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FACTORS IN CLINICAL DECISION MAKING: ASSOCIATIONS BETWEEN SUBJECTIVE EVALUATIONS BY CLINICIANS AND OBJECTIVE EVALUATIONS BY PHYSICAL MEASUREMENT

by

Jack Bessette DuClos

THESIS

Submitted in partial satisfaction of the requirements for the degree of

MASTER OF SCIENCE

in

Oral Biology

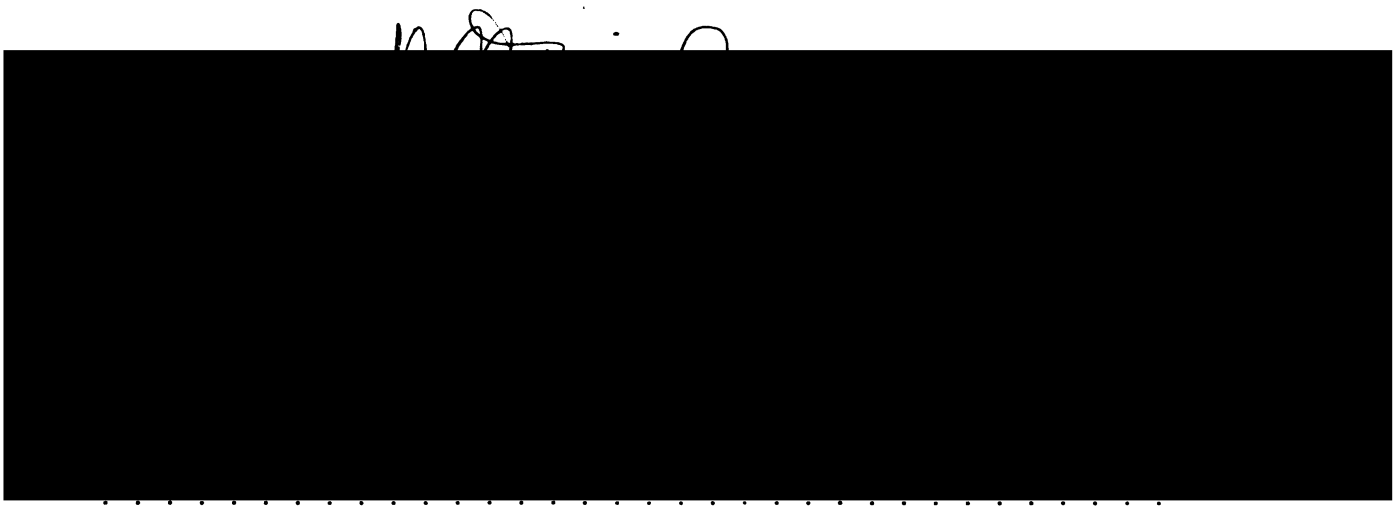
in the

GRADUATE DIVISION

of the

UNIVERSITY OF CALIFORNIA

San Francisco



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Factors in Clinical Decision Making:

Associations Between Subjective Evaluations by Clinicians and

Objective Evaluations by Physical Measurement

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TABLE OF CONTENTS

Acknowledgements..... iii

List of Tables..... v

List of Figures..... vi

Introduction..... 1

General and Specific Aims..... 6

Material and Methods..... 7

Subjective Data Collection..... 12

Objective Data Collection..... 23

Hypotheses and Results..... 33

Extraction/Non-Extraction..... 33

Post-Treatment Facial Appearance..... 50

Treatment Outcomes..... 68

Post-Treatment Occlusion..... 83

Discussion of Results..... 91

Bibliography..... 99

Appendix..... 103

LIST OF TABLES

Table 1.0 Characteristics of participating clinicians..... 11

Table 2.0 summ_xnx vs. gibbs xnx..... 33

Table 2.1 Incisor protrusion variables vs. summ_xnx..... 35

Table 2.2 Anterior-posterior skeletal variables vs. summ_xnx..... 37

Table 2.3 Profile, lip fullness and lip incompetence variables vs. summ_xnx..... 39

Table 2.4 Vertical skeletal relationship variables vs. summ_xnx..... 46

Table 3.0 pho_wted vs. gibbsxnx..... 51

Table 3.1 Nose prominence variables vs. pho_wted..... 53

Table 3.2 Profile convexity and chin prominence variables vs. pho_wted..... 55

Table 3.3 Incisor protrusion variables vs. pho_wted..... 57

Table 3.4 Lip fullness variables vs. pho_wted..... 59

Table 3.5 Vertical skeletal relationship variables vs. pho_wted..... 62

Table 4.0 out_wted vs. gibbsxnx..... 68

Table 4.1 Nose prominence vs. out_wted..... 69

Table 4.2 Profile convexity vs. out_wted..... 70

Table 4.3 Vertical skeletal relationship vs. out_wted..... 76

Table 4.4 Incisor protrusion vs. out_wted..... 79

Table 5.0 sc_wted vs, gibbxnx..... 82

Table 5.1 Overjet vs. sc_wted..... 84

Table 5.2 Incisor protrusion variables vs. sc_wted..... 84

Table 5.3 Anterior-posterior skeletal relationship vs. sc_wted..... 86

LIST OF FIGURES

Figure 1.0 Task form 1 13

Figure 1.1 Task form 2.1 15

Figure 1.2 Task form 2.2 17

Figure 1.3 Task form 3.0 18

Figure 1.4 ELLIPSE: output example 30

Figure 2.1 Scatter plot: IIANG_01 vs. SUMM_XNX 36

Figure 2.2 Scatter plot: ANB_01 vs. SUMM_XNX 38

Figure 2.3 Scatter plot: CONVX_01 vs. SUMM_XNX 40

Figure 2.4 Scatter plot: STFC_01 vs. SUMM_XNX 41

Figure 2.5 Scatter plot: ULREX _01 vs. SUMM_XNX 43

Figure 2.6 Scatter plot: LLREX_01 vs. SUMM_XNX 44

Figure 2.7 Scatter plot: IGAP_01 vs. SUMM_XNX 45

Figure 2.8 Scatter plot: VERJR_01 vs. SUMM_XNX 47

Figure 2.9 Scatter plot: MANIN_01 vs. SUMM_XNX 48

Figure 2.10 Multiple Regression: Extraction decision 49

Figure 3.1 Scatter plot: NFA_02 vs. PHO_WTED 54

Figure 3.2 Scatter plot: STFC_02 vs. PHO_WTED 56

Figure 3.3 Scatter plot: CONVX_02 vs. PHO_WTED 57

Figure 3.4 Scatter plot: SNPG_02 vs. PHO_WTED 59

Figure 3.5 Scatter plot: IIANG_02 vs. PHO_WTED 61

Figure 3.6 Scatter plot: LLREX_02 vs. PHO_WTED 62

Figure 3.7 Scatter plot: VERJR_02 vs. PHO_WTED 64

Figure 3.8 Scatter plot: TFH_02 vs. PHO_WTED 65

Figure 3.9 Scatter plot: LFH_02 vs. PHO_WTED 66

Figure 3.10 Multiple regression: Facial appearance decision 67

Figure 4.1 Scatter plot: NFA_12 vs. OUT_WTED..... 72
Figure 4.2 Scatter plot: CONVX_12 vs. OUT_WTED..... 74
Figure 4.3 Scatter plot: STFC_12 vs. OUT_WTED..... 75
Figure 4.4 Scatter plot: SNPG_12 vs. OUT_WTED..... 76
Figure 4.5 Scatter plot: MANIN_12 vs. OUT_WTED..... 78
Figure 4.6 Scatter plot: IIANG_12 vs. OUT_WTED..... 79
Figure 4.7 Scatter plot: VERJR_12 vs. OUT_WTED..... 81
Figure 4.8 Multiple regression: Outcome decision..... 82
Figure 5.1 Scatter plot: OVERJ_02 vs. SC_WTED..... 86
Figure 5.2 Scatter plot: IIANG_02 vs. SC_WTED..... 88
Figure 5.3 Scatter plot: ANB_02 vs. SC_WTED..... 90

INTRODUCTION

Cephalometric head film analysis was introduced to the field of orthodontics by Broadbent in 1931.[1] Initially, cephalometric head film analysis was primarily utilized as a research tool allowing researchers to study growth and development of the facial skeleton.[2] It was not until the 1940's that the extraction/ non-extraction controversy [3,4,5] brought the use of cephalometric analysis to the forefront of clinical orthodontics as a useful tool in diagnosis and treatment planning.[6] Orthodontic clinicians who accepted extraction as a viable treatment alternative based their philosophy on positioning the teeth, the lower incisors in particular, over basal bone. These clinicians determined that valuable diagnostic information could be gained from cephalometrics. Analysis of cephalometric head films were an excellent tool for demonstrating this tooth to bone relationship. One cephalometric analysis proposed by Tweed was used as a diagnostic tool for planning treatment mechanics to achieve the desired position of the lower incisors.[7,8] He believed the position of the lower incisor was important for post-treatment stability, periodontal health and facial esthetics. On the other side, the proponents of non-extraction treatment were less willing to adopt the routine use of cephalometrics as a tool for diagnosis and treatment planning.[6] The debate over extraction and non-extraction treatment is still one the biggest issues that faces the profession as evidenced by many recent studies and publications.[9-16]

Today, there is general agreement among orthodontic clinicians about the importance of cephalometrics, especially as an aid for planning either extraction or non-extraction treatment.[10] However, several important questions remain: How much do clinicians rely on cephalometrics for diagnosis and treatment planning? Is planning

treatment based on average numbers appropriate when formulating a treatment plan for the individual patient? This study has focused on these questions by examining the relationship between objective cephalometric measures and subjective decisions of clinical orthodontists.

It was our hope that this study would bring to light common factors clinicians use when formulating treatment decisions and judgments concerning the success and failure of individual treatment results. Information of this type would give clinicians a better understanding of how different treatment strategies effect the craniofacial complex. This information would assist orthodontists in educating their dental colleagues and the public about not only the benefits of orthodontic treatment, but more importantly about the inherent limitations.

This study further attempted to identify any associations between the clinician's subjective impressions and a limited number of objective cephalometric measurement standards of Downs,[17,18] Steiner,[19] and Tweed.[7,8] Our goal was to detect the factors that clinicians predictably use by testing for associations between their subjective clinical impressions and a limited number of these objective cephalometic measures. Subjective clinical impressions were gathered from clinicians executing diagnosis and treatment planning, evaluating post-treatment facial esthetics, post-treatment occlusions, and treatment outcomes. It was our belief that the subjective clinical impressions would agree with the objective findings from the cephalometric data.

This study also evaluated the factors that clinicians use during their decision making process when determining if a case should be treated with or without extractions . At each end of the extraction/non-extraction decision continuum there are the extreme groups of clinicians who strongly defend their treatment approach. Their treatment philosophies are frequently based on dogma and individual experiences that have not been adequately scrutinized by critical research methods.[10] The practitioners who lean towards an extraction approach propose that extraction therapy yields better stability, periodontal health, and

improved facial esthetics.[7,8] On the other side, the clinicians who lean towards a non-extraction approach believe that conservation of tooth structure allows better function, avoids flattening of the profile, reduces root resorption, and reduces the physical and emotional trauma associated with treatment.[13] The majority of clinicians fall somewhere in the middle of the continuum employing both treatment methods with varying frequencies.[14] Even with all the advancements in orthodontics, such as appliance design, biomechanics, and video imaging, the issue of whether to extract or not extract is still unclear for a large group of patients(borderline cases).[10,14,15]

Orthodontists today are challenged to produce occlusions with optimal function and faces that are esthetically pleasing. Making a patient look worse in an attempt to accomplish occlusal goals is no longer acceptable. With the advances of orthognathic surgery, the orthodontist has the enhanced ability to satisfy both occlusal and facial esthetic goals. Patients may prefer that treatment goals and facial esthetics conform to their own self image[20] or certain ethnic norms.[21] One of the objectives of this study was to examine how treatment and growth changes of hard and soft tissue effects facial esthetics. This information should be useful to orthodontists when educating patients about the limitations and consequences of different treatment strategies, especially when orthognathic surgery is not a viable option.

In this study, 48 patient records were analyzed and treatment planned by five expert clinicians. It was therefore possible for us to examine the cases according to different extraction criteria. By dividing the cases into extraction categories based on the decision of the five clinicians of unanimous extraction, unanimous non-extraction, and "borderline" extraction. A ranking of the cases was also established to represent the five clinicians propensity to extract for each of the 48 cases. Having the cases evaluated by five skilled clinicians and classifying the cases as described above was a unique feature of our study. A recent study[9] reported on morphologically characterized cases that were treated with extractions; however, the study did not control for the individual bias of the clinician who

treated the cases. Furthermore, among the cases chosen for that study we have no way of knowing which cases were truly "borderline" cases and which cases were unanimous extraction cases. Our study design, although not perfect, attempted to account for the bias of a single practitioner by having five clinicians evaluate each case independently. This allowed identification of the factors used by both the single practitioner who treated the cases, as well as the factors utilized by the group of five skilled clinicians who analyzed the cases. This method further enabled identification of the cases that fell into a "borderline" extraction treatment category when disagreement existed among the five evaluating clinicians. Generally, it is these "borderline" extraction cases that present the orthodontic profession with the most difficult controversial treatment decisions.[10]

The subjective data for the facial appearance decisions was gathered by having five expert clinicians evaluate the post-treatment frontal and lateral photographs of each case and assign a facial appearance score . The subjective evaluations of the cases ranked in order of facial appearance were compared with a limited number of measurements from the following hard tissue analyses of Downs,[17,18] Steiner,[19] Tweed,[7,8] and selected measures from the soft tissue analysis of Powell and Humphries.[22]

In another component of the study, the five skilled clinicians evaluated the occlusions from the post-treatment study casts of the 48 cases. The cases were assessed an occlusal score which allowed the 48 cases to be ranked by the subjective impressions of the clinicians. Our goal was to attempt to identify any associations between objective measures from the post-treatment head films and the clinicians subjective analysis of the post-treatment study casts.

The last part of the study had clinicians analyze the complete pre and post-treatment records for the 48 cases and rank the cases on the subjective perception of improvement. For this part of the study we superimposed pre and post-treatment head films for each of the 48 cases to obtain data that quantifies displacements of the patient's hard and soft

GENERAL AIM:

The general aim of this study was to analyze the manner in which clinicians make decisions by identifying associations between qualitative subjective impressions acquired from clinical evaluations of orthodontic patient records and quantitative objective measures of cephalometric head films.

SPECIFIC AIMS:

Aim 1. To complete sampling, data acquisition, and data base construction for a sample of 48 Angle Class I and Class II extraction and non-extraction patients drawn from the practice of an expert orthodontist.

Aim 2. To obtain subjective qualitative impressions from clinical evaluations of pre-treatment records, post-treatment study casts, post-treatment photographs, and combined pre and post-treatment records for the 48 cases.

Aim 3. To obtain triple-determined quantitative morphological hard and soft tissue measurements from pre and post-treatment cephalometric head films for the 48 cases.

Aim 4. To identify association between the subjective qualitative clinical impressions and a limited number objective quantitative cephalometric measures.

MATERIAL AND METHODS

The study sample of orthodontic patient records and the subjective data collected from the participating clinicians was utilized for this study and another study performed by Dr. Rick Herrmann.[23]

SAMPLE SELECTION

This study is part of a larger project being conducted in the Division of Orthodontics. The retrospective part of the project involves the study of orthodontic cases chosen from the offices of several university trained orthodontists, who met the criteria of being an expert. The cases used in this particular study received orthodontic treatment by a single university trained orthodontic expert. The requirement for classification as an expert was that the clinician satisfy at least four of the following criteria:

1) more than 10 years of clinical experience,
2) certification by the American Board of Orthodontics,
3) membership in the Edward H. Angle Orthodontic Society,
4) more than 5 years as an orthodontic instructor at an American Dental Association approved orthodontic department,
5) publication of one or more original papers in a peer-reviewed orthodontic journal.

Dr. John Gibbs of San Mateo, who provided the cases for this study, is a clinical professor of Orthodontics at the University of the Pacific and met the other requirements above.

PRESELECTION OF ORTHODONTIC CASES

A random list of all patients for whom treatment had begun after Dr. Gibbs' fifth year of practice and for whom treatment had been completed by January 1, 1990 was generated. Then, using standard random number strategies, a sample of cases were selected based upon a review of their written treatment records. The cases were selected based on the following criteria: 1) "adolescent" subjects between the ages of ten and fifteen at the commencement of orthodontic treatment. (Here the term "adolescent" is used in a somewhat idiosyncratic sense to include all subjects for whom growth is an important factor in treatment planning.) 2) The presence of a mild to moderately severe Angle Class I or Angle Class II malocclusion. 3) Presence of a normal complement of teeth anterior to the second molar in each quadrant. 4) Patient treated without orthognathic surgery. 6) Patient records were to have the following: medical and dental history forms, examination forms, treatment cards, pre-treatment study casts, lateral cephalograms, radiographs, cephalometric tracings and photographs. 7) Absence of chronic disease. 8) No history of prior orthodontic treatment, and 9) Presence of similar post-treatment records as for pre-treatment.

All subjects who met these criteria were sequentially numbered, and then a sample was drawn from a computer generated random list designed to fill the following four categories:

1) 25 "adolescent" Class I non-extraction,
2) 25 "adolescent" Class I extraction,
3) 25 "adolescent" Class II non-extraction,
4) 25 "adolescent" Class II extraction.

Of the available cases, two categories had less than 25 cases. The two categories were "adolescent" Class I extraction and "adolescent" Class II extraction, and had 13 and 24

members respectively, giving a total of 87 cases for this study. These two categories have been over-represented for the purpose of this study as all four categories are not equally represented in the general population. Therefore, this study had a slightly different samples, however, the sample is reasonably representative of the problem being assessed.

The randomly selected cases in each category were then assigned a new number by category, with "adolescent" Class I non-extraction cases being from 100-125, "adolescent" Class I extraction cases from 200-225, "adolescent" Class II non-extraction cases from 300-325, and "adolescent" Class II extraction cases from 400-425. From among the randomly selected cases, 12 were chosen from each of the four categories (48 total) via use of a computer generated random number list. Twelve cases were chosen because this represents approximately half of the cases in each category. The 48 cases were then divided into four groups of 12 cases with each group having an equal number of cases from the 4 different treatment categories. This was done in order to facilitate an equal distribution of cases from the four treatment categories in each group. The four treatment groups were then coded A through D and each case assigned a number from 1 through 12 via computer generated random assignment.

DEMOGRAPHICS OF THE SAMPLE

All of the 48 patients in this study were adolescent patients between the ages of 7.59 to 15.39 years (mean = 10.94 ± 1.76) at the time of pre-treatment records, and between the ages of 12.54 to 18.04 years (mean = 14.92 ± 1.50) at the time of post-treatment records. Females outnumber males by a count of 29 to 19. The proportion of Class I and Class II patients, and extraction and non-extraction patients was equal. The ethnic mix of the population was similar to other practices sampled by our research group in the San Francisco Bay Area.

CASE ACQUISITION

For the collection of the qualitative data, the study casts, photographs, radiographs, and cephalometric tracings for each of the 48 cases were obtained from the orthodontic office of the treating clinician.

SOLICITATION OF CLINICAL INSTRUCTOR PARTICIPATION

In addition to choosing an appropriate sample of subjects, we attempted to obtain a set of clinicians representative of the clinical specialists to whom we expect the results to generalize. In order to satisfy the design requirement of having five independent evaluations for each subject, it was necessary to involve a total of 15 members of the UCSF Division of Orthodontics clinical teaching staff. These clinical instructors were sent a letter from Dr. Sheldon Baumrind thanking them for their past participation in clinical studies in the Division of Orthodontics. All were then asked to participate in this study (excluding mentors Dr. Robert L. Boyd and Dr. Sheldon Baumrind).

The credentials of these clinicians are summarized in Table 1. Like the great majority of clinicians who trained in their age cohorts, all of them were male. In terms of ethnic background, twelve were Caucasians of European extraction, two were of Asian parentage, and one was Black. Although clinicians who received their specialty education at UCSF are over-represented, we believe that these fifteen clinicians do approximately reflect the distribution of education and experience of contemporary university-trained orthodontic specialists whose primary commitment is to clinical practice.

Most of these clinicians who were graduates from our institution have very different practice philosophies and treatment methods, and therefore, were not really as similar to each other as might have been anticipated. A round robin scheme was used in order to facilitate more equal involvement of as many clinicians as possible and to help avoid the potential for clinician burnout during the study.

TABLE 1 CHARACTERISTICS OF THE JUDGES

JUDGE #	SPECIALTY TRAINING AT	YEARS IN ORTHO PRACTICE	YEARS AS CLINICAL INSTR
1	USC	29	25
2	UCSF	7	6
3	UCSF	28	27
4	UCSF	5	4
5	UCSF	8	5
6	U OKLAHOMA	5	5
7	UCSF	8	7
8	ROYAL DENTAL COL/COPENHAGEN	23	23
9	UCSF	33	13
10	UCSF	19	19
11	UCSF	33	30
12	UCSF	44	44
13	UCSF	12	10
14	UCSF	4	2

STUDY DESIGN

In order to accomplish the specific aims related to the manner in which clinicians make decisions, the subjective qualitative part of the study was divided into four tasks as follows:

Task 1: THE DECISION TO EXTRACT - This part of the study gathers subjective impressions from the clinical instructors after evaluation of the complete pre-treatment orthodontic records.

Task 2.1: EVALUATION OF POST-TREATMENT STUDY CASTS - This part of the study gathers subjective impressions from the clinical instructors after evaluation of post-treatment study casts.

