at the .05 level.

Table 38- ANOVA Results for Occupation Category and Factors – Multiple Comparisons (con.)

**Multiple Comparisons**

Bonferroni

| Dependent Variable | (I) occupation | (J) occupation | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval Lower Bound | 95% Confidence Interval Upper Bound |
|---|---|---|---|---|---|---|---|
| REGR factor score 7 for analysis 2 | retired | employed | -,3976829 | ,3688314 | 1,000 | -1,39492 | ,5995523 |
| | | student | 6,935E-02 | ,4921961 | 1,000 | -1,26144 | 1,4001304 |
| | | unemployed | -1,1262798 | ,5611899 | ,288 | -2,64361 | ,3910484 |
| | employed | retired | ,3976829 | ,3688314 | 1,000 | -,5995523 | 1,3949180 |
| | | student | ,4670284 | ,3688314 | 1,000 | -,5302068 | 1,4642636 |
| | | unemployed | -,7285969 | ,4568520 | ,688 | -1,96382 | ,5066255 |
| | student | retired | -6,93E-02 | ,4921961 | 1,000 | -1,40013 | 1,2614393 |
| | | employed | -,4670284 | ,3688314 | 1,000 | -1,46426 | ,5302068 |
| | | unemployed | -1,1956253 | ,5611899 | ,217 | -2,71295 | ,3217029 |
| | unemployed | retired | 1,1262798 | ,5611899 | ,288 | -,3910484 | 2,6436079 |
| | | employed | ,7285969 | ,4568520 | ,688 | -,5066255 | 1,9638194 |
| | | student | 1,1956253 | ,5611899 | ,217 | -,3217029 | 2,7129535 |
| REGR factor score 8 for analysis 2 | retired | employed | ,5781959 | ,3528607 | ,631 | -,3758581 | 1,5322499 |
| | | student | 1,5119903* | ,4708836 | ,011 | ,2388297 | 2,7851510 |
| | | unemployed | -,1469187 | ,5368899 | 1,000 | -1,59855 | 1,3047078 |
| | employed | retired | -,5781959 | ,3528607 | ,631 | -1,53225 | ,3758581 |
| | | student | ,9337944 | ,3528607 | ,059 | -2,0E-02 | 1,8878484 |
| | | unemployed | -,7251147 | ,4370699 | ,606 | -1,90685 | ,4566216 |
| | student | retired | -1,5119903* | ,4708836 | ,011 | -2,78515 | -,2388297 |
| | | employed | -,9337944 | ,3528607 | ,059 | -1,88785 | 2,03E-02 |
| | | unemployed | -1,6589091* | ,5368899 | ,016 | -3,11054 | -,2072826 |
| | unemployed | retired | ,1469187 | ,5368899 | 1,000 | -1,30471 | 1,5985452 |
| | | employed | ,7251147 | ,4370699 | ,606 | -,4566216 | 1,9068509 |
| | | student | 1,6589091* | ,5368899 | ,016 | ,2072826 | 3,1105356 |
| REGR factor score 9 for analysis 2 | retired | employed | -,4714579 | ,3778144 | 1,000 | -1,49298 | ,5500653 |
| | | student | -,4131529 | ,5041837 | 1,000 | -1,77635 | ,9500437 |
| | | unemployed | -,5094132 | ,5748578 | 1,000 | -2,06370 | 1,0448700 |
| | employed | retired | ,4714579 | ,3778144 | 1,000 | -,5500653 | 1,4929811 |
| | | student | 5,831E-02 | ,3778144 | 1,000 | -,9632182 | 1,0798282 |
| | | unemployed | -3,80E-02 | ,4679787 | 1,000 | -1,30326 | 1,2273514 |
| | student | retired | ,4131529 | ,5041837 | 1,000 | -,9500437 | 1,7763494 |
| | | employed | -5,83E-02 | ,3778144 | 1,000 | -1,07983 | ,9632182 |
| | | unemployed | -9,63E-02 | ,5748578 | 1,000 | -1,65054 | 1,4580228 |
| | unemployed | retired | ,5094132 | ,5748578 | 1,000 | -1,04487 | 2,0636965 |
| | | employed | 3,796E-02 | ,4679787 | 1,000 | -1,22735 | 1,3032621 |
| | | student | 9,626E-02 | ,5748578 | 1,000 | -1,45802 | 1,6505436 |
| REGR factor score 10 for analysis 2 | retired | employed | -,9187793 | ,3677277 | ,087 | -1,91303 | 7,55E-02 |
| | | student | -,8058322 | ,4907232 | ,626 | -2,13263 | ,5209704 |
| | | unemployed | -,8088186 | ,5595106 | ,913 | -2,32161 | ,7039691 |
| | employed | retired | ,9187793 | ,3677277 | ,087 | -7,5E-02 | 1,9130304 |
| | | student | ,1129471 | ,3677277 | 1,000 | -,8813040 | 1,1071982 |
| | | unemployed | ,1099607 | ,4554849 | 1,000 | -1,12157 | 1,3414868 |
| | student | retired | ,8058322 | ,4907232 | ,626 | -,5209704 | 2,1326348 |
| | | employed | -,1129471 | ,3677277 | 1,000 | -1,10720 | ,8813040 |
| | | unemployed | -2,99E-03 | ,5595106 | 1,000 | -1,51577 | 1,5098013 |
| | unemployed | retired | ,8088186 | ,5595106 | ,913 | -,7039691 | 2,3216064 |
| | | employed | -,1099607 | ,4554849 | 1,000 | -1,34149 | 1,1215655 |
| | | student | 2,986E-03 | ,5595106 | 1,000 | -1,50980 | 1,5157742 |
| REGR factor score 11 for analysis 2 | retired | employed | ,2582396 | ,3718250 | 1,000 | -,7470895 | 1,2635687 |
| | | student | 4,955E-02 | ,4961909 | 1,000 | -1,29203 | 1,3911392 |
| | | unemployed | -,6542704 | ,5657447 | 1,000 | -2,18391 | ,8753730 |
| | employed | retired | -,2582396 | ,3718250 | 1,000 | -1,26357 | ,7470895 |
| | | student | -,2086863 | ,3718250 | 1,000 | -1,21402 | ,7966428 |
| | | unemployed | -,9125099 | ,4605599 | ,305 | -2,15776 | ,3327380 |
| | student | retired | -4,96E-02 | ,4961909 | 1,000 | -1,39114 | 1,2920327 |
| | | employed | ,2086863 | ,3718250 | 1,000 | -,7966428 | 1,2140154 |
| | | unemployed | -,7038236 | ,5657447 | 1,000 | -2,23347 | ,8258197 |
| | unemployed | retired | ,6542704 | ,5657447 | 1,000 | -,8753730 | 2,1839137 |
| | | employed | ,9125099 | ,4605599 | ,305 | -,3327380 | 2,1577579 |
| | | student | ,7038236 | ,5657447 | 1,000 | -,8258197 | 2,2334670 |

*. The mean difference is significant at the .05 level.

Table 39- Independent T- Test Results for Economical Consideration Category and Factors – Group Statistics