Task 2.2: EVALUATION OF POST-TREATMENT PHOTOGRAPHS - This part of the study gathers subjective impressions from the clinical instructors after evaluation of post-treatment frontal and lateral photographs.

Task 3.0: EVALUATION OF TREATMENT OUTCOMES - This part of the study gathers subjective impressions from the clinical instructors after evaluation of both the complete pre and post-treatment orthodontic records of each case.

SUBJECTIVE DATA COLLECTION

The study was planned so that the clinical instructors could participate in the study during the normal time period in which they saw patients with the residents in the orthodontic clinic. It was therefore important to make the completion of the task forms as simple and as expeditious as possible.

Task 1: THE DECISION TO EXTRACT

For Task 1 **(see Task 1 form: Figure 1.0)**, clinicians were to first decide whether extraction or non-extraction therapy would be the appropriate treatment for each patient.

FIGURE 1.0

Investigator Name:_____ Task 1
Sample Group:_____ Date:_____

UCSF Division of Orthodontics - Clinical Decision Making Study

THE DECISION TO EXTRACT

Please review the pretreatment records for this patient and answer the following questions. All pre-treatment records have been provided.

1. Should the treatment of this patient involve extractions in the permanent dentition?

____ yes - please specify most likely pattern of extraction:_____
____ no

If your answer above was "yes" answer A. If your answer above was "no" answer B.

A. Reasons for extraction numbered in order of importance (no more than three) If two criteria have equal weighting, please assign the same rank to both.

____ crowding
____ incisor protrusion
____ to improve the profile
____ Class II correction / A-P discrepancy
____ stability of outcome
____ Other Specify _____
____ Other Specify _____
____ Other Specify _____

B. Reasons for non-extraction numbered in order of importance (no more than three). If two criteria have equal weighting, please assign the same rank to both.

____ normal or acceptable arch length
____ maintenance of profile
____ sufficient residual growth potential
____ spacing
____ excessive overbite, or deep curve of Spee
____ Other Specify _____
____ Other Specify _____
____ Other Specify _____

2. What is the likelihood of extraction in the future if you chose non-extraction initially?

____ Less than 10%
____ Between 10% and 49%
____ 50% or more

3. What is your estimate of the likelihood that orthognathic surgery will be required in the treatment of this patient?

____ Less than 10%
____ Between 10% and 49%
____ 50% or more
____ The above treatment plan is based on 100% orthognathic surgery?

4. The patient's Angle classification is:

____ Class I
____ Class II.1
____ Class II.2
____ Class III
____ Other Specify:_____

Clinicians were then to briefly rank-order up to three reasons leading to their treatment decision. For this part, clinicians were given the five most common categorical reasons for choosing each treatment modality from the Division of Orthodontics' previous prospective study on the decision to extract.[12] Three lines labeled "other" were available for the clinicians to record their own reasons. The number of responses was limited to three to make the data analysis less tedious and limit the time required to fill out the form.
If extraction was chosen initially, the most likely pattern of extraction was requested. If non-extraction treatment was chosen initially, the clinician was asked the likelihood that extractions would be decided upon later. This was done to assess the certainty of the clinician's non-extraction treatment decision and allowed clinicians who routinely do a therapeutic diagnosis to give some assigned value to the possibility of future extraction in those cases started non-extraction. Furthermore, many of the initial records presented in the late mixed dentition and information such as cooperation and growth were not given. Hopefully, this gave the clinicians the freedom to initiate non-extraction therapy when indicated and also the ability to state their uncertainty of how the case might be treated in Phase II. Additionally, it allowed the clinicians a means of expressing how strong of a conviction they had toward the non-extraction approach. The section on orthognathic surgery was done for similar reasons. This allowed for a more realistic decision making process as well as a look at the clinician's judgment when aspects such as growth and cooperation were unknown. The Angle classification was asked in order to determine the degree of agreement using this somewhat limited system of diagnostic classification.

Task 2.1: EVALUATION OF POST-TREATMENT STUDY CASTS

In this task (**see Task 2.1 form: Figure 1.1**), clinicians were asked to select the three post-treatment cases with the "best" occlusion and the three cases with the "poorest" occlusion from among a set of twelve cases based solely on the appearance of post-

FIGURE 1.1

Investigator Name:_____ Task 2.1
Sample Group:_____ Date:_____

UCSF Division of Orthodontics - Clinical Decision Making Study

EVALUATION OF POST-TREATMENT STUDY CASTS

Post-Treatment study casts for twelve subjects who have received full banded orthodontic therapy are arrayed on this table.

Please examine each set of casts. Then indicate below the I.D. numbers of the three sets of casts representing the best occlusion and the three representing the poorest occlusion. For each of the six "extreme" cases, please indicate briefly no more than three reasons leading to your decision.

A. "BEST" OCCLUSIONS

I.D. # _____	I.D. #_____	I.D. #_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

B. "POOREST" OCCLUSIONS

I.D. # _____	I.D. #_____	I.D. #_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

treatment study casts. A grouping system was used rather than have the clinicians rank-order all 12 cases because of time constraints, the potential for burnout of the clinicians, and in order to force the distribution of the cases. This system was also chosen over a system in which only one case would be chosen as either "best" or "poorest" as this would have constrained the clinician's choices and made it difficult to rank-order the cases of the five clinicians judgments. In order not to constrain the clinicians by giving predetermined choices, three lines were given below each case choice for the clinicians to indicate briefly in open-ended form, no more than three reasons leading to their decision. This strategy produces a data set which is free from our own antecedent biases, but unfortunately is still relatively difficult to interpret.

Task 2.2: EVALUATION OF POST-TREATMENT PHOTOGRAPHS

This task **(see Task 2.2 form: Figure 1.2)** is analogous in design to Task 2.1, except that clinicians were asked to select from a set of twelve cases, the three post-treatment cases with the "best" facial appearance and the three cases with the "poorest" facial appearance based solely on the appearance of post-treatment frontal and lateral facial photographs. Again, following the same strategy, clinicians were to briefly indicate no more than three reasons leading to their decision on the lines below each case choice.

Task 3.0: EVALUATION OF TREATMENT OUTCOMES

Task 3.0 **(see Task 3.0 form: figure 1.3)** is analogous in design to the evaluation of post-treatment records. However, in this task, each clinician was asked to independently evaluate pre- and post- treatment records for a set of twelve cases and choose the three cases that experienced the "most" improvement from treatment and to choose the three

FIGURE 1.2

Investigator Name:_____ Task 2.2
Sample Group:_____ Date:_____

UCSF Division of Orthodontics - Clinical Decision Making Study

EVALUATION OF POST-TREATMENT PHOTOGRAPHS

Post-Treatment photographs for twelve subjects who have received full banded orthodontic therapy are arrayed on this table.

Please examine each set of frontal and lateral photographs. Then indicate below the I.D. numbers of the three sets of photographs representing the best appearance and the three representing the poorest appearance. For each of the "extreme" sets of photographs, please indicate briefly no more than three reasons leading to your conclusion.

A. "BEST" APPEARANCE

I.D. #_____	I.D. #_____	I.D. #_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

B. "POOREST" APPEARANCE

I.D. #_____	I.D. #_____	I.D. #_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

FIGURE 1.3

Investigator Name:_____ Task 3
Sample Group:_____ Date:_____

UCSF Division of Orthodontics - Clinical Decision Making Study

EVALUATION OF TREATMENT OUTCOMES

Pre- and post-treatment records for twelve subjects who have received full banded orthodontic therapy are arrayed on this table.

We suggest that you first spend 2-3 minutes glancing at the records of each of the twelve subjects. Then, after you have a general idea about all 12 cases, review them as needed and identify the three cases representing the greatest improvement and the three cases representing the least improvement. Finally, for each of these six "extreme" cases, please indicate briefly no more than three reasons for your decision.

A. GREATEST IMPROVEMENT

I.D. # _____	I.D. # _____	I.D. # _____
_____	_____	_____
_____	_____	_____
_____	_____	_____

B. LEAST IMPROVEMENT

I.D. # _____	I.D. # _____	I.D. # _____
_____	_____	_____
_____	_____	_____
_____	_____	_____

cases which experienced the "least" improvement following treatment. Again, following the same strategy, clinicians were asked to briefly indicate no more than three reasons leading to their decision on the lines below each selected case.

STUDY DESIGN STRATEGY

The strategy for presenting these tasks to the evaluating clinicians involved decreasing clinician bias. Without the group of clinicians knowing at the onset, during the course of the study all four tasks were to be done for each of the 48 randomly selected cases. Therefore there would be no reason to try to retain information about any of the cases, which hopefully decreased some bias.

It was important to order the tasks to also decrease the likelihood of bias. The task which seemingly would produce the least bias if ordered first was Task 2.1, the evaluation of post-treatment study casts. In this task the only records evaluated were post-treatment study casts for which it would be difficult to remember particular teeth when performing the other tasks at a later date. The next task which would seemingly produce the least bias was Task 2.2, the evaluation of post-treatment photographs.

All of the photographs were lab mounted with intra- and extra- oral photographs. Because the aim was to determine how clinicians make decisions from post-treatment facial photographs independent of other records, the mounted photographs were placed into individual x-ray envelopes, cut so that only the non-smiling post-treatment frontal and lateral facial photographs were displayed. The smiling frontal facial photograph was covered because we did not want the display of teeth to enter into the decision of facial appearance.

These two tasks were grouped together for joint evaluation by clinicians, with Task 2.1 always being completed for a given set before proceeding to Task 2.2 for the same set. Clinicians were told not to draw conclusions between the cases for each task as each represented a completely different set of cases. Tasks 2.1 and 2.2 were completed for the entire sample before proceeding with the next task.

In Task 1, the decision to extract, clinicians were asked to evaluate complete pre-treatment records: intraoral and extraoral photographs, radiographs, cephalometric tracings and study casts. There was potential for some bias when evaluation of the pre-treatment records occurred, as some of the pre-treatment faces might have appeared similar to the post-treatment face. However, the chances are small that the same five clinicians that evaluate this task will also be the same five that examine the records in Task 2.2. It was also important to complete this task before proceeding with Task 3.0, when the complete pre- & post- treatment records were displayed so that bias concerning how the subjects were actually treated and actually grew did not affect the clinicians decisions regarding each case.

For Task 3.0, the evaluation of treatment outcomes, clinicians were asked to evaluate complete pre- and post- treatment records: extraoral and intraoral photographs, radiographs, cephalometric tracings and study casts. This section of the study was ordered last because we did not want the clinicians to see the complete pre- and post- treatment records first, and then be biased when examining a portion of the records for the other tasks.

GENERAL DISPLAY OF CASES

Names of both patient and the expert clinician who treated the case were blocked out with black tape on the photographs, radiographs, and cephalometric tracings. Cases were displayed in the part-time faculty office in the Division of Orthodontics on a large counter by set (A-D), and in ascending order, left to right. Typically, only one set was shown at a time due to available counter space and the expected time needed for evaluating the cases. However, for Task 2.1 & 2.2 different sets of cases were shown at one time to facilitate doing more than one task at a time whenever sequencing permitted.

The case code was marked on Avery adhesive labels and placed on the mounted photographs and on top of the maxillary study casts for Task 2.1 and 2.2, the evaluation of post-treatment study casts and photographs. For Task 1, the decision to extract, pre-treatment intraoral and extraoral photographs, radiographs, and cephalometric tracings for each case were placed into individual x-ray envelopes marked with the case code, sex, and age of the patient at the time of the records. The corresponding pre-treatment study casts were then placed on top of the envelope containing the rest of the pre-treatment records.

For Task 3.0, the evaluation of treatment outcomes, pre-treatment extraoral and intraoral photographs, radiographs, and cephalometric tracings for a given case were placed into one x-ray envelope and marked with the case code, sex, and age of the patient at the time of the records. The corresponding pre-treatment study casts were then placed on top of the envelope containing the rest of the pre-treatment records and displayed as previously discussed. The following was repeated for the post-treatment records and then they were placed in front of their corresponding pre-treatment records.

Each set of cases was displayed for a period of time, typically from one to three weeks, until 5 clinical instructors in the Division of Orthodontics had independently examined all 12 cases and filled out the proper form(s) for each task. One exception to this was with Task 1, the decision to extract. As this task did not require examination of all twelve cases in order to complete a task form, cases in the set were displayed until any combination of 5 different clinicians had examined each case.

OBJECTIVE DATA COLLECTION

Preparation of head films for digitization

All patient and doctor information was blocked out and the head films were labeled with the coding scheme described previously.

The films were photographed using a specially designed light box which incorporated standard fiducials points at the right and left borders. The pre-treatment head films were photographed with 4 fiducial points and 6 anatomic plane registration points while the post-treatment head films were photographed with only the 4 corner fiducials . The 4 fiducial points are used for within film enlargement standardization while the anatomic plane registration points are used for superimposing between head films of different time points.

The duplication setup used a 35 mm Cannon AE-1. The film was Kodak Ektrachrome slide duplicating film ESD 135-36. ASA=25. The camera was positioned on a stand a fixed distance from the light box. The camera was leveled and focused using a standard protocol for each exposure.

To determine the proper camera exposure, the head film was matched to a set of gray scale films taken with known exposure settings to give the best detail of the anatomic structures of interest. The head film was aligned and centered on the light box with a border containing the appropriate points described above. Care was taken to block out any extraneous light along the border of the film. Three photos were taken of each film with a shutter speed of 1/2, 1, and 2 seconds. A cable activated shutter button was used

to minimize any camera vibration. Additionally, 10 -15 seconds was allowed between exposures to allow the camera to stabilize prior to the next exposure. The three different exposure settings were used to accentuate differences in hard and soft tissue anatomy. The slides with longer exposure times accentuated soft tissue while slides with shorter exposures accentuated the hard tissue.

Cephalometric Landmarks

The following hard and soft tissue landmark definitions were adapted and refined by the three operators performing the digitization to minimize ambiguity in identifying the landmarks on the head films. Every effort was made to define landmarks on their own merit without use of other points.

20 Soft tissue landmarks

1. GLABELLA -The point of greatest soft tissue prominence on the soft tissue forehead.

2. SNASION - The soft tissue surface point anterior to nasion. Located by extending the SN line.

3. SBRIDGE - The point of maximum concavity on the soft tissue surface at the bridge of the nose.

4. SNOSEMID - The midpoint between SBRIDGE and MNOSETIP on the superior anterior surface of the nose.

5. UNOSETIP - The inferior most point on the superior anterior surface of the nose where that surface joins the nasal bulb.

6. MNOSETIP -The anterior most point on the soft tissue outline of the nasal bulb.

7. LNOSETIP - The anteroinferior surface point corresponding to the junction of the nasal septum and nasal bulb.

8. SUBNOSE - The surface point corresponding to the junction of the soft tissue septum with the superior most point on the surface of the upper lip.

9. USULCUS - The point of maximum concavity between SUBNOSE and UVEM. (soft tissue A point)

10. UVERM - The estimated junction between the epidermis of the upper lip and the vermilion border in the midsagittal plane.

11. ULIPANT - The most anterior point on the outline of the upper lip.

12. ULIPINF - The inferior most point on the upper lip. This may be at, above or below point LLIPSUP. If it is above, then the lips do not seal.

13. LLIPSUP - The superior most point on the lower lip.

14. LLIPANT - The point midway between LLIPSUP and LVERM on the surface of the lower lip.

15. LVERM - The estimated junction of the vermilion border of the lower lip with the epidermis in the midsagittal plane.

16. LSULCUS - The point of deepest concavity between points LVERM and SCHIN.

17. SCHIN - The point of greatest convexity on the soft tissue surface of the chin.

18. SPOGONION - The point on the soft tissue directly anterior to Pogonion on a line Parallel to Frankfurt Horizontal.

19. SMENTON X - The point on the soft tissue anterior to menton. Located by extending the Mandibular Plane line (Go-Gn) to the intersection with the soft tissue outline.

20. SMENTON Y - The point on the soft tissue below menton. Located by extending the line Nasion-Menton to the intersection with the soft tissue outline.

Hard tissue landmarks

1. PORION – The superior-most point of the ear rod. This point is sometimes called "machine porion."

2. SELLA – The midpoint of the pituitary fossa as determined by inspection.

3. NASION – the most antero-inferior point on the frontal bone at the nasofrontal suture.

4. ORBITALE – The inferior-most point of the orbital margin, using the more anterior of the orbital images.

5. UPPER INCISOR APEX – the point of intersection between the long axis of the more anteriorly positioned upper central incisor and the contour of the tooth's root end curvature.

6. POINT A – The deepest point on the curvature of the surface of the maxillary bone between "ANS" and the alveolar crest of the upper central incisor.

7. UPPER INCISOR EDGE – The tip of the incisal edge of the more anteriorly placed upper central incisor.

8. LOWER INCISOR EDGE – The top of the incisal edge of the more anteriorly placed lower central incisor.

9. POINT B – The deepest point on the curvature of the anterior border of the mandible between pogonion and the alveolar crest of the lower central incisor.

10. LOWER INCISOR APEX – The point of intersection between the long axis of the most anteriorly positioned lower incisor and the contour of the tooth's root and curvature.

11. POGONION – The anterior-most point on the bony chin at the midline.

12. MENTON – The inferior-most point on the mandible at the symphysis.

13. UPPER MOLAR APEX – The point of intersection between the long axis of the mesial root of the more anteriorly positioned upper first molar and the contour of curvature of that tooth's root surface.

14. UPPER MOLAR CUSP – The occlusal-most point of the MB cusp of the more mesially positioned lower first molar.

15. LOWER MOLAR CUSP – The occlusal-most point of the MB cusp of the more mesially positioned lower first molar.

17. GONION (UPPER) – The lowest point on the curvature of the angle of the mandible where the body of the mandible meets the ramus. Estimates are made for both sides of the mandible. The more superior value is considered to represent the left side.

18. GONION (LOWER) – Same as Gonion (upper) above but for the lower of the two angles. This value is considered to represent the right side.

19. CONDYLE –The point on the contour of the condyle indicating the longest distance from "pogonion" (after Harvold).

20. ANTERIOR NASAL SPINE – the anterior-most point on the surface of the lower contour of anatomical anterior nasal spine at which the vertical thickness of the structure is 3 mm. (after Harvold).

21. POSTERIOR NASAL SPINE – The most posterior extension of the palatine bone in the midline of the hard palate.

22. BASION- The most inferior point on the anterior margin of the foramen magnum in the midsaggital plane.

23. ARTICULARE- intersection of basispheniod and the posterior border of the condyle of the mandible (using the midpoint between the double image of the condyles if two borders present on the film).

Digitizing Apparatus

The general procedures for cephalometric head film analysis followed The University of California San Francisco method.[24] The information below summarizes the protocol used.

Once the slides had been developed, the slide that best demonstrated the anatomical features of interest is projected on to a digitizing table. First, the four corner fiducials are located which are used for enlargement standardization and for within-film

superimposition. The desired landmarks are then located by the operator, and their location is encoded into the computer in the form of Cartesian coordinates. The origin of the coordinate system for the general superimposition is at Sella with the X axis parallel to the S-N line. The landmarks and displacements for the maxillary and mandibular superimpositions are located on a coordinate system with the origin at the midpoint between the upper and lower molar cusps with the X axis represented as the Downs occlusal plane. These coordinate systems were chosen in order to show skull and facial changes in relation to the S-N line, and to show tooth displacements relative to the occlusal plane. With the landmarks encoded in this way, both linear and angular cephalometric measures can be easily made with the proper instruction to the computer.

Triple determined location of landmarks

In order to improve the accuracy and reliability of landmark location, three operators (Jack DuClos, Paul Sherick, Rick Herrmann) performed the landmark identification and superimpositions for each head film. Prior to performing the final digitization and superimposition of the head films for the 48 cases in the study, several steps were taken to calibrate the three operators. First, the operators discussed the definition and method of location for each landmark until the protocol for locating each landmark was agreed upon.

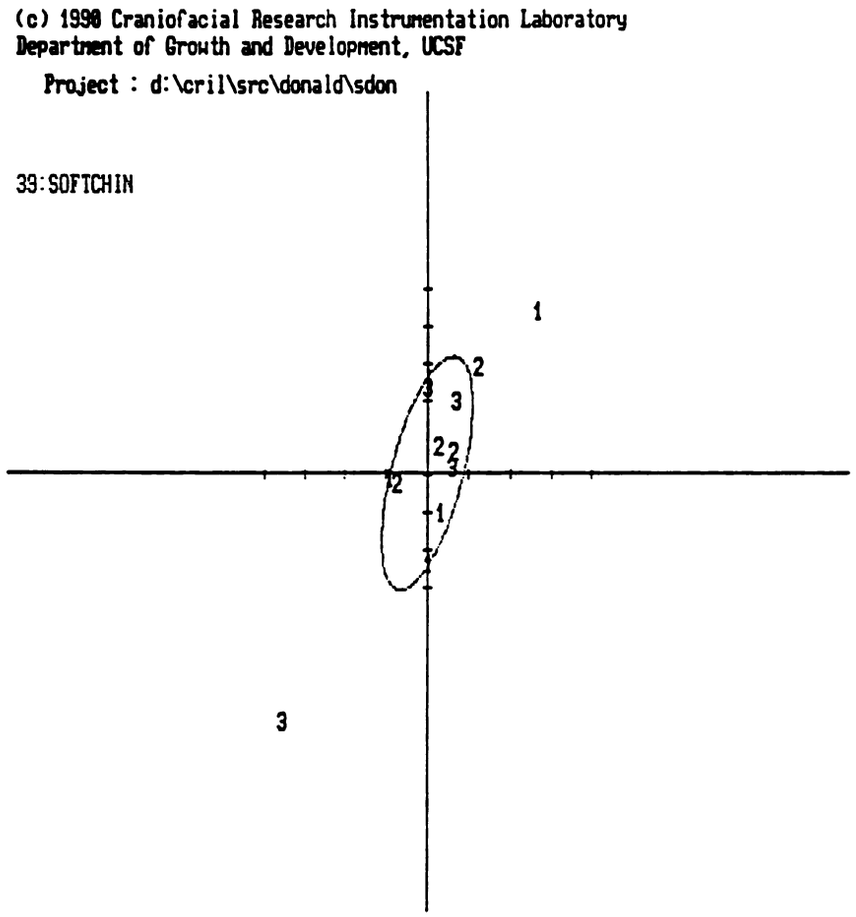
Next, A few trial runs were performed on a limited number head films by each of the three operators. Previous studies on landmark location have shown that different landmarks demonstrate different characteristic envelopes of error on location attempts.[25] If at least two operators were within the envelope of error for a given landmark, the computer would encode that landmark by averaging the X and Y coordinates assigned to that point located by only two operators. This is done to avoid the coordinates values of

one operator, that may be far beyond the accepted envelope of error, from being averaged into the final X and Y coordinate values assigned to a given landmark. When all three operators are within the envelope of error, the computer averages all three of the operators coordinate values. The computer operation that calculates the mean coordinate values of the three operators is called AVPIC. If none or only one of the operators fall within the characteristic envelope of error, no values will be averaged or assigned to that landmark. The computer will high light that film and give an appropriate message identifying the landmarks for which no coordinate values were recorded. The computer also identifies the operators who's coordinate values are rejected.

Another computer operation ELLIPSE displays the location of the assigned coordinate values of each landmark for each operator in relation to the landmarks characteristic envelope of error. As an example, **Figure 1.4** displays the soft tissue landmark SOFTCHIN located by the three operators on three head films in relation to its characteristic envelope of error. Operators 1 and 3 have coordinate values beyond the envelope of error for one of the head films.

The computer would print the AVEPIC and ELLIPSE file for the head films digitized on the initial trial runs to calibrate the operators. The landmarks with which the operators were having variation beyond the accepted envelopes of error were again discussed and their method of location refined. Another trial run, on a different set of head films, was done and the above process repeated with the AVEPIC and ELLIPSE output until the operator's assigned coordinate values were located within the characteristic envelope of error for each of the landmarks. At this point it was felt that the operators were calibrated sufficiently to proceed with the final digitization and superimposition of the head films for the 48 cases.

FIGURE 1.4


(c) 1990 Craniofacial Research Instrumentation Laboratory
Department of Growth and Development, UCSF
Project : d:\cril\src\donald\sdon
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The head films of the 48 cases were digitized by the three operators and the AVEPIC files were generated. The computer highlighted the films for which some of the coordinate values for the landmarks were not recorded. One of the operators would redigitize the four fiducials and the landmark(s) on the films that lacked recorded coordinate values. The computer operation AVEPIC would be run again for each of these films. If the computer still rejected the coordinate values assigned a second time by one of the three original operators no value was recorded for that landmark. Additionally, no further attempt was made to assign coordinate values for that landmark. It was concluded that the wide variation of coordinate values assigned for such a landmark most likely would be the result of the poor quality of the anatomic landmark represented on the film. When looking back at these films, this was generally the case.

Head film superimpositions

Once the digitization of the landmarks on the head film were complete, the three operators preceded to superimpose the pre (T1) and post-treatment (T2) head films. Acetate paper was used for the superimpositions. The T2 film was first projected on to the digitizing table and the four corner fiducials located with a pencil. Next, the structures of the anterior cranial base were outlined as well as the bony outlines of the maxilla and mandible. The pre-treatment head film (T1) was then projected and the T2 tracing was overlaid onto the T1 head film and superimposed on the anterior cranial base. The right and left anatomic plane registration points for anterior cranial base on the T1 film were transferred to the T2 tracing. Next, the bony outlines of the maxilla and mandible on the T2 tracing were superimposed, according to the method of anatomic best fit, on the corresponding structures on the T1 film. The appropriate anatomic plane registration points for the maxilla and the mandible were transferred from the T1 film to the T2 tracing. At this point, the T2 tracing is set aside and a new piece of acetate is

overlaid onto the projected T1 film. The four corner fiducials and the six anatomic plane registration points were transferred to the T1 tracing. This sequence of procedures were done for all of the 48 cases.

When the superimpositions were completed, the T1 and T2 acetate tracings were taped to the digitizing board, and their fiducials and anatomic plane registration points were digitized in a similar fashion as described for locating the landmarks. Characteristic envelopes of error have also been determined for the superimposition of the anatomic plane registration points.[26] The computer operations that determine the coordinate values for the landmarks works in an identical way to determine the coordinate values for the anatomic plane registration points for each tracing. As described above, If no value was recorded by the computer for one of the registration points, one of the three operators would repeat the superimposition as necessary.

At this point the computer contained the necessary information from the head films to calculate the desired cephalometric measures with a request file. A request file was generated with the instructions to calculate the cephalometric measures for hypothesis testing. The output from the request file(**see Appendix**) was loaded into a SAS program to allow tests for association between these measures and the subjective data gathered from the five skilled clinicians.

RESULTS

Extraction/Non-extraction Decision Making

For this part of the study the continuos variable **summ_xnx** was used to represent the subjective data for the propensity to extract. A score of 5 is assigned to cases where all five clinicians agreed on extraction treatment, and a score of 0 was given to the cases that the five clinicians unanimously agreed on a non-extraction approach. Cases with a score of 2,3, or 4, represent the "borderline" extraction cases. A score of 4 represents a case where four of the five clinicians chose an extraction approach and one clinician chose non-extraction approach. When three of the five clinicians chose an extraction approach, the case was given a score of 3, and so on depending on the ratio of disagreement between the five clinicians. This scoring system was developed to quantifiably represent the propensity to extract in the "borderline" cases where the decisions were unevenly split between the five clinicians. **TABLE 2.0** summarizes the **summ_xnx** extraction scores, and compares the decision of the five clinicians with how the cases were actually treated represented by the variable **gibbsxnx**. The left hand column represents the extraction score 0 - 5 (**summ_xnx**). The row at the top represents how the cases were treated, 0 = non-extraction and 1 = extraction (**gibbsxnx**).

TABLE 2.0

TABLE OF SUMM_XNX BY GIBBSXNX

SUMM_XNX	GIBBSXNX		
Frequency	0	1	Total
0	17	3	20
1	4	3	7
2	2	4	6
3	0	3	3
4	1	5	6
5	0	6	6
Total	24	24	48

Specific extraction/non-extraction hypotheses

Rationale: Previous findings from studies on the extraction/non-extraction decision making process identified reasons most often cited in deciding to extract. These reasons in decreasing order of frequency were crowding, incisor protrusion, fullness of the profile, class II severity, and stability.[12] The following hypotheses test for trends between the five clinicians extraction decision and those reasons cited above which can be objectively measured on a cephalometric head film.

The following outline represents the strategy to test the extraction hypotheses.

A. Select a limited number of cephalometric measures to represent the objective variable of interest.

T1. Test the inter-relationship among the cephalometric measures.

a. Spearman Rank Correlation

T2. Test the association between the cephalometric measure that best represents the objective variable of interest (T1) and the subjective continous variable **summ_xnx.**

a. Spearman Rank Correlation

Each of the following hypotheses followed this outline.

1. Unanimous extraction cases will tend to have greater incisor protrusion than unanimous non-extraction cases.

Cephalometric measures of incisor protrusion:

1. UIPP_01
2. LIMPA_01
3. IIANG_01

T1 Test the inter-relationship among these measures.

a. Spearman Rank Correlation **TABLE 2.1**

Spearman Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 48

	UIPP_01	LIMPA_01	IIANG_01	SUMM_XNX
UIPP_01	1.00000	-0.02128	-0.82143	0.32173
	0.0	0.8859	0.0001	0.0258
LIMPA_01	-0.02128	1.00000	-0.34205	-0.12882
	0.8859	0.0	0.0173	0.3829
IIANG_01	-0.82143	-0.34205	1.00000	-0.37637
	0.0001	0.0173	0.0	0.0084
SUMM_XNX	0.32173	-0.12882	-0.37637	1.00000
	0.0258	0.3829	0.0084	0.0

T1 Revealed that IIANG_01 had the highest correlation with the other measures of incisor protrusion and was the variable used to run the T2 tests. **TABLE 2.1**

T2 The Spearman rank correlation detected an association with a r value of -.38 between the variables IIANG_01 and **summ_xnx** at a p=.0084 level of significance **FIG 2.1.**

2. Unanimous extraction cases will tend to have greater anterior-posterior skeletal discrepancies than unanimous non-extraction cases.

Cephalometric measures of anterior-posterior skeletal relationships:

1. ANPG_01
2. ANB_01
3. WITSX_01

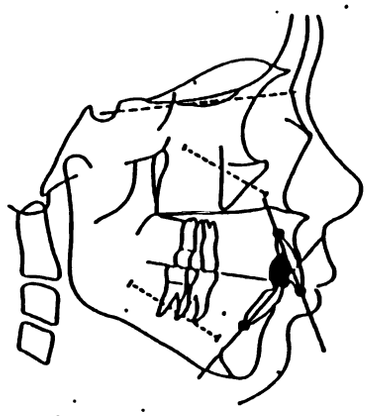
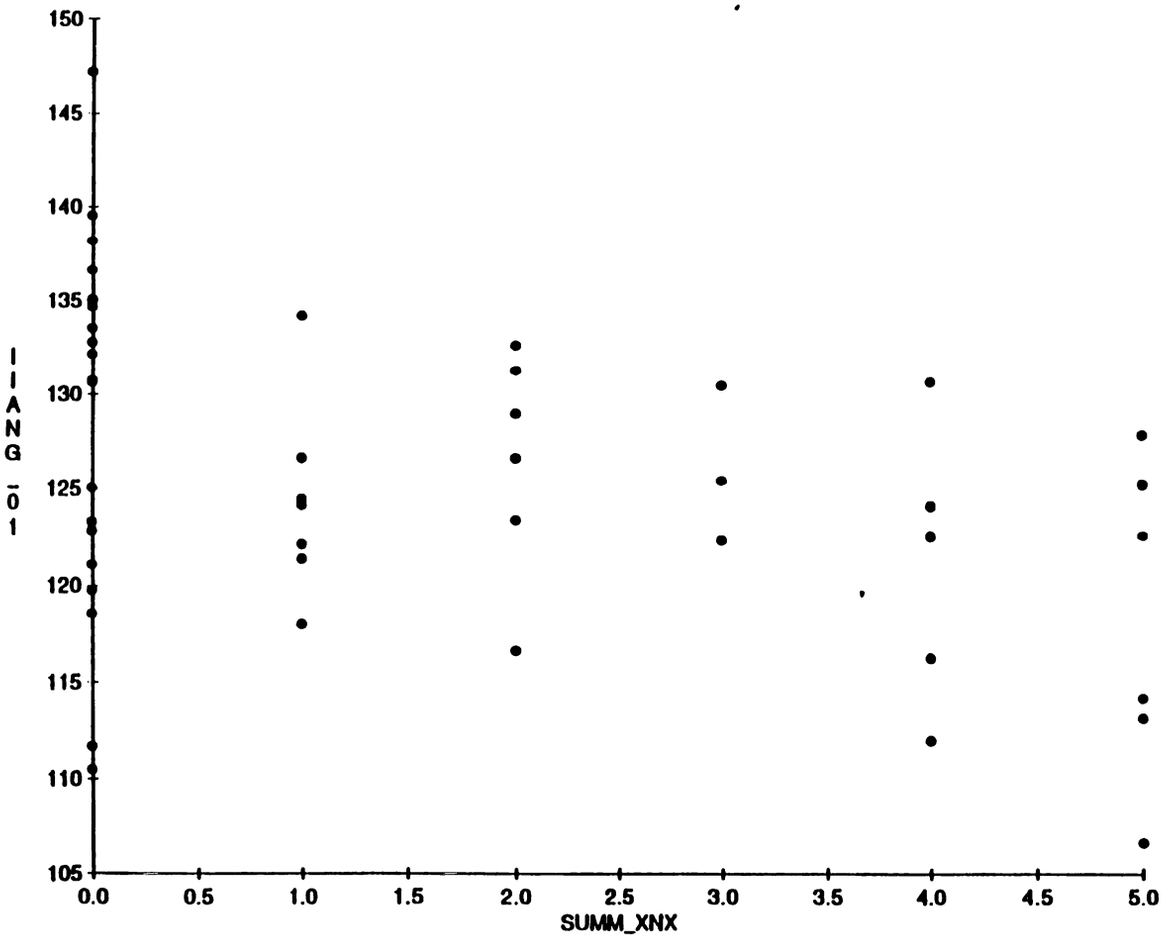


FIGURE 2.1 :IIANG_01 vs SUMM_XNX

r=-.38 p=.0084



T1 Test the inter-relationship among these measures.

a. Spearman Rank Correlation **TABLE 2.2**

Spearman Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 48

	ANPG_01	ANB_01	WITSX_01	SUMM_XNX
ANPG_01	1.00000	0.94463	-0.60531	0.27479
	0.0	0.0001	0.0001	0.0587
ANB_01	0.94463	1.00000	-0.75006	0.21410
	0.0001	0.0	0.0001	0.1439
WITSX_01	-0.60531	-0.75006	1.00000	-0.19218
	0.0001	0.0001	0.0	0.1907
SUMM_XNX	0.27479	0.21410	-0.19218	1.00000
	0.0587	0.1439	0.1907	0.0

T1 Revealed that ANB_01 had the highest correlation with the other measures of anterior-posterior skeletal relationship and was the variable used to run the T2 tests. **TABLE 2.2.**

T2 The Spearman rank correlation detected an association with a r value of .21 between the variables ANB_01 and **summ_xnx** that was not significant at a level of p=.05 **FIG 2.2.**

3. Unanimous extraction cases will tend to have more convex profiles than unanimous non-extraction cases.

Cephalometric measures of profile convexity:

1.CONVX_01

2.STFC_01

T1 Test the inter-relationship among these measures.

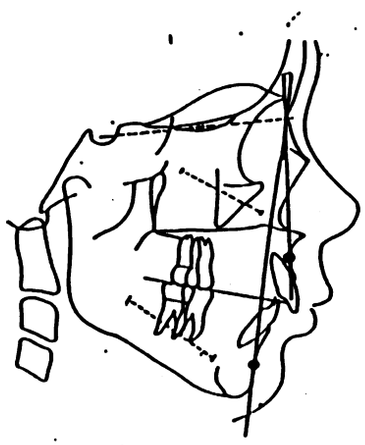
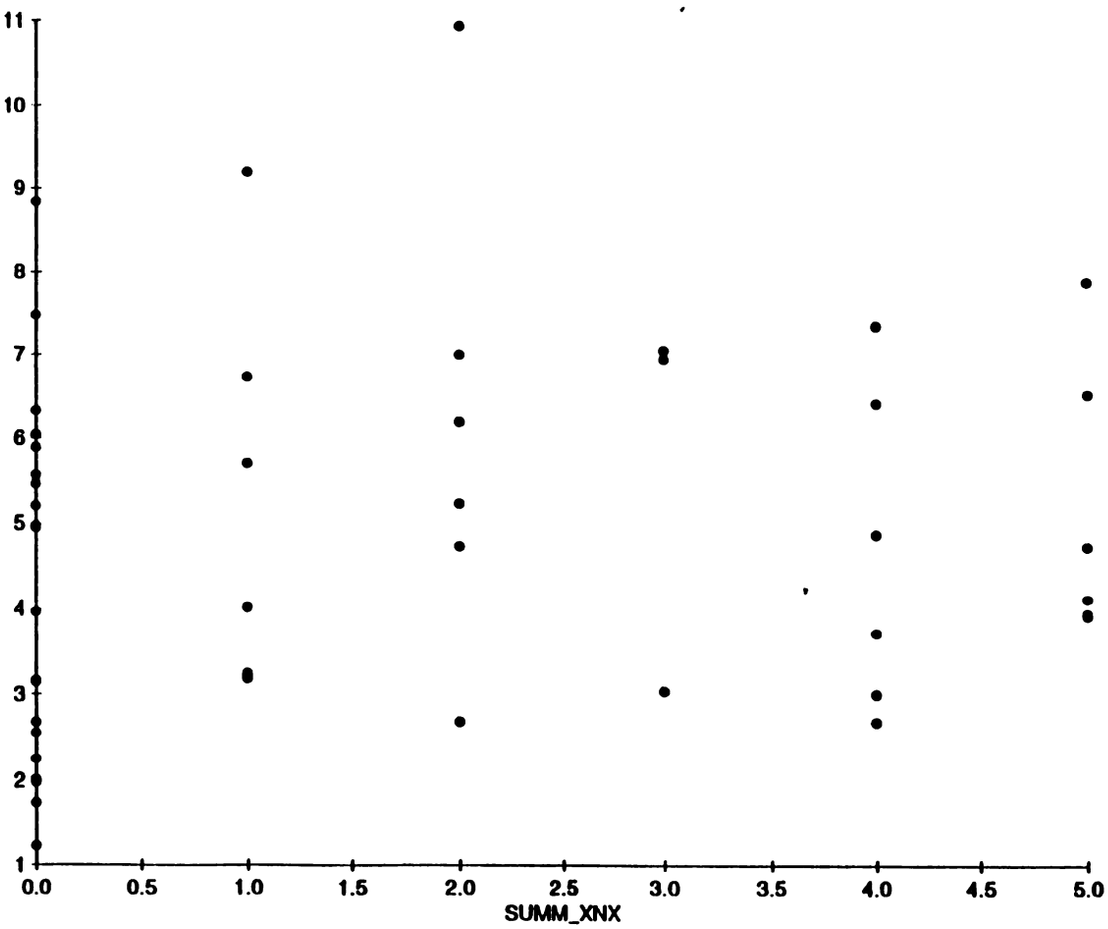


FIGURE 2.2 :ANB_01 vs. SUMM_XNX

r=.21 p=.14



a. Spearman Rank Correlation **TABLE 2.3**

Spearman Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 48

	CONVX_01	STFC_01	IGAP_01	ULREX_01	LLREX_01	SUMM_XNX
CONVX_01	1.00000	0.63634	0.12582	0.58793	0.44464	-0.27026
	0.0	0.0001	0.3941	0.0001	0.0015	0.0632
STFC_01	0.63634	1.00000	0.10346	0.39134	0.38493	-0.01687
	0.0001	0.0	0.4841	0.0060	0.0069	0.9094
IGAP_01	0.12582	0.10346	1.00000	-0.00136	-0.07426	-0.14720
	0.3941	0.4841	0.0	0.9927	0.6159	0.3181
ULREX_01	0.58793	0.39134	-0.00136	1.00000	0.83228	-0.40570
	0.0001	0.0060	0.9927	0.0	0.0001	0.0042
LLREX_01	0.44464	0.38493	-0.07426	0.83228	1.00000	-0.32366
	0.0015	0.0069	0.6159	0.0001	0.0	0.0248
SUMM_XNX	-0.27026	-0.01687	-0.14720	-0.40570	-0.32366	1.00000
	0.0632	0.9094	0.3181	0.0042	0.0248	0.0

T1 Revealed that CONVX_01 and STFC_01 have an r value of .64 at a significance level of p=.0001 and both variables were used to run the T2 tests. **TABLE 2.3.**

T2 The Spearman rank correlation failed to demonstrate a significant association between the two variables of profile convexity and **summ_xnx FIG 2.3** and **2.4.**

4. Unanimous extraction cases will tend to have more lip fullness than unanimous non-extraction cases.

Cephalometric measures of lip fullness:

1.ULREX_01

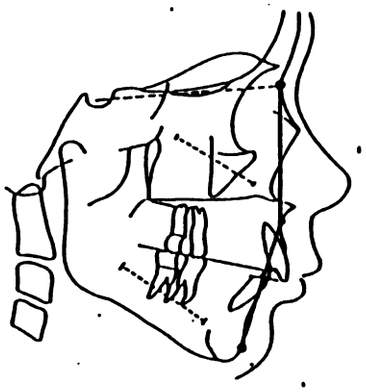
2.LLREX_01

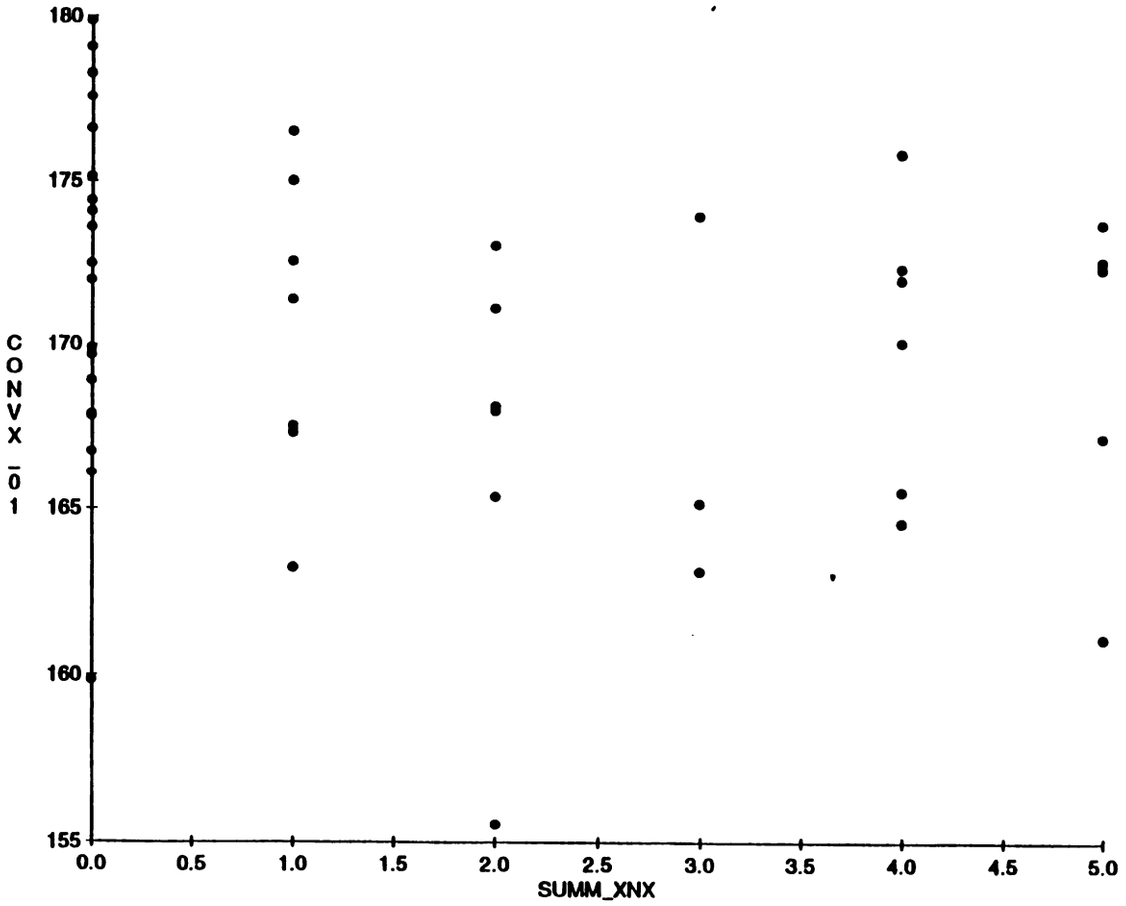
Note: negative values = more fullness

T1 Test the inter-relationship among these measures.