**Group Statistics**

| | economical consideration | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| REGR factor score 1 for analysis 1 | yes | 21 | -,7217388 | ,9036306 | ,1971884 |
| | no | 65 | ,2331772 | ,9202228 | ,1141396 |
| REGR factor score 2 for analysis 1 | yes | 21 | ,1837065 | 1,0886364 | ,2375599 |
| | no | 65 | -5,9E-02 | ,9711441 | ,1204556 |
| REGR factor score 3 for analysis 1 | yes | 21 | ,2967467 | ,8757450 | ,1911032 |
| | no | 65 | -9,6E-02 | 1,0248074 | ,1271117 |
| REGR factor score 4 for analysis 1 | yes | 21 | ,1432571 | 1,0644735 | ,2322872 |
| | no | 65 | -4,6E-02 | ,9824055 | ,1218524 |
| REGR factor score 5 for analysis 1 | yes | 21 | ,3309799 | 1,1066476 | ,2414903 |
| | no | 65 | -,1069320 | ,9475534 | ,1175295 |
| REGR factor score 6 for analysis 1 | yes | 21 | -,1894058 | 1,3746661 | ,2999767 |
| | no | 65 | 6,12E-02 | ,8497159 | ,1053943 |
| REGR factor score 7 for analysis 1 | yes | 21 | -,3874046 | 1,0986069 | ,2397357 |
| | no | 65 | ,1251615 | ,9411701 | ,1167373 |
| REGR factor score 8 for analysis 1 | yes | 21 | -5,1E-02 | 1,2432762 | ,2713051 |
| | no | 65 | 1,66E-02 | ,9186588 | ,1139456 |
| REGR factor score 9 for analysis 1 | yes | 21 | ,1622595 | 1,0292632 | ,2246036 |
| | no | 65 | -5,2E-02 | ,9927930 | ,1231403 |
| REGR factor score 10 for analysis 1 | yes | 21 | ,2120979 | 1,1515878 | ,2512971 |
| | no | 65 | -6,9E-02 | ,9456067 | ,1172881 |
| REGR factor score 11 for analysis 1 | yes | 21 | 3,88E-02 | 1,3650640 | ,2978814 |
| | no | 65 | -1,3E-02 | ,8632254 | ,1070699 |
| REGR factor score 1 for analysis 2 | yes | 21 | -,7217388 | ,9036306 | ,1971884 |
| | no | 65 | ,2331772 | ,9202228 | ,1141396 |
| REGR factor score 2 for analysis 2 | yes | 21 | ,1837065 | 1,0886364 | ,2375599 |
| | no | 65 | -5,9E-02 | ,9711441 | ,1204556 |
| REGR factor score 3 for analysis 2 | yes | 21 | ,2967467 | ,8757450 | ,1911032 |
| | no | 65 | -9,6E-02 | 1,0248074 | ,1271117 |
| REGR factor score 4 for analysis 2 | yes | 21 | ,1432571 | 1,0644735 | ,2322872 |
| | no | 65 | -4,6E-02 | ,9824055 | ,1218524 |
| REGR factor score 5 for analysis 2 | yes | 21 | ,3309799 | 1,1066476 | ,2414903 |
| | no | 65 | -,1069320 | ,9475534 | ,1175295 |
| REGR factor score 6 for analysis 2 | yes | 21 | -,1894058 | 1,3746661 | ,2999767 |
| | no | 65 | 6,12E-02 | ,8497159 | ,1053943 |
| REGR factor score 7 for analysis 2 | yes | 21 | -,3874046 | 1,0986069 | ,2397357 |
| | no | 65 | ,1251615 | ,9411701 | ,1167373 |
| REGR factor score 8 for analysis 2 | yes | 21 | -5,1E-02 | 1,2432762 | ,2713051 |
| | no | 65 | 1,66E-02 | ,9186588 | ,1139456 |
| REGR factor score 9 for analysis 2 | yes | 21 | ,1622595 | 1,0292632 | ,2246036 |
| | no | 65 | -5,2E-02 | ,9927930 | ,1231403 |
| REGR factor score 10 for analysis 2 | yes | 21 | ,2120979 | 1,1515878 | ,2512971 |
| | no | 65 | -6,9E-02 | ,9456067 | ,1172881 |
| REGR factor score 11 for analysis 2 | yes | 21 | 3,88E-02 | 1,3650640 | ,2978814 |
| | no | 65 | -1,3E-02 | ,8632254 | ,1070699 |

Table 40- Independent T- Test Results for Economical Consideration Category and Factors – Independent Sample Tests

**Independent Samples Test**

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 95% Confidence Interval of the Difference | |
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | Lower | Upper |
| REGR factor score 1 for analysis 1 | Equal variances assumed | ,008 | ,929 | -4,152 | 84 | ,000 | -,9549160 | ,2299960 | -1,41229 | -,4975437 |
| | Equal variances not assumed | | | -4,191 | 34,439 | ,000 | -,9549160 | ,2278401 | -1,41773 | -,4921066 |
| REGR factor score 2 for analysis 1 | Equal variances assumed | ,117 | ,733 | ,968 | 84 | ,336 | ,2430579 | ,2510984 | -,2562788 | ,7423946 |
| | Equal variances not assumed | | | ,913 | 30,966 | ,369 | ,2430579 | ,2663537 | -,3001979 | ,7863136 |
| REGR factor score 3 for analysis 1 | Equal variances assumed | ,658 | ,420 | 1,578 | 84 | ,118 | ,3926187 | ,2488345 | -,1022159 | ,8874533 |
| | Equal variances not assumed | | | 1,711 | 39,213 | ,095 | ,3926187 | ,2295165 | -7,2E-02 | ,8567791 |
| REGR factor score 4 for analysis 1 | Equal variances assumed | ,213 | ,646 | ,753 | 84 | ,453 | ,1895402 | ,2516466 | -,3108867 | ,6899671 |
| | Equal variances not assumed | | | ,723 | 31,770 | ,475 | ,1895402 | ,2623077 | -,3449149 | ,7239953 |
| REGR factor score 5 for analysis 1 | Equal variances assumed | ,372 | ,544 | 1,766 | 84 | ,081 | ,4379118 | ,2479330 | -5,5E-02 | ,9309538 |
| | Equal variances not assumed | | | 1,631 | 30,069 | ,113 | ,4379118 | ,2685717 | -,1105317 | ,9863554 |
| REGR factor score 6 for analysis 1 | Equal variances assumed | 8,681 | ,004 | -,998 | 84 | ,321 | -,2505985 | ,2510101 | -,7497597 | ,2485627 |
| | Equal variances not assumed | | | -,788 | 25,123 | ,438 | -,2505985 | ,3179528 | -,9052724 | ,4040754 |
| REGR factor score 7 for analysis 1 | Equal variances assumed | ,576 | ,450 | -2,082 | 84 | ,040 | -,5125661 | ,2462236 | -1,00221 | -2,3E-02 |
| | Equal variances not assumed | | | -1,922 | 30,081 | ,064 | -,5125661 | ,2666475 | -1,05707 | 3,19E-02 |
| REGR factor score 8 for analysis 1 | Equal variances assumed | 2,275 | ,135 | -,270 | 84 | ,788 | -6,81E-02 | ,2523858 | -,5699534 | ,4338401 |
| | Equal variances not assumed | | | -,231 | 27,411 | ,819 | -6,81E-02 | ,2942619 | -,6714084 | ,5352951 |
| REGR factor score 9 for analysis 1 | Equal variances assumed | ,167 | ,683 | ,854 | 84 | ,396 | ,2146818 | ,2514061 | -,2852668 | ,7146304 |
| | Equal variances not assumed | | | ,838 | 32,902 | ,408 | ,2146818 | ,2561454 | -,3065091 | ,7358727 |
| REGR factor score 10 for analysis 1 | Equal variances assumed | ,741 | ,392 | 1,120 | 84 | ,266 | ,2806218 | ,2506316 | -,2177867 | ,7790303 |
| | Equal variances not assumed | | | 1,012 | 29,229 | ,320 | ,2806218 | ,2773206 | -,2863694 | ,8476130 |
| REGR factor score 11 for analysis 1 | Equal variances assumed | 4,260 | ,042 | ,204 | 84 | ,839 | 5,137E-02 | ,2524327 | -,4506200 | ,5533604 |
| | Equal variances not assumed | | | ,162 | 25,369 | ,872 | 5,137E-02 | ,3165396 | -,6000743 | ,7028147 |
| REGR factor score 1 for analysis 2 | Equal variances assumed | ,008 | ,929 | -4,152 | 84 | ,000 | -,9549160 | ,2299960 | -1,41229 | -,4975437 |
| | Equal variances not assumed | | | -4,191 | 34,439 | ,000 | -,9549160 | ,2278401 | -1,41773 | -,4921066 |
| REGR factor score 2 for analysis 2 | Equal variances assumed | ,117 | ,733 | ,968 | 84 | ,336 | ,2430579 | ,2510984 | -,2562788 | ,7423946 |
| | Equal variances not assumed | | | ,913 | 30,966 | ,369 | ,2430579 | ,2663537 | -,3001979 | ,7863136 |
| REGR factor score 3 for analysis 2 | Equal variances assumed | ,658 | ,420 | 1,578 | 84 | ,118 | ,3926187 | ,2488345 | -,1022159 | ,8874533 |
| | Equal variances not assumed | | | 1,711 | 39,213 | ,095 | ,3926187 | ,2295165 | -7,2E-02 | ,8567791 |
| REGR factor score 4 for analysis 2 | Equal variances assumed | ,213 | ,646 | ,753 | 84 | ,453 | ,1895402 | ,2516466 | -,3108867 | ,6899671 |
| | Equal variances not assumed | | | ,723 | 31,770 | ,475 | ,1895402 | ,2623077 | -,3449149 | ,7239953 |
| REGR factor score 5 for analysis 2 | Equal variances assumed | ,372 | ,544 | 1,766 | 84 | ,081 | ,4379118 | ,2479330 | -5,5E-02 | ,9309538 |
| | Equal variances not assumed | | | 1,631 | 30,069 | ,113 | ,4379118 | ,2685717 | -,1105317 | ,9863554 |
| REGR factor score 6 for analysis 2 | Equal variances assumed | 8,681 | ,004 | -,998 | 84 | ,321 | -,2505985 | ,2510101 | -,7497597 | ,2485627 |
| | Equal variances not assumed | | | -,788 | 25,123 | ,438 | -,2505985 | ,3179528 | -,9052724 | ,4040754 |
| REGR factor score 7 for analysis 2 | Equal variances assumed | ,576 | ,450 | -2,082 | 84 | ,040 | -,5125661 | ,2462236 | -1,00221 | -2,3E-02 |
| | Equal variances not assumed | | | -1,922 | 30,081 | ,064 | -,5125661 | ,2666475 | -1,05707 | 3,19E-02 |
| REGR factor score 8 for analysis 2 | Equal variances assumed | 2,275 | ,135 | -,270 | 84 | ,788 | -6,81E-02 | ,2523858 | -,5699534 | ,4338401 |
| | Equal variances not assumed | | | -,231 | 27,411 | ,819 | -6,81E-02 | ,2942619 | -,6714084 | ,5352951 |
| REGR factor score 9 for analysis 2 | Equal variances assumed | ,167 | ,683 | ,854 | 84 | ,396 | ,2146818 | ,2514061 | -,2852668 | ,7146304 |
| | Equal variances not assumed | | | ,838 | 32,902 | ,408 | ,2146818 | ,2561454 | -,3065091 | ,7358727 |
| REGR factor score 10 for analysis 2 | Equal variances assumed | ,741 | ,392 | 1,120 | 84 | ,266 | ,2806218 | ,2506316 | -,2177867 | ,7790303 |
| | Equal variances not assumed | | | 1,012 | 29,229 | ,320 | ,2806218 | ,2773206 | -,2863694 | ,8476130 |
| REGR factor score 11 for analysis 2 | Equal variances assumed | 4,260 | ,042 | ,204 | 84 | ,839 | 5,137E-02 | ,2524327 | -,4506200 | ,5533604 |
| | Equal variances not assumed | | | ,162 | 25,369 | ,872 | 5,137E-02 | ,3165396 | -,6000743 | ,7028147 |