FIGURE 2.3 :CONVX_01 vs. SUMM_XNX

r=-.27 p=.063





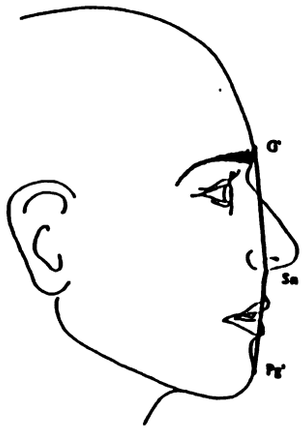
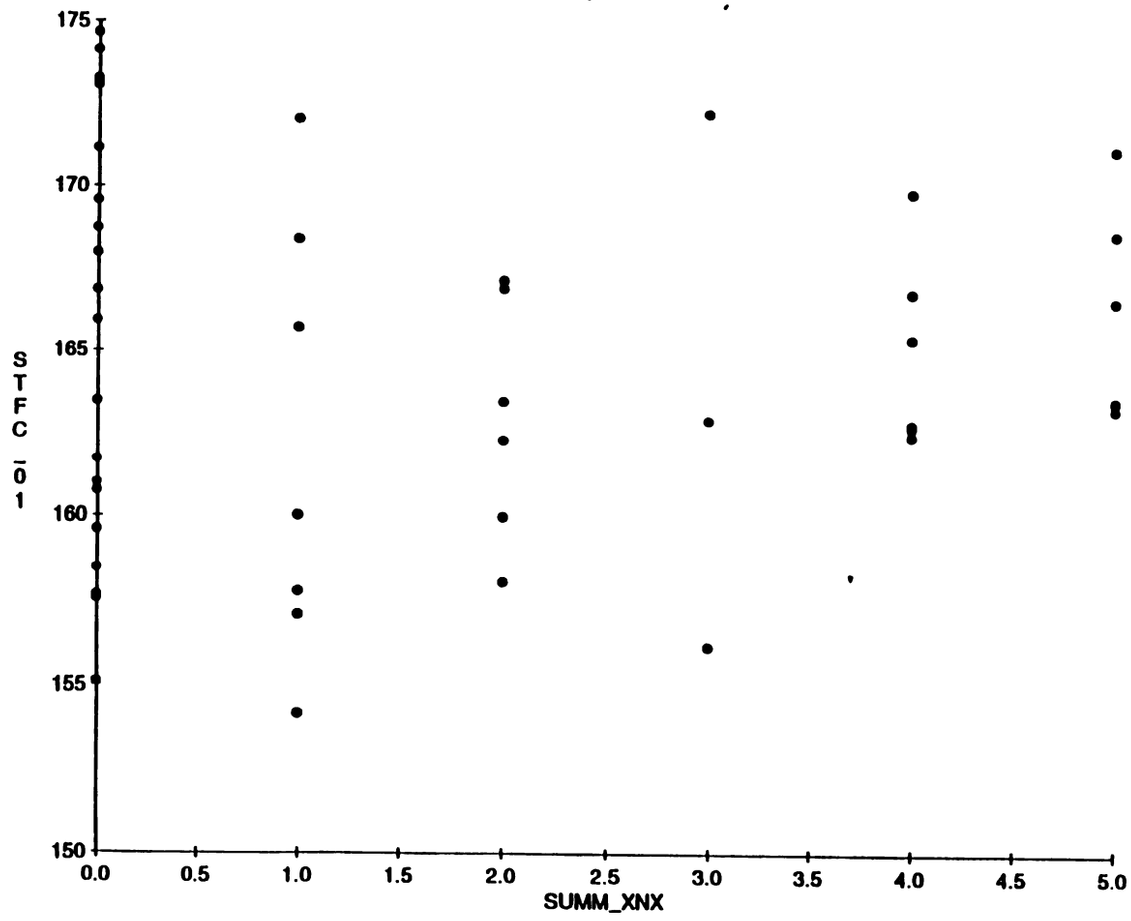


FIGURE 2.4 :STFC_01 vs. SUMM_XNX



a. Spearman Rank Correlation **TABLE 2.3**

T1 Revealed that ULREX_01 and LLREX_01 have an r value of .83 at a significance level of p=.0001 and both variables were used to run the T2 tests. **TABLE 2.3**

T2 The Spearman rank correlation demonstrated an association with r value -.41 between ULREX_01 and **summ_xnx** at a significance level of p=.009 **FIG 2.5**. The test also showed an association between LLREX_01 and **summ_xnx** r value -.32 at a significance level of p=.025 **FIG 2.6**.

5. Unanimous extraction cases will tend to have more lip incompetence than unanimous non-extraction cases.

Cephalometric measure of lip incompetence:

1.IGAP_01

T2. The Spearman rank correlation fails to demonstrate a significant association between the measure of lip incompetence and **summ_xnx**. **FIG 2.7**.

6. Unanimous extraction cases will tend to have greater vertical skeletal relationships than unanimous non-extraction cases.

Cephalometric measures of vertical skeletal relationship:

1.MANIN_01

2.VERJR_01

3. MPA_T_01

4. TFH_01

5. LFH_01



FIGURE 2.5 :ULREX_01 vs. SUMM_XNX

r=-.41 p=.0042

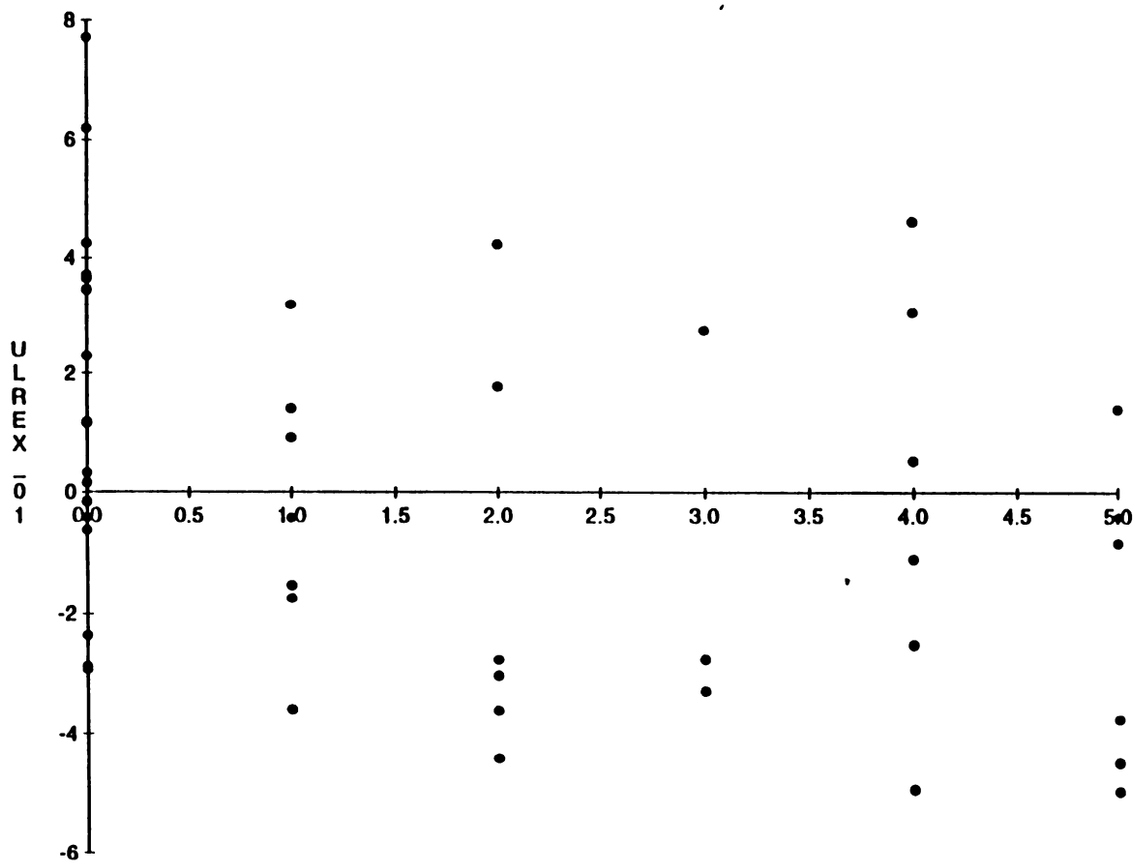




FIGURE 2.6 : LLREX_01 vs. SUMM_XNX

r=-.32 p=.025

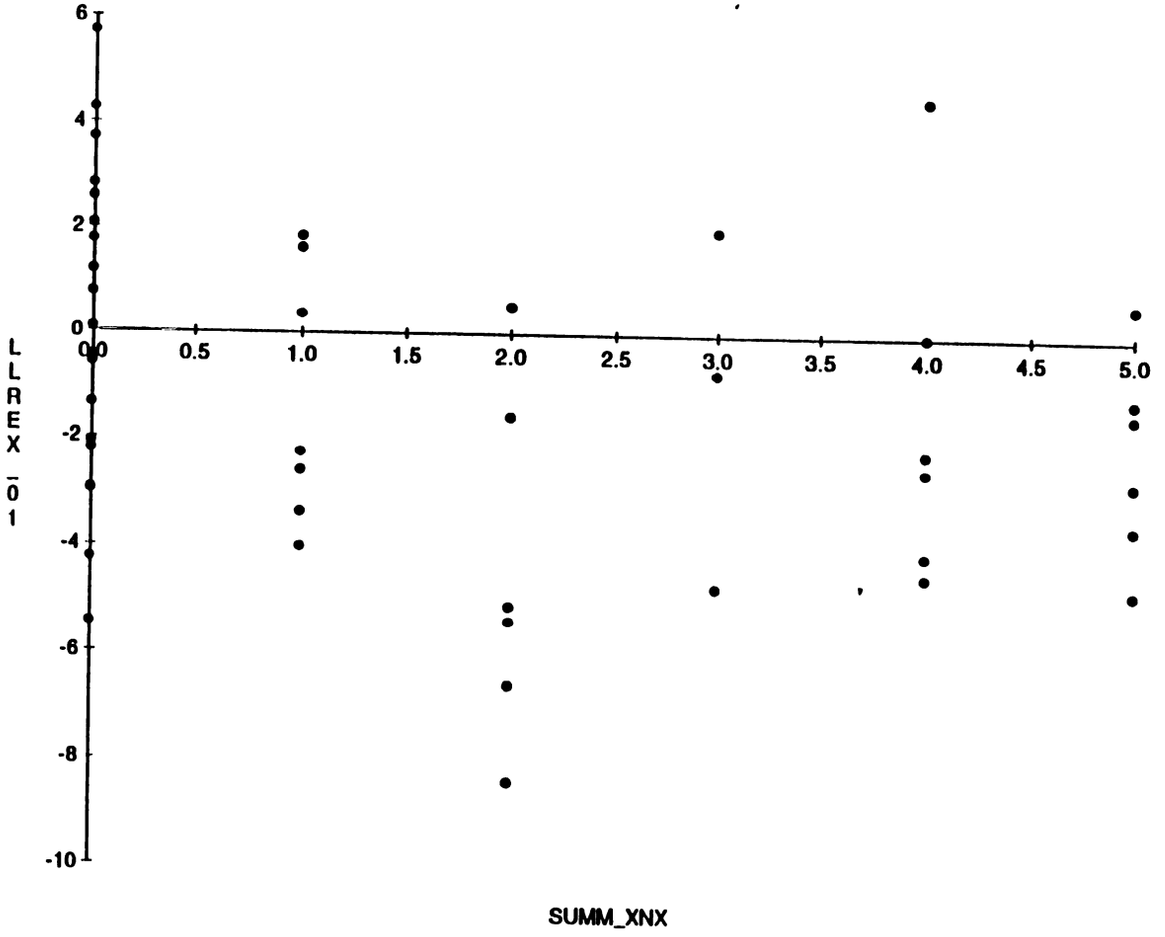
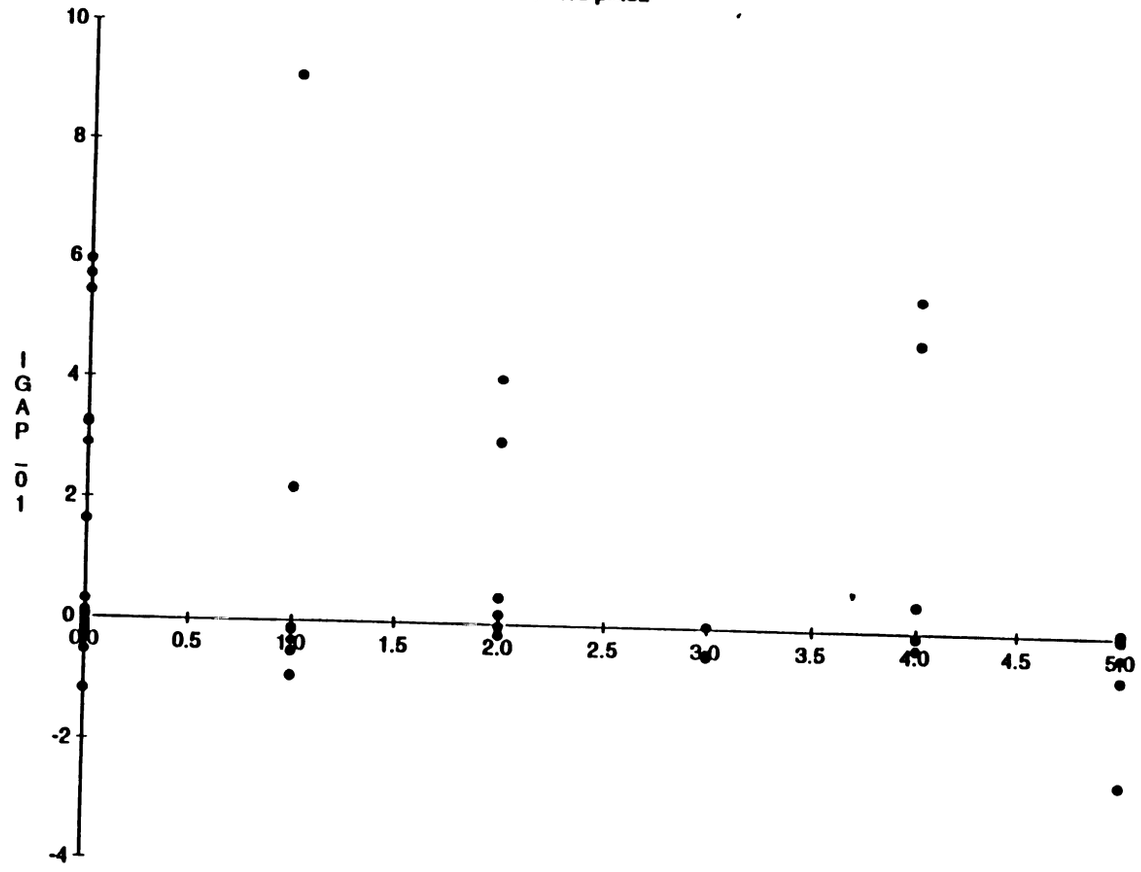




FIGURE 2.7 :IGAP_01 vs. SUMM_XNX

r=-.15 p=.32



T1 Test the inter-relationship among these measures.

a. Spearman Rank Correlation **TABLE 2.4**

Spearman Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 48

	MANIN_01	VERJR_01	MPA_T_01	TFH_01	LFH_01	SUMM_XNX
MANIN_01	1.00000	0.89174	0.82001	0.40020	0.39597	0.39949
	0.0	0.0001	0.0001	0.0048	0.0053	0.0049
VERJR_01	0.89174	1.00000	0.71718	0.39047	0.45909	0.46261
	0.0001	0.0	0.0001	0.0061	0.0010	0.0009
MPA_T_01	0.82001	0.71718	1.00000	0.34733	0.37106	0.39167
	0.0001	0.0001	0.0	0.0156	0.0094	0.0059
TFH_01	0.40020	0.39047	0.34733	1.00000	0.89391	0.13103
	0.0048	0.0061	0.0156	0.0	0.0001	0.3747
LFH_01	0.39597	0.45909	0.37106	0.89391	1.00000	0.19439
	0.0053	0.0010	0.0094	0.0001	0.0	0.1855
SUMM_XNX	0.39949	0.46261	0.39167	0.13103	0.19439	1.00000
	0.0049	0.0009	0.0059	0.3747	0.1855	0.0

T1 Revealed that VERJR_01 had the strongest correlation with the other variables and was used to run the T2 tests. **TABLE 2.4**

T2. The Spearman rank correlation revealed associations between two of the three angular measures of vertical jaw relationship and **summ_xnx.** VERJR_01 and **summ_xnx** has an r=.46 at a significance level of p=.0009 **FIG 2.8.** MANIN_01 and **summ_xnx** has an r=.40 at a significance level of p=.0049 **FIG 2.9.**

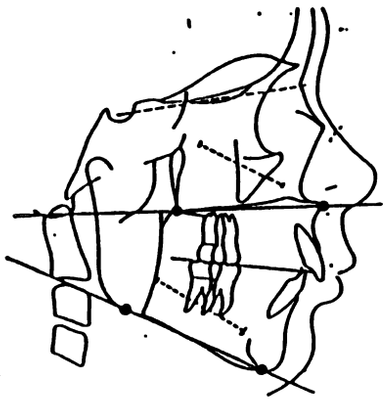
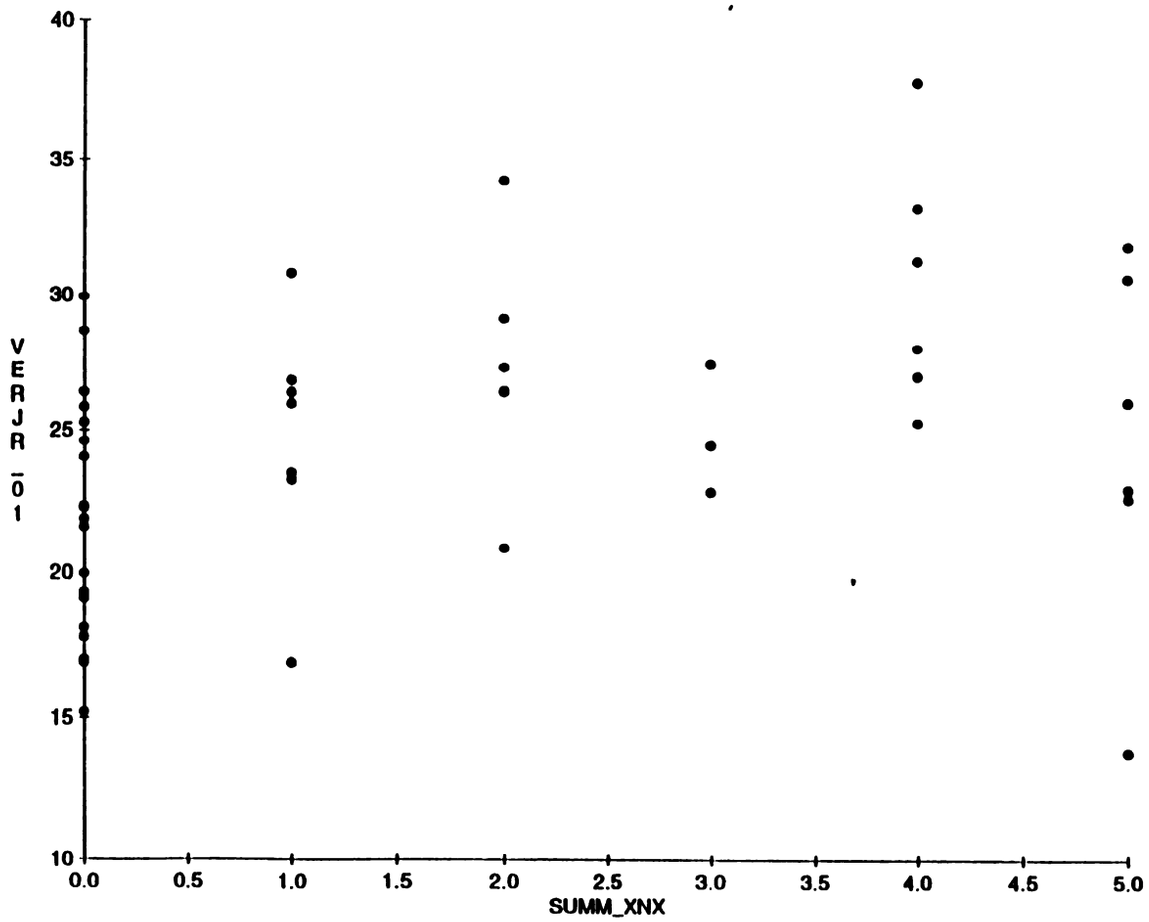