Table 41- ANOVA Results for Place of Vacation Category and Factors – Descriptives

**Descriptives**

| | | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean Lower Bound | 95% Confidence Interval for Mean Upper Bound | Minimum | Maximum |
|---|---|---|---|---|---|---|---|---|---|
| REGR factor score 1 for analysis 2 | forest | 20 | -,1905031 | 1,2484706 | ,2791665 | -,7748053 | ,3937992 | -2,85698 | 1,33348 |
| | coastal | 35 | -,2703573 | ,8308149 | ,1404334 | -,5557522 | 1,50E-02 | -2,59644 | ,95312 |
| | relatives | 4 | -1,33330 | ,8313561 | ,4156781 | -2,65617 | -1,0E-02 | -2,08869 | -,17036 |
| | other | 27 | ,6891026 | ,5048568 | 9,72E-02 | ,4893879 | ,8888173 | -1,28957 | 1,16640 |
| | Total | 86 | -8,3E-17 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,85698 | 1,33348 |
| REGR factor score 2 for analysis 2 | forest | 20 | -,1448353 | ,9544697 | ,2134259 | -,5915409 | ,3018703 | -1,97836 | 1,52348 |
| | coastal | 35 | ,2119815 | 1,0958576 | ,1852337 | -,1644587 | ,5884218 | -2,16933 | 2,11625 |
| | relatives | 4 | -,5080246 | 1,0547487 | ,5273744 | -2,18637 | 1,1703160 | -1,65008 | ,75855 |
| | other | 27 | -9,2E-02 | ,8829180 | ,1699176 | -,4415133 | ,2570282 | -1,53014 | 1,66597 |
| | Total | 86 | 1,03E-17 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,16933 | 2,11625 |
| REGR factor score 3 for analysis 2 | forest | 20 | ,1421195 | 1,0107571 | ,2260122 | -,3309294 | ,6151684 | -2,25454 | 1,76938 |
| | coastal | 35 | -1,1E-02 | 1,0285610 | ,1738585 | -,3644615 | ,3421847 | -1,96790 | 2,12268 |
| | relatives | 4 | -,8672804 | 1,0904321 | ,5452161 | -2,60240 | ,8678404 | -1,66699 | ,65902 |
| | other | 27 | 3,77E-02 | ,9322582 | ,1794132 | -,3311381 | ,4064401 | -2,42142 | 1,52105 |
| | Total | 86 | -2,8E-17 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,42142 | 2,12268 |
| REGR factor score 4 for analysis 2 | forest | 20 | -2,1E-02 | 1,2207819 | ,2729751 | -,5921569 | ,5505301 | -3,07873 | 1,95539 |
| | coastal | 35 | 6,95E-02 | ,9238228 | ,1561546 | -,2478135 | ,3868750 | -2,07449 | 2,13200 |
| | relatives | 4 | -,3272731 | 1,0180311 | ,5090155 | -1,94719 | 1,2926416 | -1,33982 | ,56222 |
| | other | 27 | -2,6E-02 | ,9594238 | ,1846412 | -,4057656 | ,3533052 | -2,18448 | 1,56378 |
| | Total | 86 | 2,87E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -3,07873 | 2,13200 |
| REGR factor score 5 for analysis 2 | forest | 20 | 3,90E-02 | ,8661535 | ,1936778 | -,3663702 | ,4443744 | -2,03228 | 1,70347 |
| | coastal | 35 | ,4326795 | ,9934322 | ,1679207 | 9,14E-02 | ,7739354 | -2,29376 | 1,94250 |
| | relatives | 4 | ,2383574 | 1,0577888 | ,5288944 | -1,44482 | 1,9215355 | -1,27458 | 1,17591 |
| | other | 27 | -,6250835 | ,7960093 | ,1531921 | -,9399743 | -,3101926 | -1,72920 | ,44644 |
| | Total | 86 | -4,1E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,29376 | 1,94250 |
| REGR factor score 6 for analysis 2 | forest | 20 | 7,67E-04 | ,8528137 | ,1906949 | -,3983618 | ,3998963 | -1,75958 | 1,57271 |
| | coastal | 35 | -,2521304 | 1,1534782 | ,1949734 | -,6483641 | ,1441032 | -3,61702 | 1,54807 |
| | relatives | 4 | 9,26E-02 | ,5204615 | ,2602307 | -,7355760 | ,9207647 | -,64322 | ,55039 |
| | other | 27 | ,3125497 | ,8821873 | ,1697770 | -3,6E-02 | ,6615314 | -,79244 | 2,26129 |
| | Total | 86 | -1,2E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -3,61702 | 2,26129 |
| REGR factor score 7 for analysis 2 | forest | 20 | ,5517276 | 1,0969626 | ,2452883 | 3,83E-02 | 1,0651219 | -2,06209 | 2,30405 |
| | coastal | 35 | -4,6E-03 | 1,0240529 | ,1730965 | -,3563607 | ,3471882 | -2,29456 | 1,79414 |
| | relatives | 4 | -,8839126 | 1,1155270 | ,5577635 | -2,65896 | ,8911398 | -1,95275 | ,44535 |
| | other | 27 | -,2717919 | ,6662121 | ,1282126 | -,5353366 | -8,2E-03 | -1,59446 | 1,06478 |
| | Total | 86 | -1,8E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,29456 | 2,30405 |
| REGR factor score 8 for analysis 2 | forest | 20 | 8,05E-02 | 1,0726266 | ,2398466 | -,4214950 | ,5825144 | -1,51717 | 2,81032 |
| | coastal | 35 | -6,7E-02 | 1,0758450 | ,1818510 | -,4364771 | ,3026542 | -2,49640 | 1,69333 |
| | relatives | 4 | ,5585246 | ,9252473 | ,4626237 | -,9137503 | 2,0307996 | -,55888 | 1,37339 |
| | other | 27 | -5,6E-02 | ,8682641 | ,1670975 | -,3991180 | ,2878297 | -2,38834 | 1,74221 |
| | Total | 86 | -9,6E-17 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,49640 | 2,81032 |
| REGR factor score 9 for analysis 2 | forest | 20 | -,4700683 | 1,0134936 | ,2266241 | -,9443979 | 4,26E-03 | -3,06194 | 1,03210 |
| | coastal | 35 | -3,9E-02 | 1,1250635 | ,1901704 | -,4251298 | ,3478158 | -3,06082 | 1,71136 |
| | relatives | 4 | -,3151972 | 1,0584808 | ,5292404 | -1,99948 | 1,3690820 | -1,77459 | ,62817 |
| | other | 27 | ,4450055 | ,5841082 | ,1124117 | ,2139400 | ,6760710 | -,51701 | 2,43225 |
| | Total | 86 | -3,9E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -3,06194 | 2,43225 |
| REGR factor score 10 for analysis 2 | forest | 20 | -,2554353 | 1,0226640 | ,2286746 | -,7340567 | ,2231862 | -2,55030 | 1,65402 |
| | coastal | 35 | 3,28E-03 | 1,0916100 | ,1845158 | -,3717022 | ,3782601 | -2,17341 | 2,74018 |
| | relatives | 4 | ,4537625 | 1,2905549 | ,6452775 | -1,59980 | 2,5073234 | -,60452 | 2,33443 |
| | other | 27 | ,1177367 | ,8113237 | ,1561393 | -,2032122 | ,4386857 | -1,70612 | 1,88070 |
| | Total | 86 | -2,5E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,55030 | 2,74018 |
| REGR factor score 11 for analysis 2 | forest | 20 | ,1075529 | 1,1469781 | ,2564721 | -,4292493 | ,6443552 | -2,01123 | 3,20452 |
| | coastal | 35 | -,1451757 | 1,0998516 | ,1859089 | -,5229879 | ,2326366 | -2,85720 | 2,75077 |
| | relatives | 4 | ,6783699 | ,7288046 | ,3644023 | -,4813208 | 1,8380607 | -,03396 | 1,69750 |
| | other | 27 | 8,02E-03 | ,7460286 | ,1435733 | -,2870964 | ,3031417 | -1,90811 | 1,49375 |
| | Total | 86 | 2,06E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,85720 | 3,20452 |