FIGURE 2.8 :VERJR_01 vs. SUMM_XNX



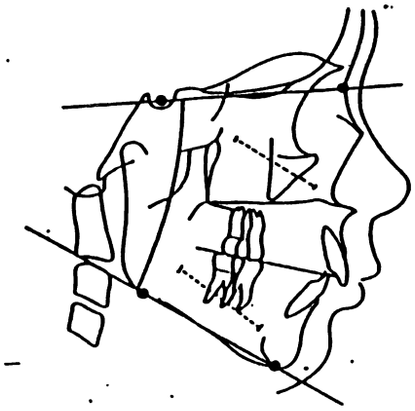
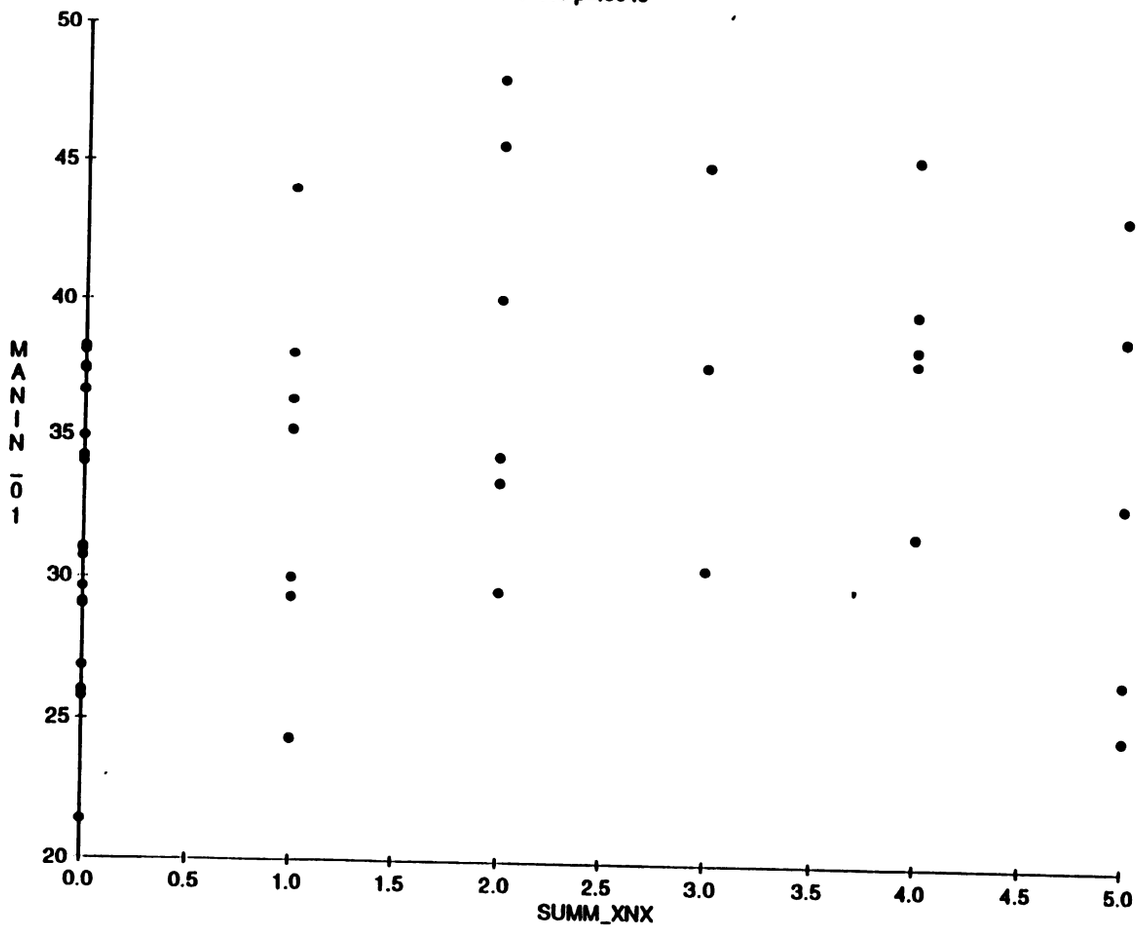


FIGURE 2.9 :MANIN_01 vs. SUMM_XNX

r=.40 p=.0049



Multiple Regression

The final statistical analysis was to analyze what percentage of the five clinicians extraction decision could be accounted for by the cephalometric variables that demonstrated significant associations with the propensity to extract **FIG 2.10**.

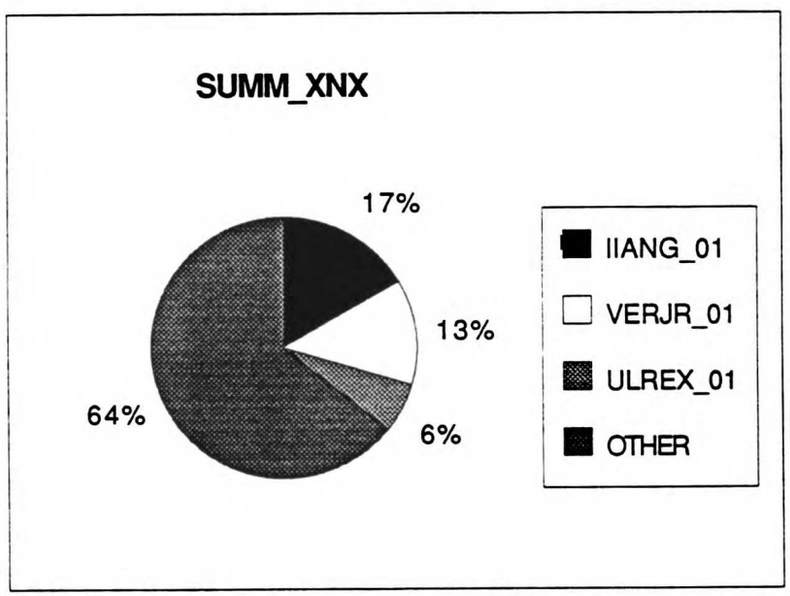
Variables that demonstrated significant associations with **summ_xnx**:

1.IIANG_01

2.VERJR_01

3.ULREX_01

summ_xnx	PART. R SQ.	R SQ.
IIANG_01	0.1673	0.1673
VERJR_01	0.13	0.2973
ULREX_01	0.063	0.3603
OTHER	0.6397	1



The multiple regression demonstrates that the three cephalometric variables can only account for 36% of the five clinicians extraction decision.[27]

Facial Appearance Decision Making

The subjective data for this part of the study was obtained by having the post-treatment facial photographs evaluated by five skilled clinicians. (please refer to material and methods) The cases were assigned a +1 if it was chosen as having the "best" facial appearance and a -1 if it was chosen to have "poor" facial appearance. Cases not assigned to either of the two categories were assigned the score of 0. The five scores assigned by the five evaluating clinicians were added to give each case a facial appearance score. The facial appearance scores for the 48 cases were ranked to give the continous facial appearance variable **pho_wted**. Organizing the subjective data in this manner allowed hypothesis driven tests for association between subjective assessments of facial appearance and objective cephalometric measures. **Table 3.0** summarizes the **pho_wted** facial appearance scores, and compares the facial appearance decision of the five clinicians with how the cases were treated represented by the variable **gibbsxnx**. The left hand column represents the facial appearance score -5 - +5 (**pho_wted**). The row at the top represents how the cases were treated, 0 = non-extraction and 1 = extraction (**gibbsxnx**).

TABLE 3.0

TABLE OF PHO_WTED BY GIBBSXNX

PHO_WTED Frequency	GIBBSXNX 0	1	Total
-5	2	3	5
-4	1	2	3
-3	1	0	1
-2	2	5	7
-1	2	1	3
0	3	5	8
1	3	1	4
2	3	2	5
3	3	2	5
4	4	3	7
Total	24	24	48

Specific facial appearance hypotheses

Rationale: The majority of cephalometric analyses used for diagnosing and treatment planning orthodontic patients include measures to examine facial esthetics. [7,8,19,22] This part of the study tries to identify the associations between some of these objective cephalometric measures used to evaluate facial esthetics and the subjective perceptions of facial appearance obtained from visual analysis of post-treatment photographs by clinical orthodontists.

The following outline represents the strategy taken to test the facial appearance hypotheses.

A. Select a limited number of cephalometric measures that represent the objective variable of interest.

T1. Test the inter-relationship among the cephalometric measures.

a. Spearman Rank Correlation

T2. Test the cephalometric measure that best represents the objective variable of interest (T1)with the continuous variable of facial appearance **pho_wted.**

a. Spearman Rank Correlation

Each of the following hypotheses follows this outline.

1. Cases with the "best" facial appearance will tend to have less nose prominence.

Cephalometric measures of nose prominence:

1. NLA_02
2. NFA_02
3. NPROX_02

T1 Test the inter-relationship among these measures.

a. Spearman Rank Correlation **TABLE 3.1.**

Spearman Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 48

	NLA_02	NFA_02	NPROX_02	PHO_WTED
NLA_02	1.00000 0.0	0.33728 0.0191	-0.23836 0.1028	-0.17286 0.2400
NFA_02	0.33728 0.0191	1.00000 0.0	-0.00033 0.9982	-0.42988 0.0023
NPROX_02	-0.23836 0.1028	-0.00033 0.9982	1.00000 0.0	-0.17482 0.2347
PHO_WTED	-0.17286 0.2400	-0.42988 0.0023	-0.17482 0.2347	1.00000 0.0

T1 Revealed that NFA_02 had the strongest correlation with the other variables and was used to run the T2 tests. **TABLE 3.1**

T2. The Spearman rank correlation demonstrated an association with r value -.43 between NFA_02 and **pho_wted** at a significance level of p=.0023 **FIG 3.1.**

2. Cases with the "best" facial appearance will tend to have less convex profiles.

Cephalometric measures of profile convexity:

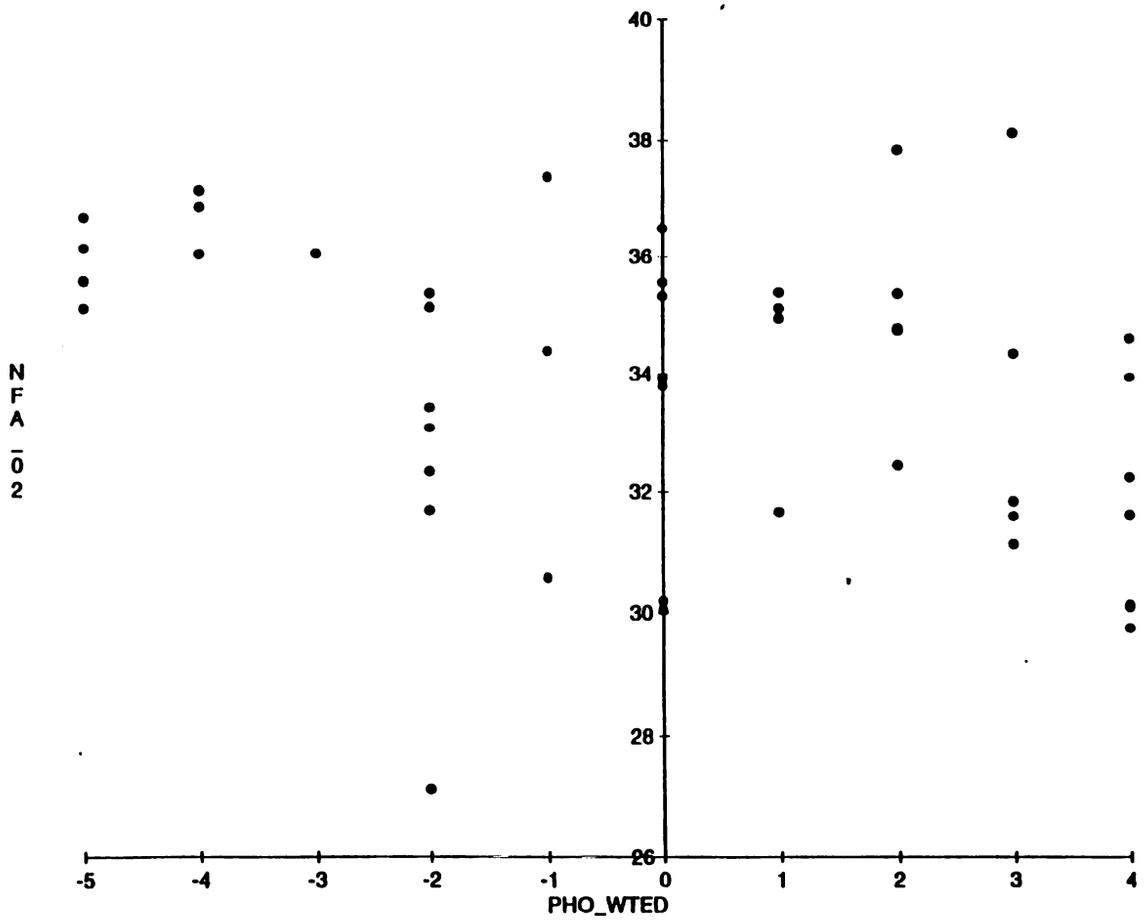
1. CONVX_02
2. STFC_02

T1 Test the inter-relationship among these measures.

FIGURE 3.1 :NFA_02 vs. PHO_WTED

r=-.43 p=.0023





a. Spearman Rank Correlation **TABLE 3.2**

Spearman Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 48

	CONVX_02	STFC_02	SNPG_02	FPA_D_02	PHO_WTED
CONVX_02	1.00000	0.49578	0.30701	0.28290	0.18968
	0.0	0.0003	0.0338	0.0514	0.1966
STFC_02	0.49578	1.00000	0.31937	0.29331	0.51251
	0.0003	0.0	0.0269	0.0430	0.0002
SNPG_02	0.30701	0.31937	1.00000	0.49160	0.23193
	0.0338	0.0269	0.0	0.0004	0.1127
FPA_D_02	0.28290	0.29331	0.49160	1.00000	0.15749
	0.0514	0.0430	0.0004	0.0	0.2850
PHO_WTED	0.18968	0.51251	0.23193	0.15749	1.00000
	0.1966	0.0002	0.1127	0.2850	0.0

T1 Revealed that CONVX_02 and STFC_02 had an r value of .50 at a significance level of p=.0003. Both variables were used to run the T2 tests. **TABLE 3.2**

T2. The Spearman rank correlation revealed an association with r value .51 between STFC_02 and **pho_wted** at a significance level of p=.0002 **FIG 3.2.** CONVX_02 failed to show a significant association with **pho_wted FIG 3.3.**

3. Cases with the "best" facial appearance will tend to have greater chin prominence.

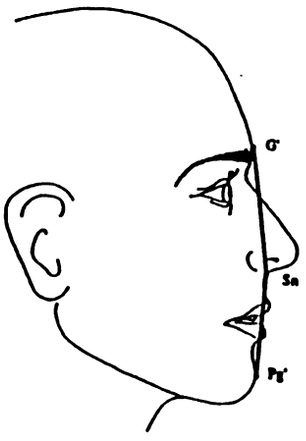
Cephalometric measures of chin prominence:

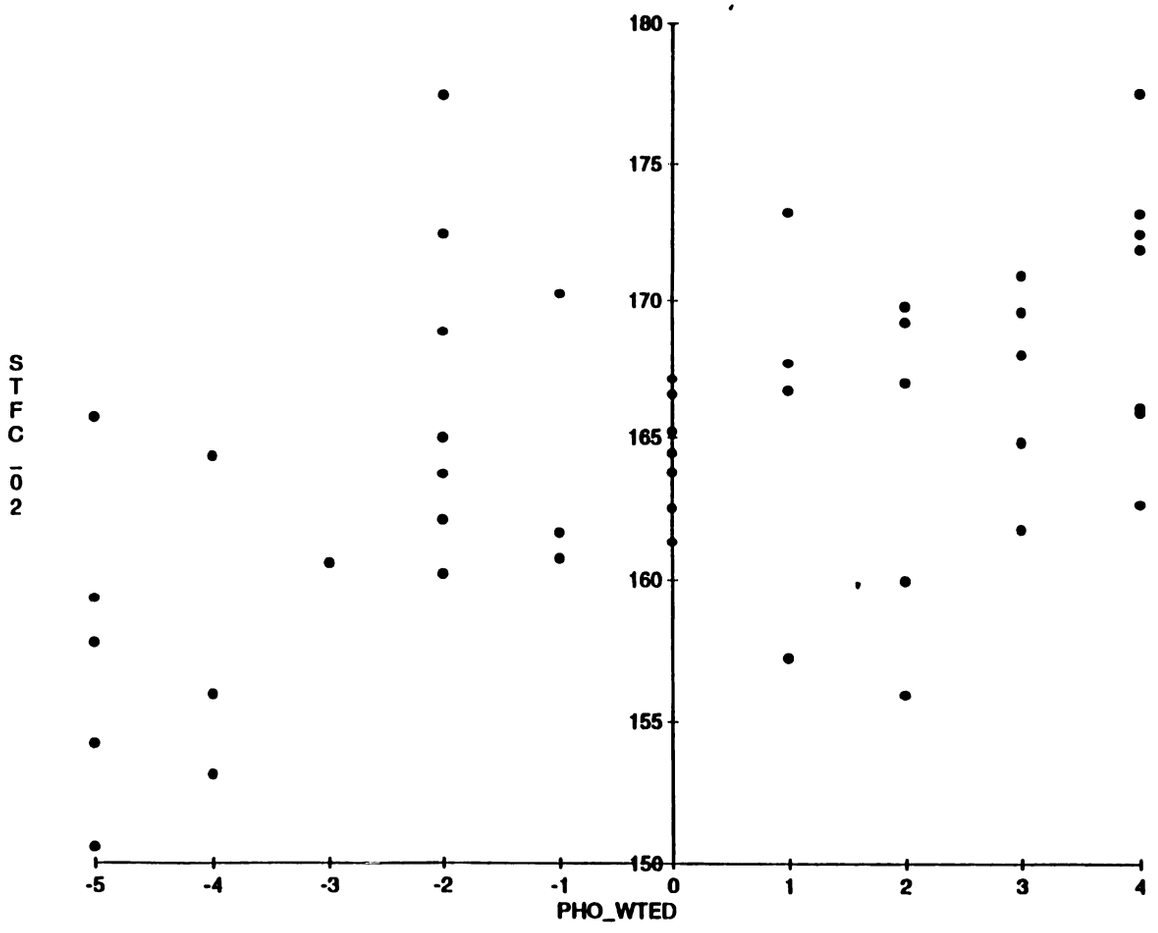
1. SNPG_02
2. FPA_D_02

T1 Test the inter-relationship among these measures.

a. Spearman Rank Correlation **TABLE 3.2**

FIGURE 3.2: STFC_02 vs. PHO_WTED





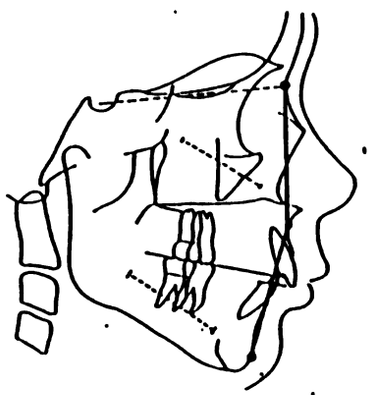
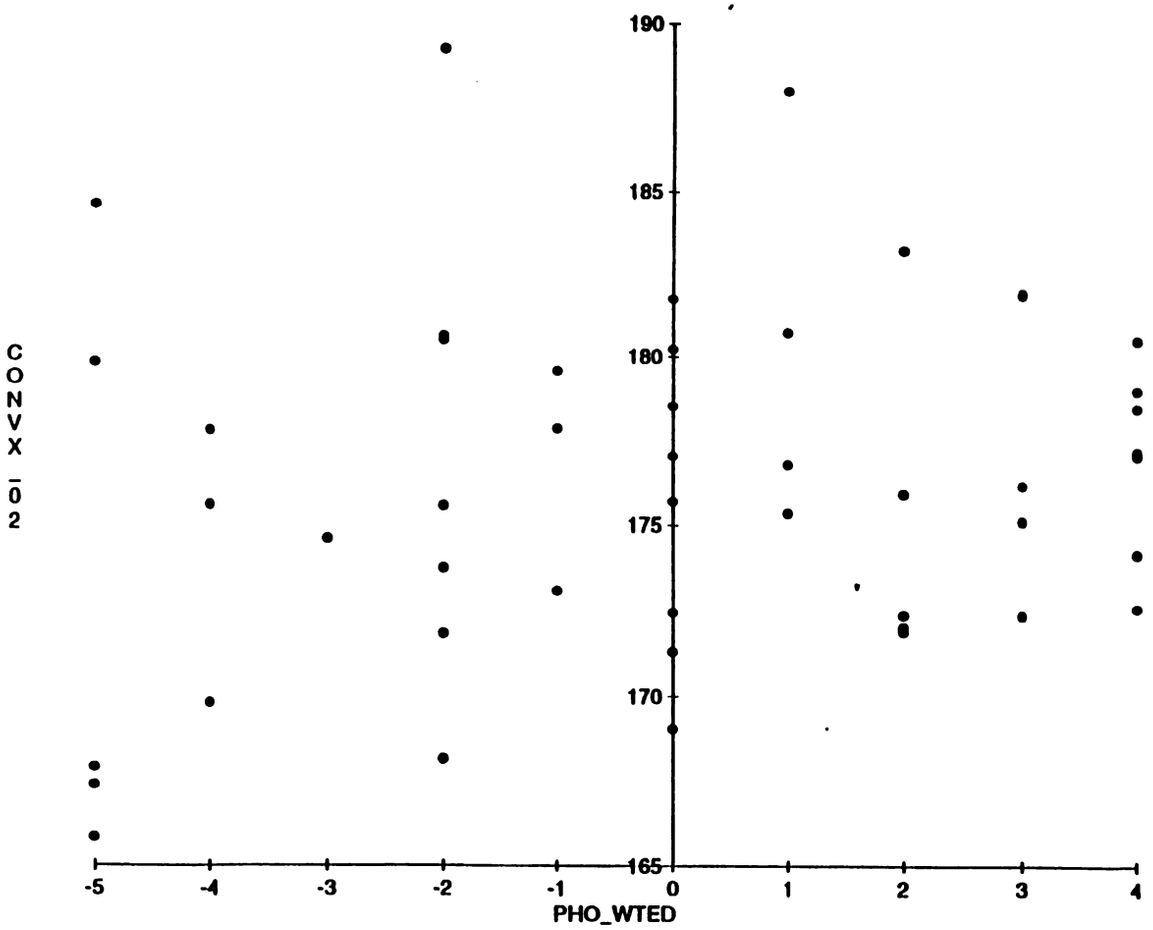


FIGURE 3.3 :CONVX_02 vs. PHO_WTED

r=.19 p=.20



T1 Revealed that SNPG_02 and FPA_D_02 had an r value of .49 at a significance level of p<.0004. Both variables were used to run the T2 tests. **TABLE 3.2**

T2 The Spearman rank correlation failed to demonstrate an association between the variables of chin prominence and facial appearance. **FIG 3.4** shows a plot of the SNPG_02 data.

4. Cases with the "best" facial appearance will tend to have less incisor protrusion.

Cephalometric measures of incisor protrusion:

1. UIPP_02
2. LIMPA_02
3. IIANG_02

T1 Test the inter-relationship among these measures.

a. Spearman Rank Correlation **TABLE 3.3**

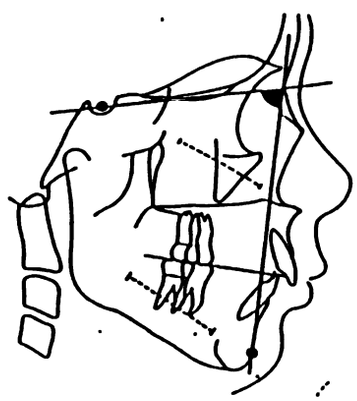
Spearman Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 48

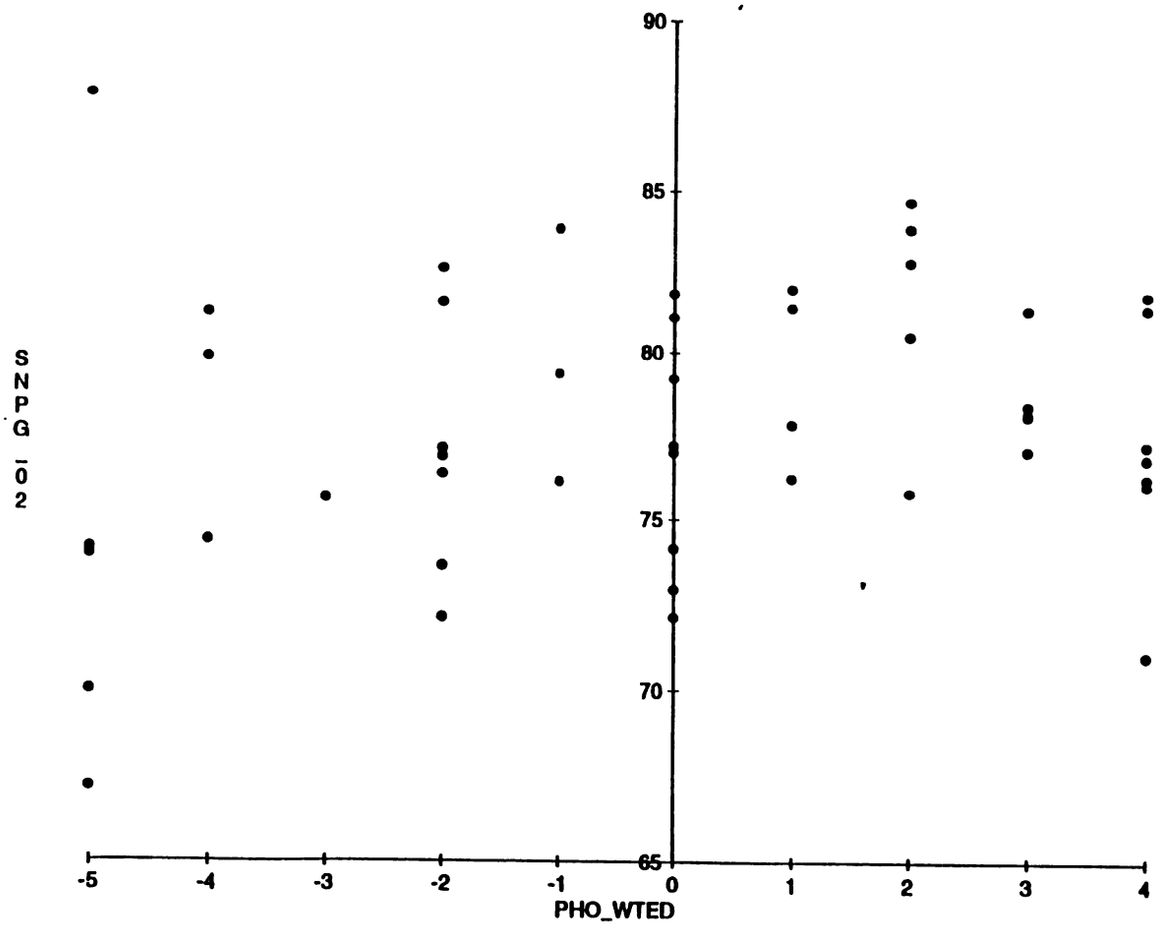
	UIPP_02	LIMPA_02	IIANG_02	PHO_WTED
UIPP_02	1.00000	0.00912	-0.67792	0.03702
	0.0	0.9510	0.0001	0.8027
LIMPA_02	0.00912	1.00000	-0.51400	0.05304
	0.9510	0.0	0.0002	0.7203
IIANG_02	-0.67792	-0.51400	1.00000	0.09138
	0.0001	0.0002	0.0	0.5368
PHO_WTED	0.03702	0.05304	0.09138	1.00000
	0.8027	0.7203	0.5368	0.0

T1 Revealed that IIANG_02 had the highest correlation with the other measures of incisor protrusion and was the variable used to run the T2 tests. **TABLE 3.3**

FIGURE 3.4: SNPG_02 vs. PHO_WTED

r=.23 p=.11





T2 The Spearman rank correlation failed to demonstrate an association between the variable of incisor protrusion and facial appearance. **FIG 3.5**

5. Cases with the "best" facial appearance will tend to have less lip fullness.

Cephalometric measures of nose prominence:

1. ULREX_02
2. LLREX_02

T1 Test the inter-relationship among these measures.

a. Spearman Rank Correlation **TABLE 3.4**

Spearman Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 48

	ULREX_02	LLREX_02	IGAP_02	PHO_WTED
ULREX_02	1.00000 0.0	0.78134 0.0001	0.12028 0.4154	0.23805 0.1032
LLREX_02	0.78134 0.0001	1.00000 0.0	-0.16787 0.2541	0.27775 0.0560
IGAP_02	0.12028 0.4154	-0.16787 0.2541	1.00000 0.0	0.22380 0.1262
PHO_WTED	0.23805 0.1032	0.27775 0.0560	0.22380 0.1262	1.00000 0.0

T1 Revealed that ULREX_02 and LLREX_02 had an r value of .28 at a significance level of p=.0001. Both variables were used to run the T2 tests. **TABLE 3.4**

T2. The Spearman rank correlation failed to demonstrate an association between the variables of lip fullness and facial appearance. **FIG 3.6**

6. Cases with the "best" facial appearance will tend to have less vertical skeletal relationships.

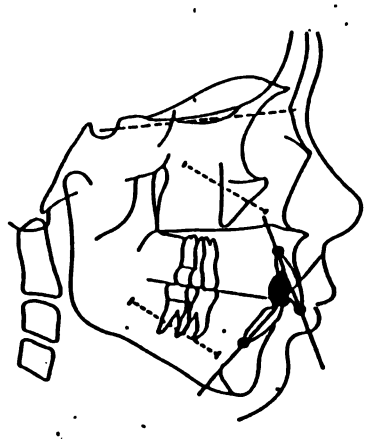


FIGURE 3.5 : IIANG_02 vs. PHO_WTED

r=.091 p=.54

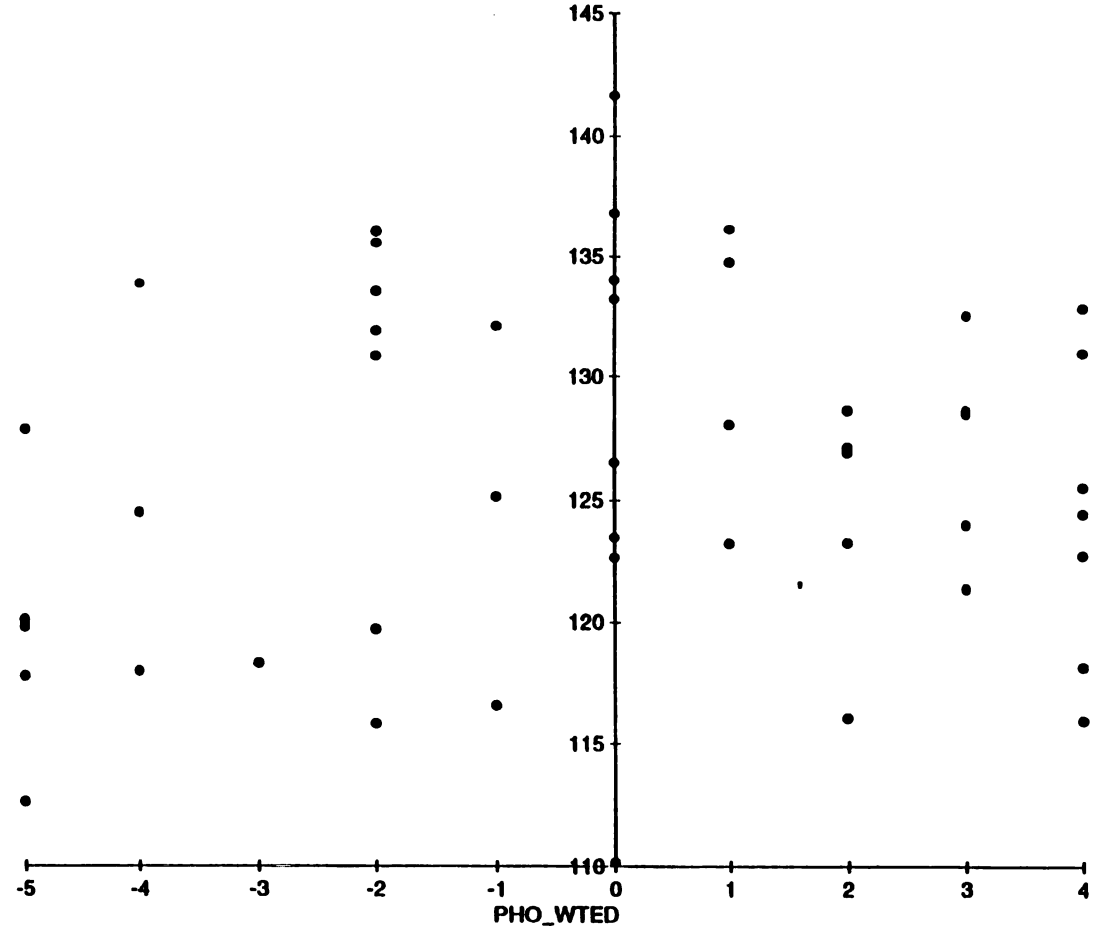
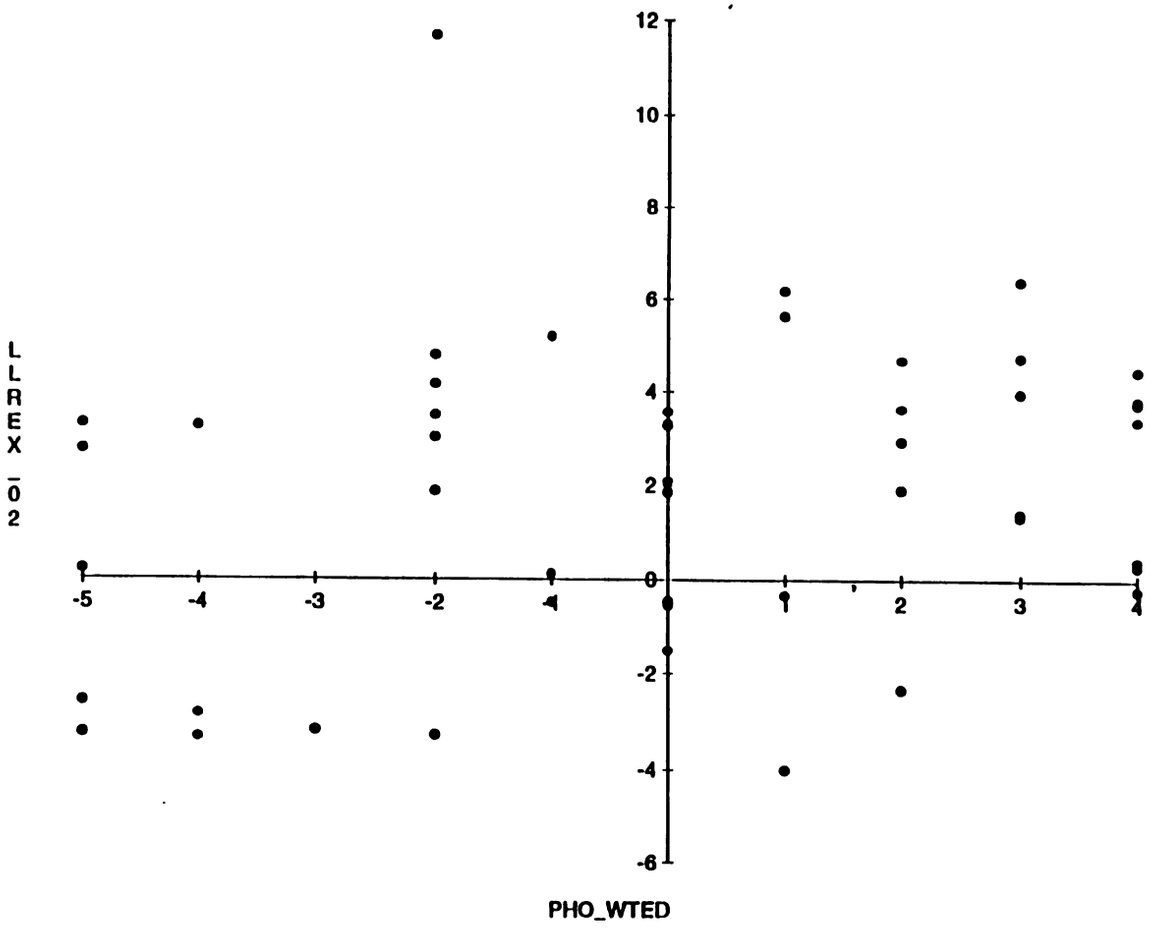


FIGURE 3.6 :LLREX_02 vs. PHO_WTED

r=.28 p=.056





Cephalometric measures of vertical skeletal relationship:

1. MANIN_02
2. VERJR_02
3. MPA_T_02
4. TFH_02
5. LFH_02

T1 Test the inter-relationship among these measures.

a. Spearman Rank Correlation **TABLE 3.5**

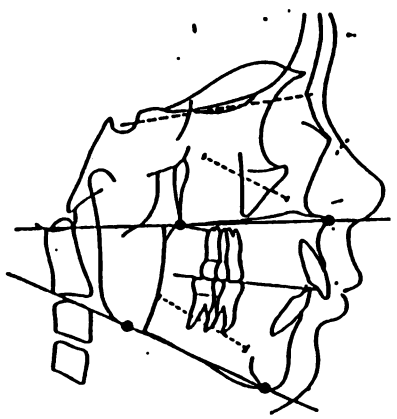
Spearman Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 48

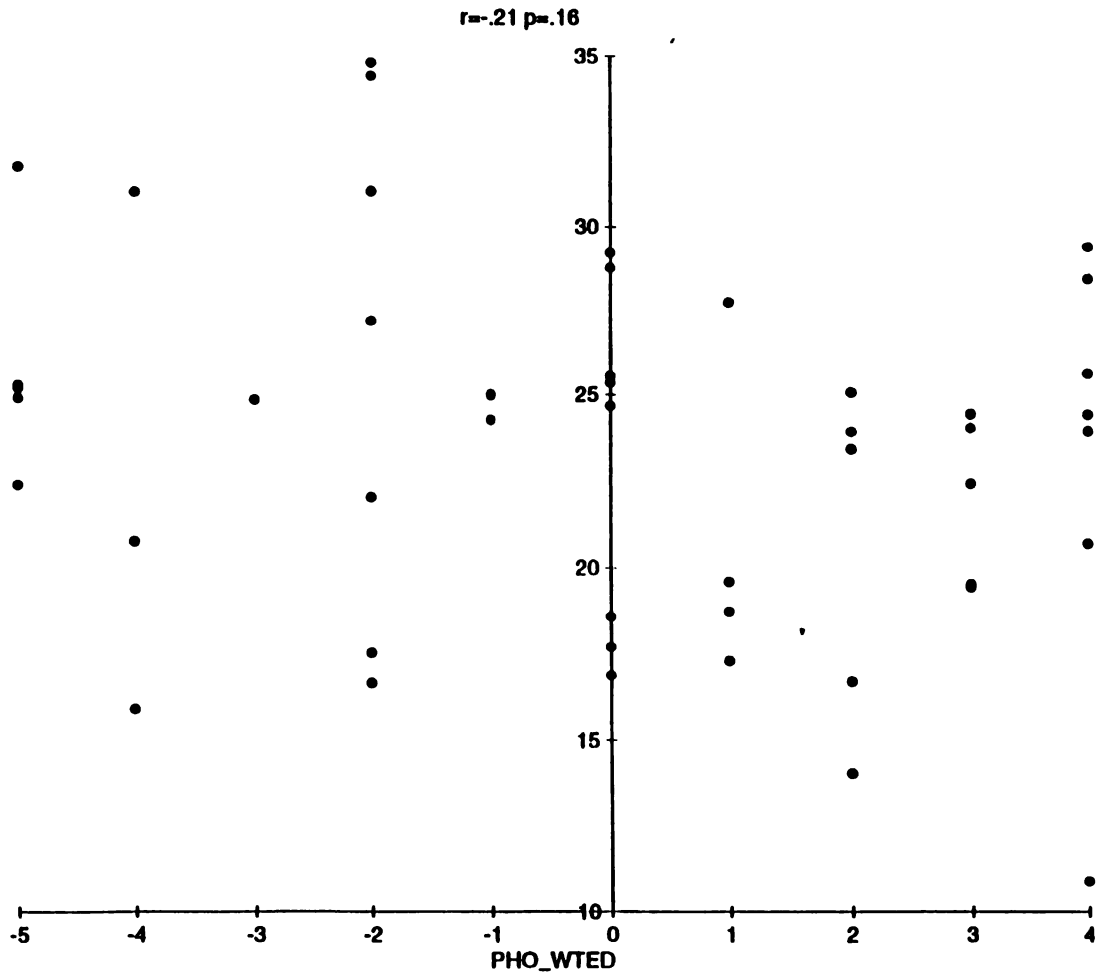
	MANIN_02	VERJR_02	MPA_T_02	TFH_02	LFH_02	PHO_WTED
MANIN_02	1.00000	0.89543	0.68626	0.26945	0.19150	-0.21301
	0.0	0.0001	0.0001	0.0640	0.1923	0.1461
VERJR_02	0.89543	1.00000	0.71317	0.23611	0.28621	-0.20513
	0.0001	0.0	0.0001	0.1062	0.0486	0.1619
MPA_T_02	0.68626	0.71317	1.00000	0.42282	0.41804	-0.23247
	0.0001	0.0001	0.0	0.0028	0.0031	0.1118
TFH_02	0.26945	0.23611	0.42282	1.00000	0.85150	-0.37421
	0.0640	0.1062	0.0028	0.0	0.0001	0.0088
LFH_02	0.19150	0.28621	0.41804	0.85150	1.00000	-0.30892
	0.1923	0.0486	0.0031	0.0001	0.0	0.0326
PHO_WTED	-0.21301	-0.20513	-0.23247	-0.37421	-0.30892	1.00000
	0.1461	0.1619	0.1118	0.0088	0.0326	0.0

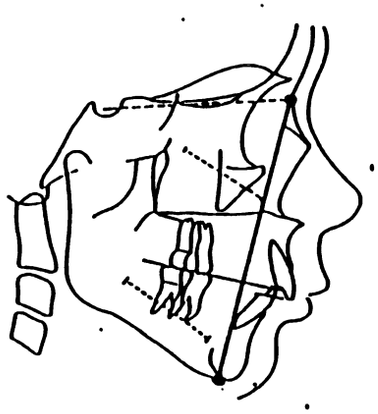
T1 Revealed that VERJR_02 had the highest correlation with the other measures of vertical jaw relationship and was the variable used to run the T2 tests.