Table 42- ANOVA Results for Place of Vacation Category and Factors – Multiple Comparisons

**Multiple Comparisons**

Bonferroni

| Dependent Variable | (I) PLACE | (J) PLACE | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval Lower Bound | 95% Confidence Interval Upper Bound |
|---|---|---|---|---|---|---|---|
| REGR factor score 1 for analysis 2 | forest | coastal | 7,985E-02 | ,2433117 | 1,000 | -,5780045 | ,7377129 |
| | | relatives | 1,1427977 | ,4754351 | ,111 | -,1426693 | 2,4282647 |
| | | other | -,8796057* | ,2560841 | ,006 | -1,57200 | -,1872132 |
| | coastal | forest | -7,99E-02 | ,2433117 | 1,000 | -,7377129 | ,5780045 |
| | | relatives | 1,0629435 | ,4581407 | ,137 | -,1757635 | 2,3016505 |
| | | other | -,9594599* | ,2223364 | ,000 | -1,56061 | -,3583135 |
| | relatives | forest | -1,1427977 | ,4754351 | ,111 | -2,42826 | ,1426693 |
| | | coastal | -1,0629435 | ,4581407 | ,137 | -2,30165 | ,1757635 |
| | | other | -2,0224034* | ,4650499 | ,000 | -3,27979 | -,7650155 |
| | other | forest | ,8796057* | ,2560841 | ,006 | ,1872132 | 1,5719982 |
| | | coastal | ,9594599* | ,2223364 | ,000 | ,3583135 | 1,5606063 |
| | | relatives | 2,0224034* | ,4650499 | ,000 | ,7650155 | 3,2797913 |
| REGR factor score 2 for analysis 2 | forest | coastal | -,3568168 | ,2798708 | 1,000 | -1,11352 | ,3998894 |
| | | relatives | ,3631893 | ,5468723 | 1,000 | -1,11543 | 1,8418060 |
| | | other | -5,26E-02 | ,2945624 | 1,000 | -,8490216 | ,7438362 |
| | coastal | forest | ,3568168 | ,2798708 | 1,000 | -,3998894 | 1,1135230 |
| | | relatives | ,7200062 | ,5269793 | 1,000 | -,7048245 | 2,1448368 |
| | | other | ,3042241 | ,2557439 | 1,000 | -,3872484 | ,9956966 |
| | relatives | forest | -,3631893 | ,5468723 | 1,000 | -1,84181 | 1,1154273 |
| | | coastal | -,7200062 | ,5269793 | 1,000 | -2,14484 | ,7048245 |
| | | other | -,4157821 | ,5349266 | 1,000 | -1,86210 | 1,0305364 |
| | other | forest | 5,259E-02 | ,2945624 | 1,000 | -,7438362 | ,8490216 |
| | | coastal | -,3042241 | ,2557439 | 1,000 | -,9956966 | ,3872484 |
| | | relatives | ,4157821 | ,5349266 | 1,000 | -1,03054 | 1,8621005 |
| REGR factor score 3 for analysis 2 | forest | coastal | ,1532579 | ,2795267 | 1,000 | -,6025180 | ,9090337 |
| | | relatives | 1,0093999 | ,5461999 | ,409 | -,4673989 | 2,4861986 |
| | | other | ,1044685 | ,2942003 | 1,000 | -,6909813 | ,8999182 |
| | coastal | forest | -,1532579 | ,2795267 | 1,000 | -,9090337 | ,6025180 |
| | | relatives | ,8561420 | ,5263314 | ,646 | -,5669369 | 2,2792209 |
| | | other | -4,88E-02 | ,2554294 | 1,000 | -,7394118 | ,6418329 |
| | relatives | forest | -1,0093999 | ,5461999 | ,409 | -2,48620 | ,4673989 |
| | | coastal | -,8561420 | ,5263314 | ,646 | -2,27922 | ,5669369 |
| | | other | -,9049314 | ,5342690 | ,565 | -2,34947 | ,5396089 |
| | other | forest | -,1044685 | ,2942003 | 1,000 | -,8999182 | ,6909813 |
| | | coastal | 4,879E-02 | ,2554294 | 1,000 | -,6418329 | ,7394118 |
| | | relatives | ,9049314 | ,5342690 | ,565 | -,5396089 | 2,3494717 |
| REGR factor score 4 for analysis 2 | forest | coastal | -9,03E-02 | ,2843365 | 1,000 | -,8591245 | ,6784363 |
| | | relatives | ,3064597 | ,5555983 | 1,000 | -1,19575 | 1,8086695 |
| | | other | 5,417E-03 | ,2992625 | 1,000 | -,8037201 | ,8145537 |
| | coastal | forest | 9,034E-02 | ,2843365 | 1,000 | -,6784363 | ,8591245 |
| | | relatives | ,3968038 | ,5353879 | 1,000 | -1,05076 | 1,8443694 |
| | | other | 9,576E-02 | ,2598246 | 1,000 | -,6067449 | ,7982667 |
| | relatives | forest | -,3064597 | ,5555983 | 1,000 | -1,80867 | 1,1957502 |
| | | coastal | -,3968038 | ,5353879 | 1,000 | -1,84437 | 1,0507618 |
| | | other | -,3010428 | ,5434621 | 1,000 | -1,77044 | 1,1683534 |
| | other | forest | -5,42E-03 | ,2992625 | 1,000 | -,8145537 | ,8037201 |
| | | coastal | -9,58E-02 | ,2598246 | 1,000 | -,7982667 | ,6067449 |
| | | relatives | ,3010428 | ,5434621 | 1,000 | -1,16835 | 1,7704391 |
| REGR factor score 5 for analysis 2 | forest | coastal | -,3936774 | ,2545821 | ,755 | -1,08201 | ,2946540 |
| | | relatives | -,1993554 | ,4974578 | 1,000 | -1,54437 | 1,1456559 |
| | | other | ,6640855 | ,2679462 | ,091 | -6,0E-02 | 1,3885504 |
| | coastal | forest | ,3936774 | ,2545821 | ,755 | -,2946540 | 1,0820089 |
| | | relatives | ,1943220 | ,4793623 | 1,000 | -1,10176 | 1,4904073 |
| | | other | 1,0577629* | ,2326353 | ,000 | ,4287708 | 1,6867551 |
| | relatives | forest | ,1993554 | ,4974578 | 1,000 | -1,14566 | 1,5443666 |
| | | coastal | -,1943220 | ,4793623 | 1,000 | -1,49041 | 1,1017632 |
| | | other | ,8634409 | ,4865915 | ,478 | -,4521906 | 2,1790724 |
| | other | forest | -,6640855 | ,2679462 | ,091 | -1,38855 | 6,04E-02 |
| | | coastal | -1,0577629* | ,2326353 | ,000 | -1,68676 | -,4287708 |
| | | relatives | -,8634409 | ,4865915 | ,478 | -2,17907 | ,4521906 |

*. The mean difference is significant at the .05 level.