T2. The Spearman rank correlation failed to demonstrate an association between the variable VERJR_02 and facial appearance **FIG 3.7**. However, Both TFH_02 (r=-.37 p=.009) **FIG 3.8** and LFH_02 (r=-.31 p=.03) **FIG 3.9** showed significant association with **pho_wted.**

FIGURE 3.7: VERJR_02 vs. PHO_WTED



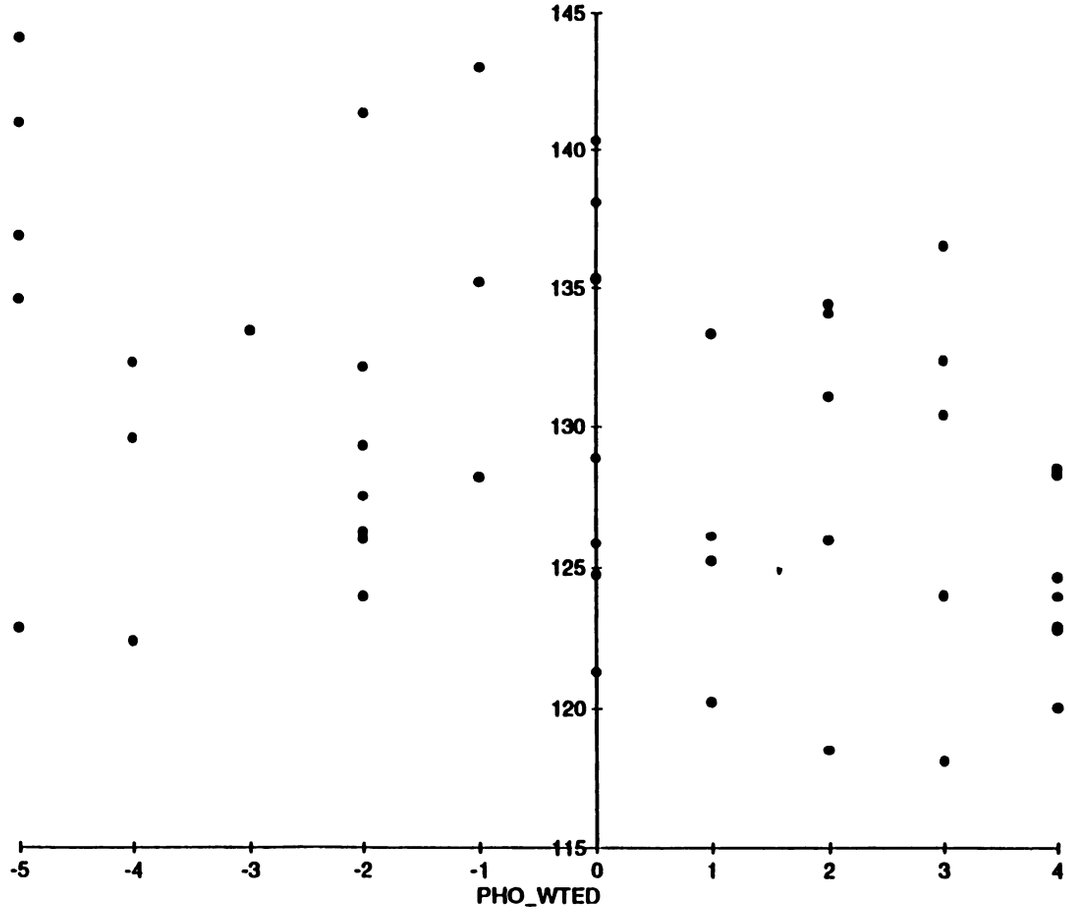




TFH_02

FIGURE 3.8 :TFH_02 vs. PHO_WTED

r=-.037 p=.0088



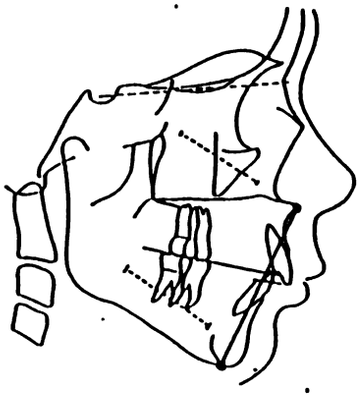
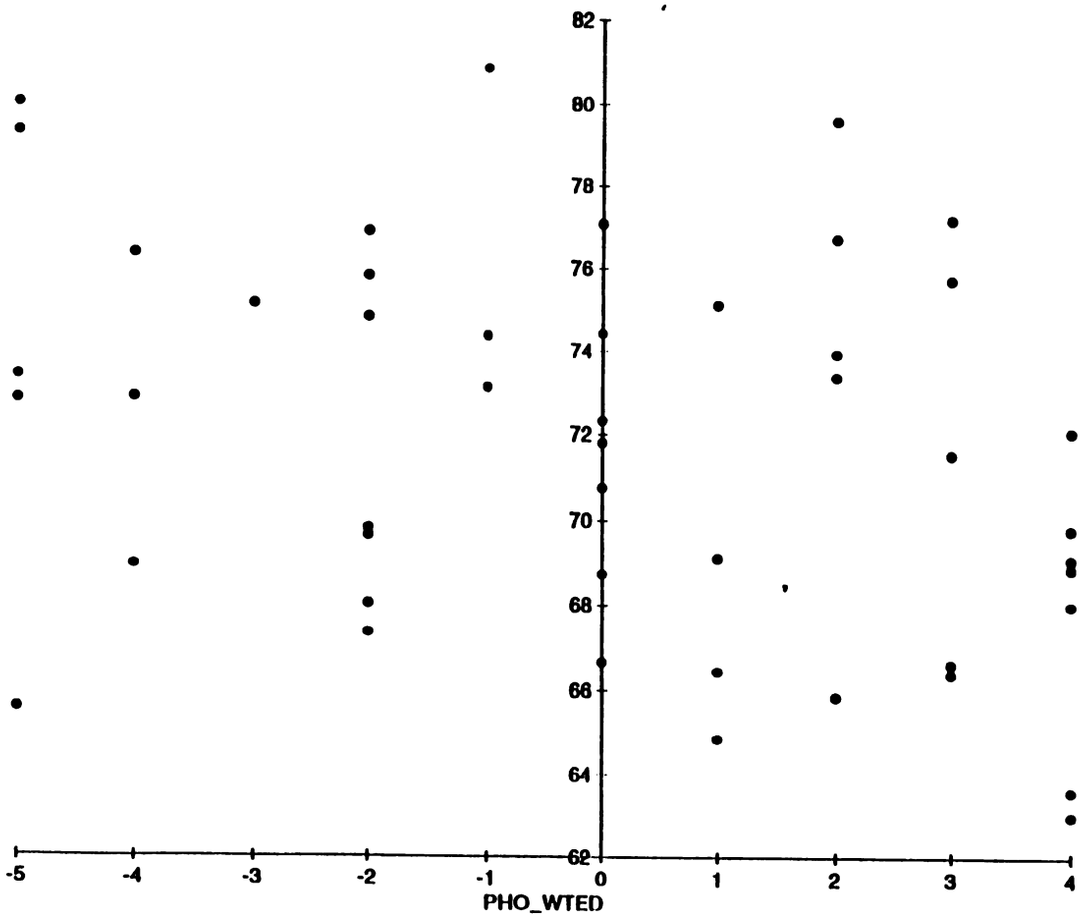


FIGURE 3.9 :LFH_02 vs. PHO_WTED

r=-.31 p=.033



Multiple Regression

The final statistical analysis was to analyze what percentage of the five clinicians facial appearance decision could be accounted for by the cephalometric variables that demonstrated significant associations with facial appearance when taken together.

FIGURE 3.10

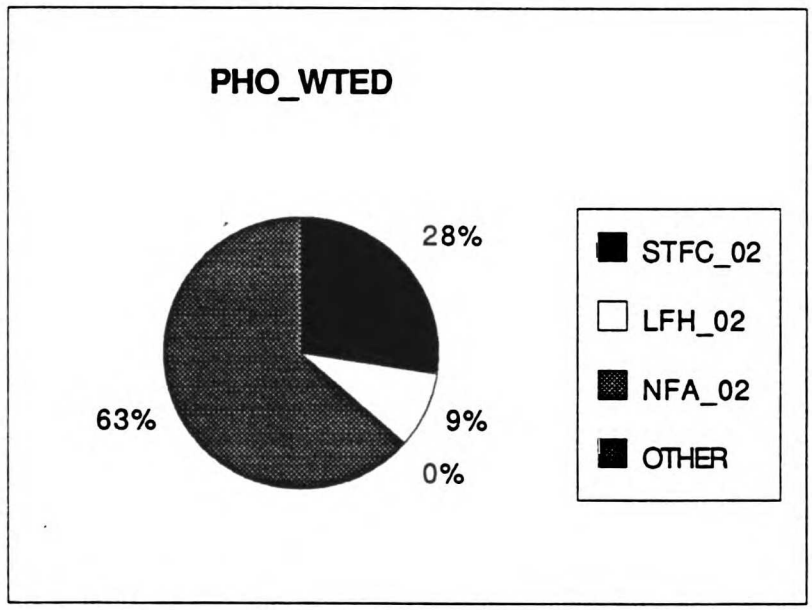
Variables that demonstrated significant associations with **pho_wted**:

1.STFC_02

2.LFH_O2

3.NFA_02

pho_wted	PART. R SQ.	R SQ
STFC_02	0.2775	0.2775
LFH_02	0.0864	0.3639
NFA_02	0	
OTHER	0.6361	



The multiple regression demonstrates that the two cephalometric variables can only account for 37% of the five clinicians facial appearance decision.[27]

Orthodontic Outcome Decision Making

The subjective data for this part of the study was obtained by having the complete pre- and post-treatment orthodontic records of each case evaluated by five skilled clinicians. (please refer to material and methods) The case was assigned a +1 if it was evaluated as having the "most" improvement and a -1 if it was evaluated as having the "least" improvement. Cases not assigned to either of the two categories were assigned the score of 0. The five scores assigned by the evaluating clinicians were added together to give each case an outcome score. The outcome scores for the 48 cases were ranked to give a continous outcome variable **out_wted** for hypothesis testing. Organizing the subjective data in this manner allowed hypotheses driven tests of association between the subjective assessment of treatment outcome and the objective cephalometric measures. **Table 4.0** summarizes the **out_wted** facial appearance scores, and compares the facial appearance decision of the five clinicians with how the cases were treated represented by the variable **gibbsxnx**. The left hand column represents the treatment outcome score -5 - +5 (**out_wted**). The row at the top represents how the cases were treated, 0 = non-extraction and 1 = extraction (**gibbsxnx**).

Table 4.0

TABLE OF OUT_WTED BY GIBBSXNX

OUT_WTED	GIBBSXNX		
Frequency	0	1	Total
-5	2	0	2
-4	2	0	2
-3	3	0	3
-2	3	2	5
-1	2	4	6
0	5	8	13
1	2	3	5
2	4	1	5
3	0	1	1
4	1	4	5
5	0	1	1
Total	24	24	48

The following outline represents the strategy taken to test the outcome hypotheses.

A. Select a limited number of cephalometric measures to represent the objective variable being tested.

T1. Test the inter-relationship among the cephalometric measures.

a. Spearman Rank Correlation

T2. Test the cephalometric measure that best represents the objective variable of interest with the continuous variable of treatment outcome **out_wted**.

a. Spearman Rank Correlation

Each of the following hypotheses follows this outline.

Specific outcome hypotheses

Rationale:. Orthodontic treatment mechanics can modify growth and development of the facial skeleton. The following hypotheses attempts to identify what type of growth and treatment changes are associated with the subjective evaluation of improvement from orthodontic treatment.

1. Cases with the "most" improvement from orthodontic treatment will tend to have less of an increase in nose prominence.

Cephalometric measures of change in nose prominence:

1. NLA_12
2. NFA_12
3. NPROX_12

T1 Test the inter-relationship among these measures.

a. Spearman Rank Correlation **TABLE 4.1**

Spearman Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 48

	NFA_12	NLA_12	NPROX_12	OUT_WTED
NFA_12	1.00000 0.0	0.15643 0.2884	0.08413 0.5697	-0.17184 0.2429
NLA_12	0.15643 0.2884	1.00000 0.0	-0.08532 0.5642	-0.23785 0.1036
NPROX_12	0.08413 0.5697	-0.08532 0.5642	1.00000 0.0	0.21485 0.1425
OUT_WTED	-0.17184 0.2429	-0.23785 0.1036	0.21485 0.1425	1.00000 0.0

T1 None of the measures of nose prominence significantly correlated with each other. Since the variable NFA_02 was used in evaluating facial appearance, it was decided to use NFA_12 for the T2 tests. **TABLE 4.1**

T2 The Spearman rank correlation failed to demonstrate a significant association between NFA_12 and **out_wted. FIG 4.1**

2. Cases with the "most" improvement from orthodontic treatment will tend to have a decrease in profile convexity.

Cephalometric measures of change in profile convexity:

1. CONVX_12
2. STFC_12

T1 Test the inter-relationship among these measures.

a. Spearman Rank Correlation **TABLE 4.2**

Spearman Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 48

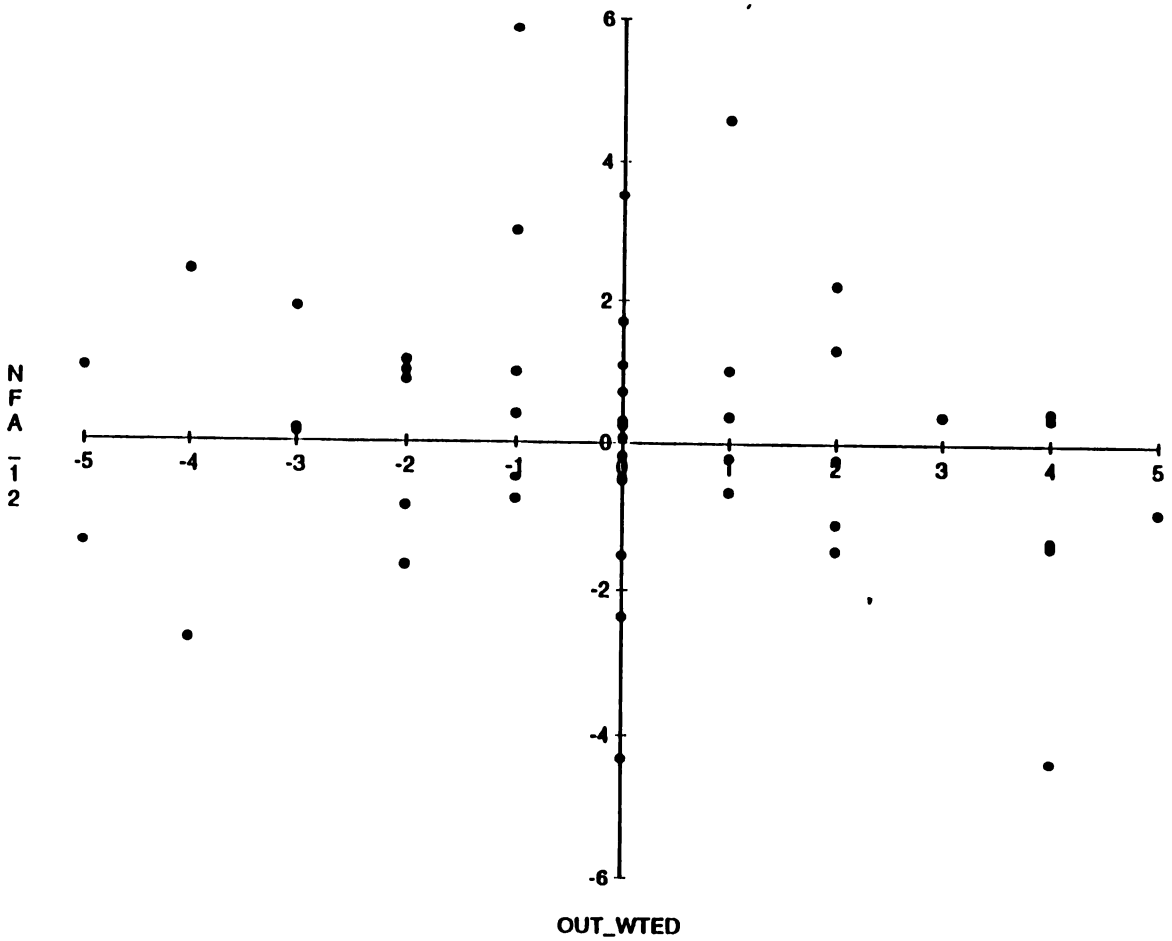
	CONVX_12	STFC_12	SNPG_12	FPA_D_12	OUT_WTED
CONVX_12	1.00000 0.0	0.38609 0.0067	0.58680 0.0001	0.42820 0.0024	0.55053 0.0001
STFC_12	0.38609 0.0067	1.00000 0.0	0.25457 0.0808	0.21067 0.1506	0.31480 0.0293
SNPG_12	0.58680 0.0001	0.25457 0.0808	1.00000 0.0	0.65567 0.0001	0.25796 0.0767
FPA_D_12	0.42820 0.0024	0.21067 0.1506	0.65567 0.0001	1.00000 0.0	0.15155 0.3038
OUT_WTED	0.55053 0.0001	0.31480 0.0293	0.25796 0.0767	0.15155 0.3038	1.00000 0.0

T1 Revealed that CONVX_12 and STFC_12 had an r value of .39 at a significance level of p=.006. Both variables were used to run the T2 tests. **TABLE 4.2**



FIGURE 4.1 :NFA_12 vs. OUT_WED

r=-.17 p=.24



T2 The Spearman rank correlation revealed a significant association for both CONVX_12 and **out_wted** (r=.55 p=.0001) **FIG 4.2**, and STFC_12 and **out_wted** (r=.31 p<.029) **FIG 4.3**.

3. Cases with the "most" improvement from orthodontic treatment will tend to have more of an increase in chin prominence.

Cephalometric measures of changes in chin prominence:

1. SNPG_12
2. FPA_D_12

T1 Test the inter-relationship among these measures.

a. Spearman Rank Correlation **TABLE 4.2**

T1 Revealed that SNPG_12 and FPA_D_12 had an r value of .66 at a significance level of p=.0001. Both variables were used to run the T2 tests.

T2. The Spearman rank correlation failed to demonstrate a significant association between the two variables of chin prominence and **out_wted. FIG 4.4** displays a plot of SNPG_12 and **out_wted.**

4. Cases with the "most" improvement from orthodontic treatment will tend to have a decrease in vertical skeletal relationships.