# Table 42- ANOVA Results for Place of Vacation Category and Factors – Multiple Comparisons (con.)

**Multiple Comparisons**

Bonferroni

| Dependent Variable | (I) PLACE | (J) PLACE | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval Lower Bound | 95% Confidence Interval Upper Bound |
|---|---|---|---|---|---|---|---|
| REGR factor score 6 for analysis 2 | forest | coastal | ,2528977 | ,2770450 | 1,000 | -,4961682 | 1,0019636 |
| | | relatives | -9,18E-02 | ,5413506 | 1,000 | -1,55551 | 1,3718602 |
| | | other | -,3117825 | ,2915883 | 1,000 | -1,10017 | ,4766050 |
| | coastal | forest | -,2528977 | ,2770450 | 1,000 | -1,00196 | ,4961682 |
| | | relatives | -,3447248 | ,5216585 | 1,000 | -1,75517 | 1,0657196 |
| | | other | -,5646802 | ,2531617 | ,171 | -1,24917 | ,1198106 |
| | relatives | forest | 9,183E-02 | ,5413506 | 1,000 | -1,37186 | 1,5555144 |
| | | coastal | ,3447248 | ,5216585 | 1,000 | -1,06572 | 1,7551691 |
| | | other | -,2199554 | ,5295256 | 1,000 | -1,65167 | 1,2117598 |
| | other | forest | ,3117825 | ,2915883 | 1,000 | -,4766050 | 1,1001700 |
| | | coastal | ,5646802 | ,2531617 | ,171 | -,1198106 | 1,2491710 |
| | | relatives | ,2199554 | ,5295256 | 1,000 | -1,21176 | 1,6516707 |
| REGR factor score 7 for analysis 2 | forest | coastal | ,5563138 | ,2659062 | ,237 | -,1626353 | 1,2752630 |
| | | relatives | 1,4356401* | ,5195852 | ,042 | 3,08E-02 | 2,8404790 |
| | | other | ,8235195* | ,2798648 | ,025 | 6,68E-02 | 1,5802093 |
| | coastal | forest | -,5563138 | ,2659062 | ,237 | -1,27526 | ,1626353 |
| | | relatives | ,8793263 | ,5006849 | ,497 | -,4744103 | 2,2330629 |
| | | other | ,2672056 | ,2429831 | 1,000 | -,3897648 | ,9241760 |
| | relatives | forest | -1,4356401* | ,5195852 | ,042 | -2,84048 | -3,1E-02 |
| | | coastal | -,8793263 | ,5006849 | ,497 | -2,23306 | ,4744103 |
| | | other | -,6121207 | ,5082357 | 1,000 | -1,98627 | ,7620315 |
| | other | forest | -,8235195* | ,2798648 | ,025 | -1,58021 | -6,7E-02 |
| | | coastal | -,2672056 | ,2429831 | 1,000 | -,9241760 | ,3897648 |
| | | relatives | ,6121207 | ,5082357 | 1,000 | -,7620315 | 1,9862729 |
| REGR factor score 8 for analysis 2 | forest | coastal | ,1474212 | ,2826586 | 1,000 | -,6168227 | ,9116650 |
| | | relatives | -,4780149 | ,5523197 | 1,000 | -1,97136 | 1,0153304 |
| | | other | ,1361539 | ,2974966 | 1,000 | -,6682083 | ,9405161 |
| | coastal | forest | -,1474212 | ,2826586 | 1,000 | -,9116650 | ,6168227 |
| | | relatives | -,6254361 | ,5322286 | 1,000 | -2,06446 | ,8135875 |
| | | other | -1,13E-02 | ,2582913 | 1,000 | -,7096276 | ,6870930 |
| | relatives | forest | ,4780149 | ,5523197 | 1,000 | -1,01533 | 1,9713602 |
| | | coastal | ,6254361 | ,5322286 | 1,000 | -,8135875 | 2,0644596 |
| | | other | ,6141688 | ,5402551 | 1,000 | -,8465566 | 2,0748942 |
| | other | forest | -,1361539 | ,2974966 | 1,000 | -,9405161 | ,6682083 |
| | | coastal | 1,127E-02 | ,2582913 | 1,000 | -,6870930 | ,7096276 |
| | | relatives | -,6141688 | ,5402551 | 1,000 | -2,07489 | ,8465566 |
| REGR factor score 9 for analysis 2 | forest | coastal | -,4314113 | ,2676889 | ,665 | -1,15518 | ,2923578 |
| | | relatives | -,1548711 | ,5230686 | 1,000 | -1,56913 | 1,2593860 |
| | | other | -,9150738* | ,2817410 | ,010 | -1,67684 | -,1533110 |
| | coastal | forest | ,4314113 | ,2676889 | ,665 | -,2923578 | 1,1551804 |
| | | relatives | ,2765402 | ,5040415 | 1,000 | -1,08627 | 1,6393524 |
| | | other | -,4836625 | ,2446121 | ,308 | -1,14504 | ,1777123 |
| | relatives | forest | ,1548711 | ,5230686 | 1,000 | -1,25939 | 1,5691281 |
| | | coastal | -,2765402 | ,5040415 | 1,000 | -1,63935 | 1,0862719 |
| | | other | -,7602027 | ,5116430 | ,847 | -2,14357 | ,6231620 |
| | other | forest | ,9150738* | ,2817410 | ,010 | ,1533110 | 1,6768366 |
| | | coastal | ,4836625 | ,2446121 | ,308 | -,1777123 | 1,1450373 |
| | | relatives | ,7602027 | ,5116430 | ,847 | -,6231620 | 2,1435674 |
| REGR factor score 10 for analysis 2 | forest | coastal | -,2587142 | ,2811538 | 1,000 | -1,01889 | ,5014609 |
| | | relatives | -,7091978 | ,5493793 | 1,000 | -2,19459 | ,7761972 |
| | | other | -,3731720 | ,2959128 | 1,000 | -1,17325 | ,4269079 |
| | coastal | forest | ,2587142 | ,2811538 | 1,000 | -,5014609 | 1,0188893 |
| | | relatives | -,4504836 | ,5293951 | 1,000 | -1,88185 | ,9808788 |
| | | other | -,1144578 | ,2569163 | 1,000 | -,8091002 | ,5801846 |
| | relatives | forest | ,7091978 | ,5493793 | 1,000 | -,7761972 | 2,1945928 |
| | | coastal | ,4504836 | ,5293951 | 1,000 | -,9808788 | 1,8818460 |
| | | other | ,3360258 | ,5373789 | 1,000 | -1,11692 | 1,7889746 |
| | other | forest | ,3731720 | ,2959128 | 1,000 | -,4269079 | 1,1732519 |
| | | coastal | ,1144578 | ,2569163 | 1,000 | -,5801846 | ,8091002 |
| | | relatives | -,3360258 | ,5373789 | 1,000 | -1,78897 | 1,1169230 |
| REGR factor score 11 for analysis 2 | forest | coastal | ,2527286 | ,2806280 | 1,000 | -,5060248 | 1,0114820 |
| | | relatives | -,5708170 | ,5483518 | 1,000 | -2,05343 | ,9117999 |
| | | other | 9,953E-02 | ,2953593 | 1,000 | -,6990533 | ,8981138 |
| | coastal | forest | -,2527286 | ,2806280 | 1,000 | -1,01148 | ,5060248 |
| | | relatives | -,8235456 | ,5284050 | ,738 | -2,25223 | ,6051398 |
| | | other | -,1531983 | ,2564357 | 1,000 | -,8465415 | ,5401449 |
| | relatives | forest | ,5708170 | ,5483518 | 1,000 | -,9117999 | 2,0534339 |
| | | coastal | ,8235456 | ,5284050 | ,738 | -,6051398 | 2,2522310 |
| | | other | ,6703473 | ,5363738 | 1,000 | -,7798840 | 2,1205786 |
| | other | forest | -9,95E-02 | ,2953593 | 1,000 | -,8981138 | ,6990533 |
| | | coastal | ,1531983 | ,2564357 | 1,000 | -,5401449 | ,8465415 |
| | | relatives | -,6703473 | ,5363738 | 1,000 | -2,12058 | ,7798840 |

*. The mean difference is significant at the .05 level.

## Table 43- ANOVA Results for Preference of Vacation Category and Factors – Descriptives

**Descriptives**

| | | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean Lower Bound | 95% Confidence Interval for Mean Upper Bound | Minimum | Maximum |
|---|---|---|---|---|---|---|---|---|---|
| REGR factor scor 1 for analysis 2 | crowded entertainmen | 5 | -,3436123 | ,9019631 | ,4033701 | -1,46355 | ,7763228 | -1,82074 | ,55413 |
| | swimming | 21 | -,3820585 | 1,0183401 | ,2222200 | -,8456013 | 8,15E-02 | -2,85698 | ,95312 |
| | local visits | 20 | -,5230948 | 1,0225745 | ,2286546 | -1,00167 | -4,5E-02 | -2,59644 | 1,33348 |
| | other | 40 | ,5050796 | ,7477409 | ,1182282 | ,2659405 | ,7442187 | -2,08869 | 1,16640 |
| | Total | 86 | -8,3E-17 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,85698 | 1,33348 |
| REGR factor scor 2 for analysis 2 | crowded entertainmen | 5 | ,6777871 | ,8643758 | ,3865606 | -,3954772 | ,7510514 | -,45100 | 1,94425 |
| | swimming | 21 | ,1969157 | 1,0439812 | ,2278154 | -,2782989 | ,6721302 | -2,16933 | 2,11625 |
| | local visits | 20 | -,1491616 | 1,0718576 | ,2396746 | -,6508064 | ,3524832 | -1,97836 | 1,54015 |
| | other | 40 | -,1135233 | ,9379880 | ,1483089 | -,4135064 | ,1864598 | -1,80120 | 1,66597 |
| | Total | 86 | -6,2E-17 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,16933 | 2,11625 |
| REGR factor scor 3 for analysis 2 | crowded entertainmen | 5 | ,3184972 | 1,1264174 | ,5037492 | -1,08013 | 1,7171291 | -1,09772 | 1,19148 |
| | swimming | 21 | -7,3E-03 | 1,0518229 | ,2295266 | -,4861048 | ,4714632 | -2,25454 | 1,75968 |
| | local visits | 20 | ,2682241 | 1,0326941 | ,2309174 | -,2150916 | ,7515398 | -1,79864 | 2,12268 |
| | other | 40 | -,1700808 | ,9396005 | ,1485639 | -,4705796 | ,1304180 | -2,42142 | 1,52105 |
| | Total | 86 | -8,3E-17 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,42142 | 2,12268 |
| REGR factor scor 4 for analysis 2 | crowded entertainmen | 5 | ,6994850 | 1,2382831 | ,5537770 | -,8380466 | 2,2370166 | -,77227 | 2,13200 |
| | swimming | 21 | -4,7E-02 | ,9553967 | ,2084846 | -,4816494 | ,3881333 | -2,07449 | 1,95539 |
| | local visits | 20 | -8,1E-04 | 1,1960656 | ,2674484 | -,5605880 | ,5589638 | -3,07873 | 1,80154 |
| | other | 40 | -6,2E-02 | ,8884097 | ,1404699 | -,3466088 | ,2216456 | -2,18448 | 1,56378 |
| | Total | 86 | 2,79E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -3,07873 | 2,13200 |
| REGR factor scor 5 for analysis 2 | crowded entertainmen | 5 | ,6127698 | ,9858526 | ,4408867 | -,6113278 | 1,8368674 | -1,04839 | 1,30351 |
| | swimming | 21 | ,3648072 | ,9084134 | ,1982321 | -4,9E-02 | ,7783121 | -2,03228 | 1,94250 |
| | local visits | 20 | ,1853746 | ,9309540 | ,2081676 | -,2503253 | ,6210744 | -2,29376 | 1,82147 |
| | other | 40 | -,3608073 | ,9815541 | ,1551973 | -,6747236 | -4,7E-02 | -1,91228 | 1,70347 |
| | Total | 86 | -5,0E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,29376 | 1,94250 |
| REGR factor scor 6 for analysis 2 | crowded entertainmen | 5 | -1,58920 | 1,5610927 | ,6981419 | -3,52755 | ,3491513 | -3,61702 | ,18977 |
| | swimming | 21 | 8,00E-02 | ,9734831 | ,2124314 | -,3631412 | ,5231072 | -1,35880 | 1,57271 |
| | local visits | 20 | -,1802199 | ,9155602 | ,2047255 | -,6087153 | ,2482754 | -2,30135 | 1,08168 |
| | other | 40 | ,2467690 | ,7929866 | ,1253822 | -6,8E-03 | ,5003785 | -,86652 | 2,26129 |
| | Total | 86 | -6,2E-17 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -3,61702 | 2,26129 |
| REGR factor scor 7 for analysis 2 | crowded entertainmen | 5 | ,2883375 | 1,0750676 | ,4807848 | -1,04654 | 1,6232103 | -,78785 | 1,43580 |
| | swimming | 21 | ,1190934 | 1,1218757 | ,2448133 | -,3915782 | ,6297651 | -2,06209 | 1,79414 |
| | local visits | 20 | 1,48E-02 | 1,1926079 | ,2666752 | -,5433812 | ,5729341 | -2,29456 | 2,00834 |
| | other | 40 | -,1059545 | ,8322644 | ,1315926 | -,3721256 | ,1602166 | -1,64226 | 2,30405 |
| | Total | 86 | -1,7E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,29456 | 2,30405 |
| REGR factor scor 8 for analysis 2 | crowded entertainmen | 5 | -,1495004 | 1,2365169 | ,5529872 | -1,68484 | 1,3858381 | -1,81687 | 1,00855 |
| | swimming | 21 | -7,7E-02 | ,9535272 | ,2080767 | -,5113002 | ,3567806 | -1,51717 | 1,69333 |
| | local visits | 20 | ,2316678 | 1,2462541 | ,2786709 | -,3515971 | ,8149327 | -2,49640 | 2,81032 |
| | other | 40 | -5,7E-02 | ,8734166 | ,1380993 | -,3359171 | ,2227472 | -2,38834 | 1,74221 |
| | Total | 86 | -1,5E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,49640 | 2,81032 |
| REGR factor scor 9 for analysis 2 | crowded entertainmen | 5 | ,3233622 | 1,2345489 | ,5521071 | -1,20953 | 1,8562572 | -1,78260 | 1,45497 |
| | swimming | 21 | -,1112567 | ,8424949 | ,1838475 | -,4947558 | ,2722423 | -1,99011 | 1,28795 |
| | local visits | 20 | -,2690573 | 1,4968347 | ,3347024 | -,9695974 | ,4314829 | -3,06194 | 2,43225 |
| | other | 40 | ,1525181 | ,6975557 | ,1102932 | -7,1E-02 | ,3756073 | -1,77459 | 1,71186 |
| | Total | 86 | -4,0E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -3,06194 | 2,43225 |
| REGR factor scor 10 for analysis 2 | crowded entertainmen | 5 | ,5621934 | 1,3243578 | ,5922708 | -1,08221 | 2,2066008 | -,86212 | 2,74018 |
| | swimming | 21 | 3,87E-03 | 1,0159605 | ,2217008 | -,4585875 | ,4663318 | -2,55030 | 1,93933 |
| | local visits | 20 | -,1586652 | 1,1464791 | ,2563605 | -,6952340 | ,3779035 | -2,17341 | 2,12991 |
| | other | 40 | 7,03E-03 | ,8811535 | ,1393226 | -,2747810 | ,2888321 | -1,70612 | 2,33443 |
| | Total | 86 | -2,6E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,55030 | 2,74018 |
| REGR factor scor 11 for analysis 2 | crowded entertainmen | 5 | 9,64E-02 | 1,6638740 | ,7441071 | -1,96954 | 2,1624096 | -1,13692 | 2,75077 |
| | swimming | 21 | -,1772907 | 1,0497894 | ,2290828 | -,6551491 | ,3005677 | -2,85720 | 1,32398 |
| | local visits | 20 | 6,57E-04 | 1,2565137 | ,2809650 | -,5874094 | ,5887236 | -1,90811 | 3,20452 |
| | other | 40 | 8,07E-02 | ,7324036 | ,1158032 | -,1535396 | ,3149284 | -1,44448 | 1,49375 |
| | Total | 86 | 2,17E-16 | 1,0000000 | ,1078328 | -,2144004 | ,2144004 | -2,85720 | 3,20452 |

Table 44- ANOVA Results for Preference of Vacation Category and Factors – Multiple Comparisons

**Multiple Comparisons**

Bonferroni

| Dependent Variable | (I) preference on vacation | (J) preference on vacation | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval Lower Bound | 95% Confidence Interval Upper Bound |
|---|---|---|---|---|---|---|---|
| REGR factor score 1 for analysis 2 | crowded entertainment | swimming | 3,845E-02 | ,4453079 | 1,000 | -1,16556 | 1,2424563 |
| | | local visits | ,1794825 | ,4474437 | 1,000 | -1,03030 | 1,3892672 |
| | | other | -,8486919 | ,4244824 | ,293 | -1,99639 | ,2990107 |
| | swimming | crowded entertainment | -3,84E-02 | ,4453079 | 1,000 | -1,24246 | 1,1655640 |
| | | local visits | ,1410363 | ,2795991 | 1,000 | -,6149351 | ,8970078 |
| | | other | -,8871381* | ,2411536 | ,003 | -1,53916 | -,2351144 |
| | local visits | crowded entertainment | -,1794825 | ,4474437 | 1,000 | -1,38927 | 1,0303023 |
| | | swimming | -,1410363 | ,2795991 | 1,000 | -,8970078 | ,6149351 |
| | | other | -1,0281744* | ,2450750 | ,000 | -1,69080 | -,3655480 |
| | other | crowded entertainment | ,8486919 | ,4244824 | ,293 | -,2990107 | 1,9963945 |
| | | swimming | ,8871381* | ,2411536 | ,003 | ,2351144 | 1,5391618 |
| | | local visits | 1,0281744* | ,2450750 | ,000 | ,3655480 | 1,6908008 |
| REGR factor score 2 for analysis 2 | crowded entertainment | swimming | ,4808714 | ,4943507 | 1,000 | -,8557390 | 1,8174819 |
| | | local visits | ,8269487 | ,4967217 | ,599 | -,5160724 | 2,1699698 |
| | | other | ,7913104 | ,4712316 | ,581 | -,4827913 | 2,0654120 |
| | swimming | crowded entertainment | -,4808714 | ,4943507 | 1,000 | -1,81748 | ,8557390 |
| | | local visits | ,3460773 | ,3103919 | 1,000 | -,4931510 | 1,1853056 |
| | | other | ,3104389 | ,2677124 | 1,000 | -,4133936 | 1,0342715 |
| | local visits | crowded entertainment | -,8269487 | ,4967217 | ,599 | -2,16997 | ,5160724 |
| | | swimming | -,3460773 | ,3103919 | 1,000 | -1,18531 | ,4931510 |
| | | other | -3,56E-02 | ,2720657 | 1,000 | -,7712413 | ,6999646 |
| | other | crowded entertainment | -,7913104 | ,4712316 | ,581 | -2,06541 | ,4827913 |
| | | swimming | -,3104389 | ,2677124 | 1,000 | -1,03427 | ,4133936 |
| | | local visits | 3,564E-02 | ,2720657 | 1,000 | -,6999646 | ,7712413 |
| REGR factor score 3 for analysis 2 | crowded entertainment | swimming | ,3258180 | ,4972967 | 1,000 | -1,01876 | 1,6703939 |
| | | local visits | 5,027E-02 | ,4996819 | 1,000 | -1,30075 | 1,4012978 |
| | | other | ,4885780 | ,4740399 | 1,000 | -,7931166 | 1,7702726 |
| | swimming | crowded entertainment | -,3258180 | ,4972967 | 1,000 | -1,67039 | 1,0187579 |
| | | local visits | -,2755449 | ,3122417 | 1,000 | -1,11977 | ,5686847 |
| | | other | ,1627600 | ,2693078 | 1,000 | -,5653861 | ,8909062 |
| | local visits | crowded entertainment | -5,03E-02 | ,4996819 | 1,000 | -1,40130 | 1,3007516 |
| | | swimming | ,2755449 | ,3122417 | 1,000 | -,5686847 | 1,1197745 |
| | | other | ,4383049 | ,2736870 | ,679 | -,3016818 | 1,1782916 |
| | other | crowded entertainment | -,4885780 | ,4740399 | 1,000 | -1,77027 | ,7931166 |
| | | swimming | -,1627600 | ,2693078 | 1,000 | -,8909062 | ,5653861 |
| | | local visits | -,4383049 | ,2736870 | ,679 | -1,17829 | ,3016818 |
| REGR factor score 4 for analysis 2 | crowded entertainment | swimming | ,7462431 | ,4986788 | ,830 | -,6020696 | 2,0945557 |
| | | local visits | ,7002971 | ,5010706 | ,996 | -,6544823 | 2,0550765 |
| | | other | ,7619666 | ,4753573 | ,677 | -,5232899 | 2,0472232 |
| | swimming | crowded entertainment | -,7462431 | ,4986788 | ,830 | -2,09456 | ,6020696 |
| | | local visits | -4,59E-02 | ,3131094 | 1,000 | -,8925218 | ,8006299 |
| | | other | 1,572E-02 | ,2700562 | 1,000 | -,7144462 | ,7458933 |
| | local visits | crowded entertainment | -,7002971 | ,5010706 | ,996 | -2,05508 | ,6544823 |
| | | swimming | 4,595E-02 | ,3131094 | 1,000 | -,8006299 | ,8925218 |
| | | other | 6,167E-02 | ,2744476 | 1,000 | -,6803737 | ,8037127 |
| | other | crowded entertainment | -,7619666 | ,4753573 | ,677 | -2,04722 | ,5232899 |
| | | swimming | -1,57E-02 | ,2700562 | 1,000 | -,7458933 | ,7144462 |
| | | local visits | -6,17E-02 | ,2744476 | 1,000 | -,8037127 | ,6803737 |
| REGR factor score 5 for analysis 2 | crowded entertainment | swimming | ,2479626 | ,4740985 | 1,000 | -1,03389 | 1,5298157 |
| | | local visits | ,4273952 | ,4763724 | 1,000 | -,8606059 | 1,7153964 |
| | | other | ,9735771 | ,4519265 | ,205 | -,2483280 | 2,1954823 |
| | swimming | crowded entertainment | -,2479626 | ,4740985 | 1,000 | -1,52982 | 1,0338905 |
| | | local visits | ,1794327 | ,2976760 | 1,000 | -,6254147 | ,9842800 |
| | | other | ,7256145* | ,2567449 | ,035 | 3,14E-02 | 1,4197936 |
| | local visits | crowded entertainment | -,4273952 | ,4763724 | 1,000 | -1,71540 | ,8606059 |
| | | swimming | -,1794327 | ,2976760 | 1,000 | -,9842800 | ,6254147 |
| | | other | ,5461819 | ,2609199 | ,236 | -,1592854 | 1,2516492 |
| | other | crowded entertainment | -,9735771 | ,4519265 | ,205 | -2,19548 | ,2483280 |
| | | swimming | -,7256145* | ,2567449 | ,035 | -1,41979 | -3,1E-02 |
| | | local visits | -,5461819 | ,2609199 | ,236 | -1,25165 | ,1592854 |

*. The mean difference is significant at the .05 level.

## Table 44- ANOVA Results for Type of Vacation Category and Factors – Multiple Comparisons (con.)

**Multiple Comparisons**

Bonferroni

| Dependent Variable | (I) preference on vacation | (J) preference on vacation | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval Lower Bound | 95% Confidence Interval Upper Bound |
|---|---|---|---|---|---|---|---|
| REGR factor score 6 for analysis 2 | crowded entertainment | swimming | -1,6691844* | ,4569713 | ,003 | -2,90473 | -,4336392 |
| | | local visits | -1,4089814* | ,4591630 | ,017 | -2,65045 | -,1675103 |
| | | other | -1,8359704* | ,4356003 | ,000 | -3,01373 | -,6582075 |
| | swimming | crowded entertainment | 1,6691844* | ,4569713 | ,003 | ,4336392 | 2,9047296 |
| | | local visits | ,2602030 | ,2869222 | 1,000 | -,5155687 | 1,0359746 |
| | | other | -,1667860 | ,2474698 | 1,000 | -,8358873 | ,5023153 |
| | local visits | crowded entertainment | 1,4089814* | ,4591630 | ,017 | ,1675103 | 2,6504525 |
| | | swimming | -,2602030 | ,2869222 | 1,000 | -1,03597 | ,5155687 |
| | | other | -,4269890 | ,2514940 | ,560 | -1,10697 | ,2529928 |
| | other | crowded entertainment | 1,8359704* | ,4356003 | ,000 | ,6582075 | 3,0137333 |
| | | swimming | ,1667860 | ,2474698 | 1,000 | -,5023153 | ,8358873 |
| | | local visits | ,4269890 | ,2514940 | ,560 | -,2529928 | 1,1069707 |
| REGR factor score 7 for analysis 2 | crowded entertainment | swimming | ,1692441 | ,5031445 | 1,000 | -1,19114 | 1,5296308 |
| | | local visits | ,2735611 | ,5055576 | 1,000 | -1,09335 | 1,6404725 |
| | | other | ,3942920 | ,4796141 | 1,000 | -,9024740 | 1,6910580 |
| | swimming | crowded entertainment | -,1692441 | ,5031445 | 1,000 | -1,52963 | 1,1911427 |
| | | local visits | ,1043170 | ,3159133 | 1,000 | -,7498399 | ,9584739 |
| | | other | ,2250479 | ,2724746 | 1,000 | -,5116605 | ,9617564 |
| | local visits | crowded entertainment | -,2735611 | ,5055576 | 1,000 | -1,64047 | 1,0933503 |
| | | swimming | -,1043170 | ,3159133 | 1,000 | -,9584739 | ,7498399 |
| | | other | ,1207309 | ,2769053 | 1,000 | -,6279573 | ,8694191 |
| | other | crowded entertainment | -,3942920 | ,4796141 | 1,000 | -1,69106 | ,9024740 |
| | | swimming | -,2250479 | ,2724746 | 1,000 | -,9617564 | ,5116605 |
| | | local visits | -,1207309 | ,2769053 | 1,000 | -,8694191 | ,6279573 |
| REGR factor score 8 for analysis 2 | crowded entertainment | swimming | -7,22E-02 | ,5023287 | 1,000 | -1,43042 | 1,2859405 |
| | | local visits | -,3811683 | ,5047380 | 1,000 | -1,74586 | ,9835270 |
| | | other | -9,29E-02 | ,4788365 | 1,000 | -1,38758 | 1,2017481 |
| | swimming | crowded entertainment | 7,224E-02 | ,5023287 | 1,000 | -1,28594 | 1,4304218 |
| | | local visits | -,3089276 | ,3154011 | 1,000 | -1,16170 | ,5438444 |
| | | other | -2,07E-02 | ,2720328 | 1,000 | -,7561888 | ,7148392 |
| | local visits | crowded entertainment | ,3811683 | ,5047380 | 1,000 | -,9835270 | 1,7458635 |
| | | swimming | ,3089276 | ,3154011 | 1,000 | -,5438444 | 1,1616997 |
| | | other | ,2882528 | ,2764564 | 1,000 | -,4592216 | 1,0357272 |
| | other | crowded entertainment | 9,292E-02 | ,4788365 | 1,000 | -1,20175 | 1,3875791 |
| | | swimming | 2,067E-02 | ,2720328 | 1,000 | -,7148392 | ,7561888 |
| | | local visits | -,2882528 | ,2764564 | 1,000 | -1,03573 | ,4592216 |
| REGR factor score 9 for analysis 2 | crowded entertainment | swimming | ,4346190 | ,4971244 | 1,000 | -,9094909 | 1,7787289 |
| | | local visits | ,5924195 | ,4995087 | 1,000 | -,7581370 | 1,9429760 |
| | | other | ,1708441 | ,4738756 | 1,000 | -1,11041 | 1,4520945 |
| | swimming | crowded entertainment | -,4346190 | ,4971244 | 1,000 | -1,77873 | ,9094909 |
| | | local visits | ,1578005 | ,3121335 | 1,000 | -,6861365 | 1,0017376 |
| | | other | -,2637749 | ,2692144 | 1,000 | -,9916687 | ,4641190 |
| | local visits | crowded entertainment | -,5924195 | ,4995087 | 1,000 | -1,94298 | ,7581370 |
| | | swimming | -,1578005 | ,3121335 | 1,000 | -1,00174 | ,6861365 |
| | | other | -,4215754 | ,2735922 | ,763 | -1,16131 | ,3181549 |
| | other | crowded entertainment | -,1708441 | ,4738756 | 1,000 | -1,45209 | 1,1104063 |
| | | swimming | ,2637749 | ,2692144 | 1,000 | -,4641190 | ,9916687 |
| | | local visits | ,4215754 | ,2735922 | ,763 | -,3181549 | 1,1613057 |
| REGR factor score 10 for analysis 2 | crowded entertainment | swimming | ,5583213 | ,5003787 | 1,000 | -,7945874 | 1,9112300 |
| | | local visits | ,7208587 | ,5027786 | ,933 | -,6385388 | 2,0802562 |
| | | other | ,5551679 | ,4769777 | 1,000 | -,7344698 | 1,8448056 |
| | swimming | crowded entertainment | -,5583213 | ,5003787 | 1,000 | -1,91123 | ,7945874 |
| | | local visits | ,1625374 | ,3141768 | 1,000 | -,6869242 | 1,0119990 |
| | | other | -3,15E-03 | ,2709768 | 1,000 | -,7358122 | ,7295053 |
| | local visits | crowded entertainment | -,7208587 | ,5027786 | ,933 | -2,08026 | ,6385388 |
| | | swimming | -,1625374 | ,3141768 | 1,000 | -1,01200 | ,6869242 |
| | | other | -,1656908 | ,2753832 | 1,000 | -,9102635 | ,5788819 |
| | other | crowded entertainment | -,5551679 | ,4769777 | 1,000 | -1,84481 | ,7344698 |
| | | swimming | 3,153E-03 | ,2709768 | 1,000 | -,7295053 | ,7358122 |
| | | local visits | ,1656908 | ,2753832 | 1,000 | -,5788819 | ,9102635 |
| REGR factor score 11 for analysis 2 | crowded entertainment | swimming | ,2737279 | ,5037440 | 1,000 | -1,08828 | 1,6357357 |
| | | local visits | 9,578E-02 | ,5061601 | 1,000 | -1,27276 | 1,4643204 |
| | | other | 1,574E-02 | ,4801856 | 1,000 | -1,28257 | 1,3140541 |
| | swimming | crowded entertainment | -,2737279 | ,5037440 | 1,000 | -1,63574 | 1,0882799 |
| | | local visits | -,1779478 | ,3162898 | 1,000 | -1,03312 | ,6772269 |
| | | other | -,2579851 | ,2727992 | 1,000 | -,9955715 | ,4796012 |
| | local visits | crowded entertainment | -9,58E-02 | ,5061601 | 1,000 | -1,46432 | 1,2727602 |
| | | swimming | ,1779478 | ,3162898 | 1,000 | -,6772269 | 1,0331226 |
| | | other | -8,00E-02 | ,2772353 | 1,000 | -,8296177 | ,6695431 |
| | other | crowded entertainment | -1,57E-02 | ,4801856 | 1,000 | -1,31405 | 1,2825686 |
| | | swimming | ,2579851 | ,2727992 | 1,000 | -,4796012 | ,9955715 |
| | | local visits | 8,004E-02 | ,2772353 | 1,000 | -,6695431 | ,8296177 |

*. The mean difference is significant at the .05 level.

**APPENDIX E**

**PHOTOS FROM SITE VISIT TO ÇIRALI, ANTALYA IN 2004**

Figure 37.- Interview  with a foreign tourist

Figure 38- Interview with a native tourist

Figure 39- Interview with local people

Figure 40- Interview in the village cafe

Figure 41- Meeting in the house of Ulupınar Village’s Muhtar

Figure 42- Interview with local people


Figure 43- The entrance to Khimaira- a local historical place near Çıralı

Figure 44- Mountains along with trees, scenery from Çıralı