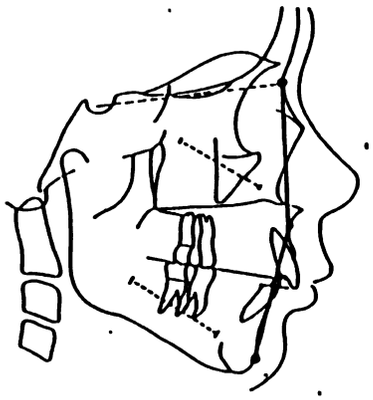
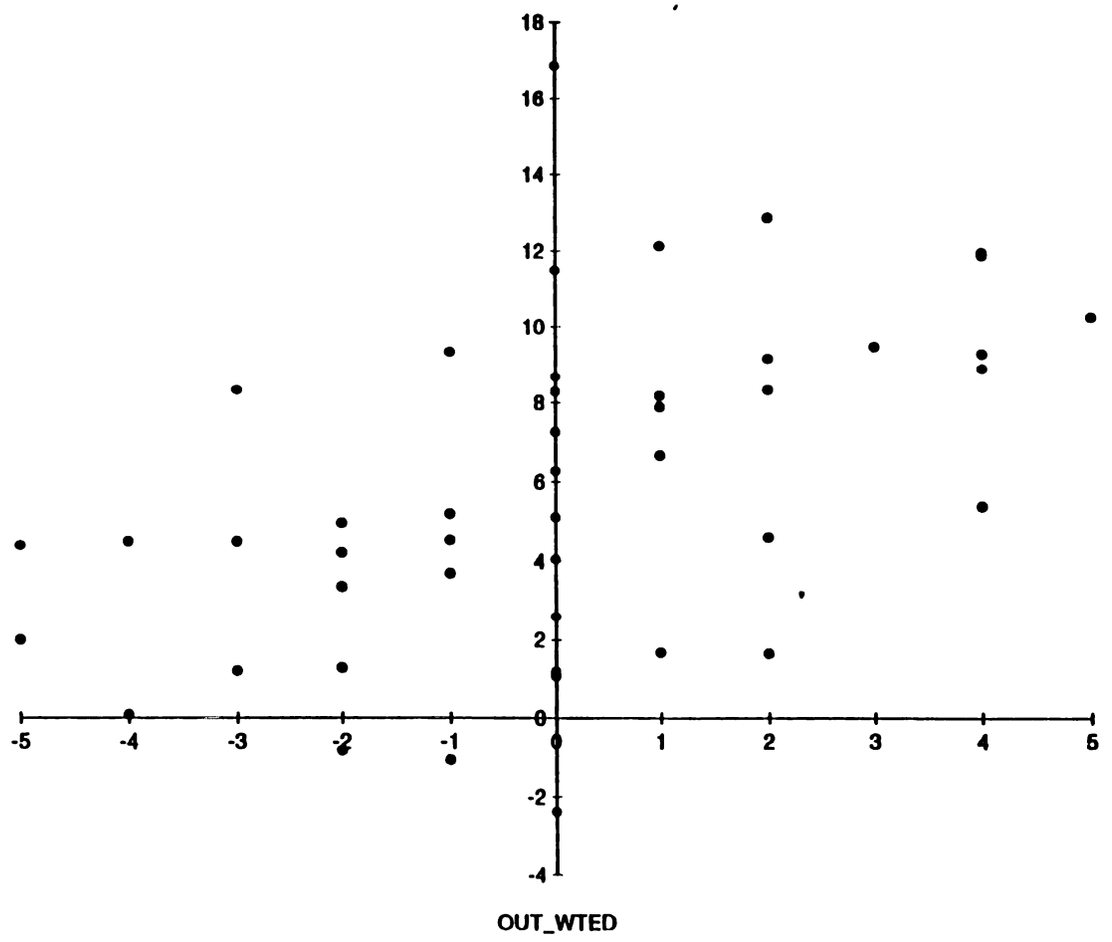


FIGURE 4.2 :CONVX_12 vs. OUT_WTED

r=.55 p=.0001



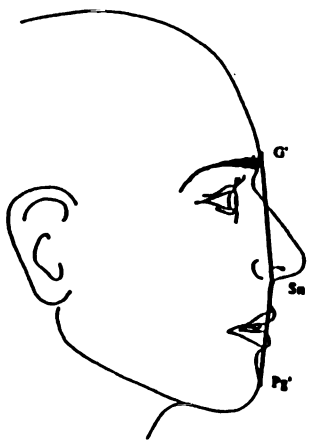
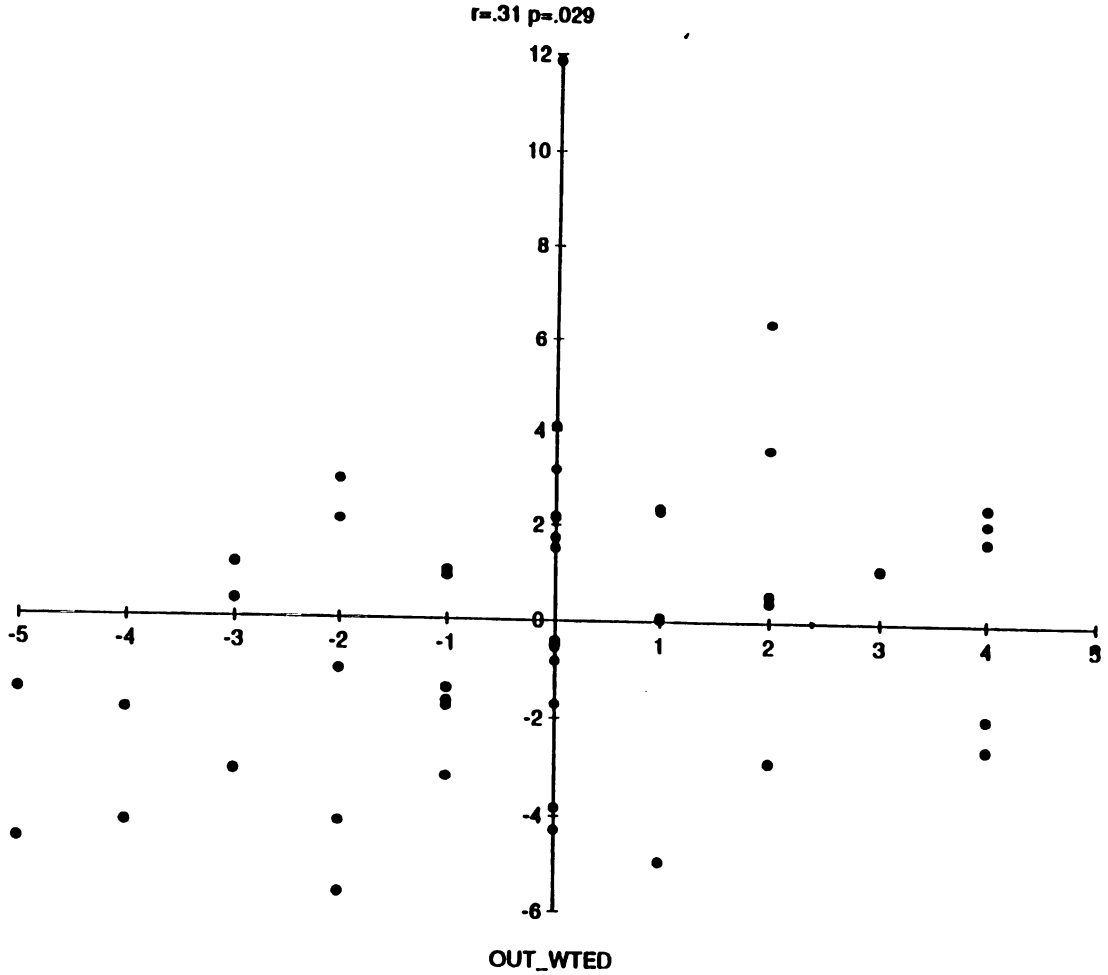


FIGURE 4.3 :STFC_12 vs. OUT_WTED



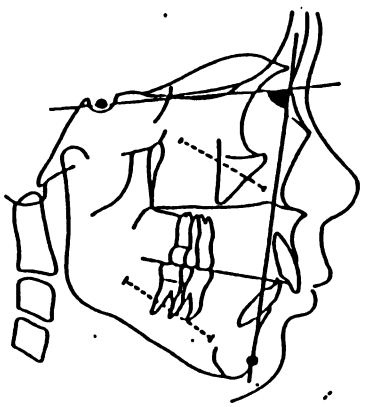
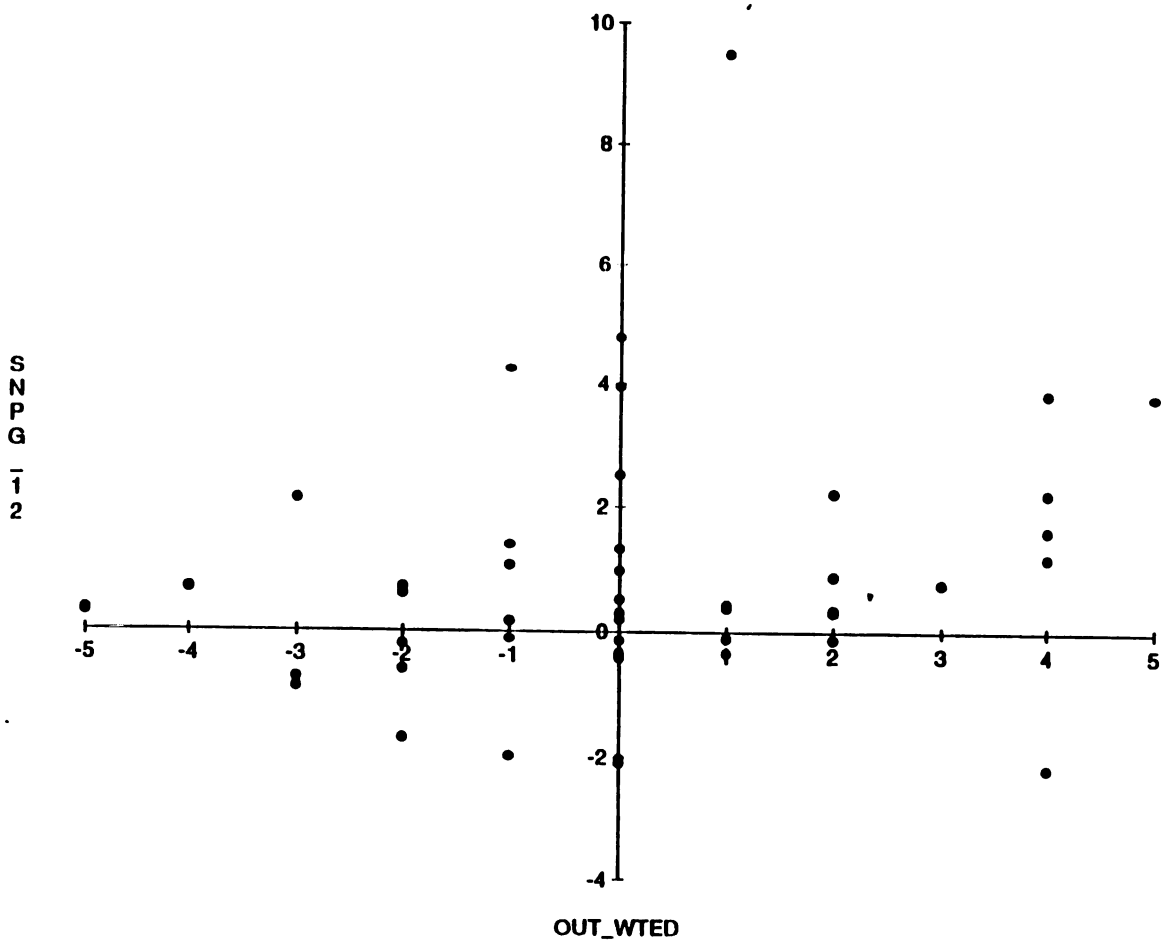


FIGURE 4.4:SNPG_12 vs. OUT_WTED

r=.26 p=.077



Cephalometric measures of change in vertical jaw relationship:

1. MANIN_12
2. VERJR_12
3. MPA_T_12
4. TFH_12
5. LFH_12

T1 Test the inter-relationship among these measures.

a. Spearman Rank Correlation **TABLE 4.3**

Spearman Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 48

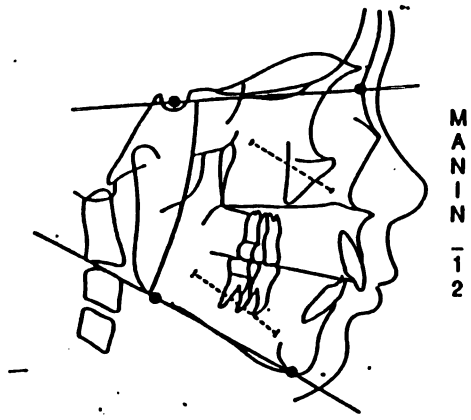
	MANIN_12	VERJR_12	MPA_T_12	TFH_12	LFH_12	OUT_WTED
MANIN_12	1.00000	0.67367	0.36781	0.04828	0.28302	-0.49475
	0.0	0.0001	0.0101	0.7445	0.0513	0.0004
VERJR_12	0.67367	1.00000	0.05412	0.15111	0.48263	-0.30902
	0.0001	0.0	0.7149	0.3053	0.0005	0.0326
MPA_T_12	0.36781	0.05412	1.00000	0.10503	0.04532	-0.23516
	0.0101	0.7149	0.0	0.4774	0.7597	0.1076
TFH_12	0.04828	0.15111	0.10503	1.00000	0.84088	-0.11081
	0.7445	0.3053	0.4774	0.0	0.0001	0.4534
LFH_12	0.28302	0.48263	0.04532	0.84088	1.00000	-0.28686
	0.0513	0.0005	0.7597	0.0001	0.0	0.0481
OUT_WTED	-0.49475	-0.30902	-0.23516	-0.11081	-0.28686	1.00000
	0.0004	0.0326	0.1076	0.4534	0.0481	0.0

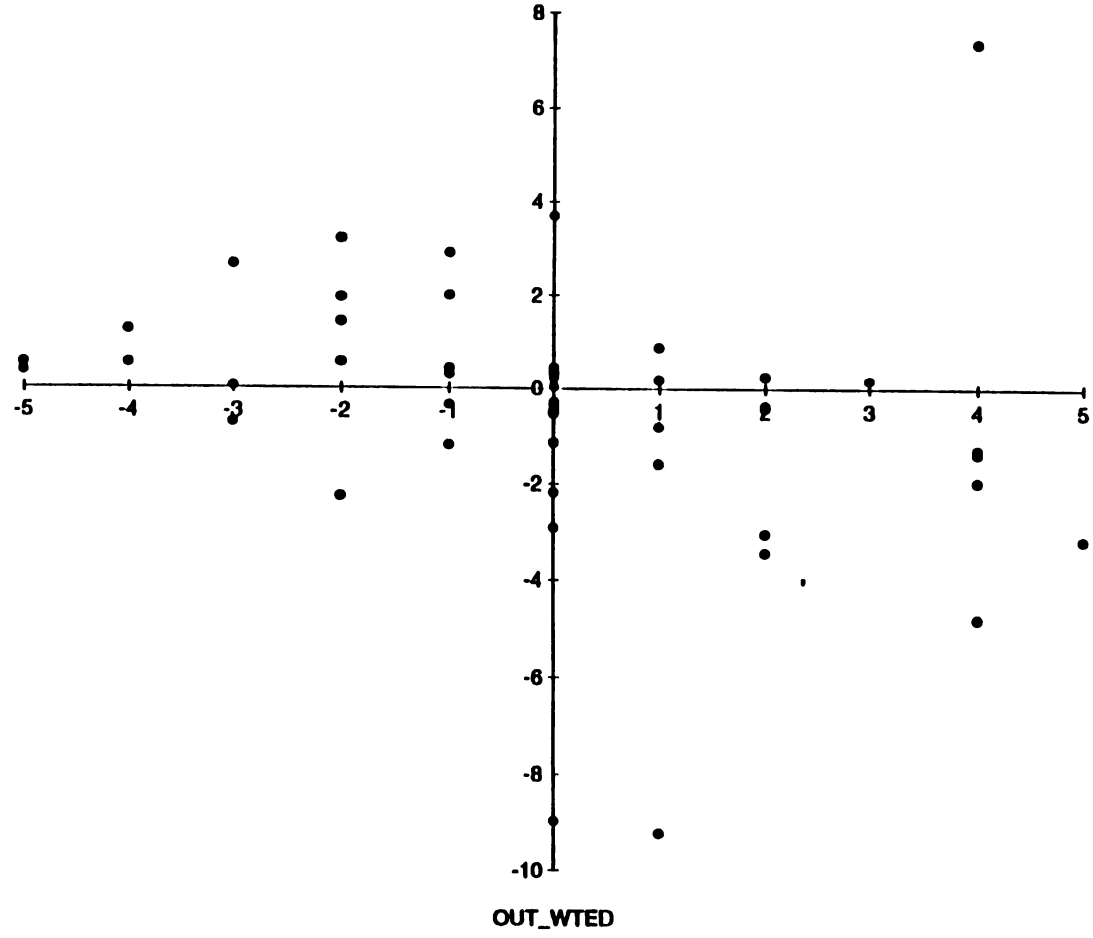
T1 MANIN_12 shows a significant association with the majority of the other measures and was used for the T2 tests. **TABLE 4.3**

T2. The Spearman rank correlation revealed significant associations between **out_wted** and MANIN_12 r=.49 p=.0004 **FIG 4.5**, VERJR_12 r=-.31 p=.033 **FIG 4.6**, and LFH_12 r=-.29 p=.048.

FIGURE 4.5:MANIN_12 vs. OUT_WTED

r=-.49 p=.0004





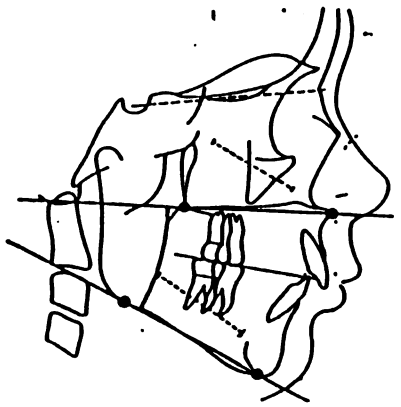
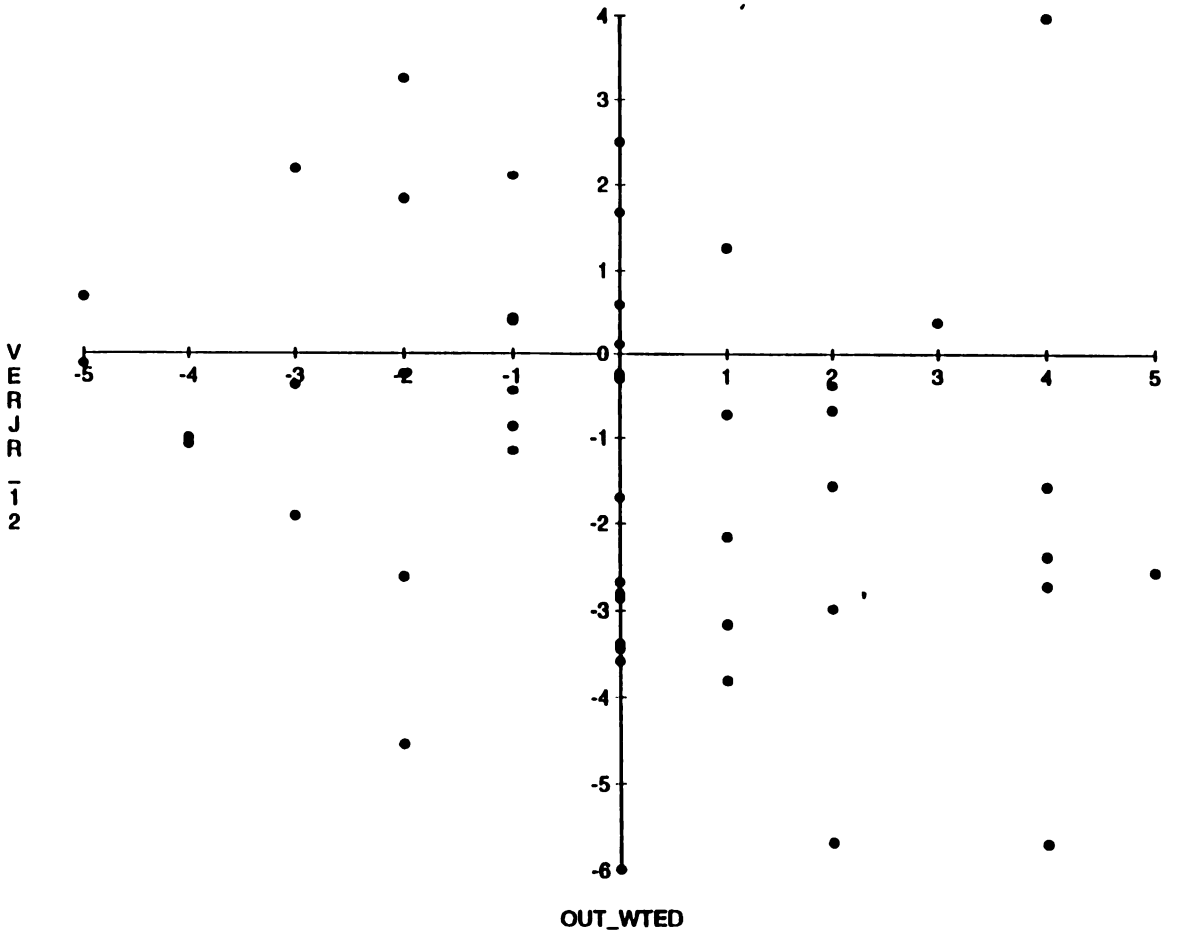


FIGURE 4.6 :VERJR_12 vs. OUT_WTED

r=-.31 p=.033



5. Cases with the "most" improvement from orthodontic treatment will tend to have the greatest reduction of incisor protrusion.

Cephalometric measures of changes in incisor protrusion:

1. UIPP_12
2. LIMPA_D_12
3. IIANG_12

T1 Test the inter-relationship among these measures.

a. Spearman Rank Correlation **TABLE 4.4**

Spearman Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 48

	UIPP_12	LIMPA_12	IIANG_12	OUT_WTED
UIPP_12	1.00000 0.0	0.15643 0.2883	-0.83836 0.0001	0.10160 0.4920
LIMPA_12	0.15643 0.2883	1.00000 0.0	-0.56755 0.0001	0.16923 0.2502
IIANG_12	-0.83836 0.0001	-0.56755 0.0001	1.00000 0.0	-0.12481 0.3980
OUT_WTED	0.10160 0.4920	0.16923 0.2502	-0.12481 0.3980	1.00000 0.0

T1 revealed that IIANG_12 had the highest correlation with the other measures of incisor protrusion and was the variable used to run the T2 tests. **TABLE 4.4**

T2. The Spearman rank correlation failed to demonstrate a significant association between the variable IIANG_12 and **out_wted. FIG 4.7**

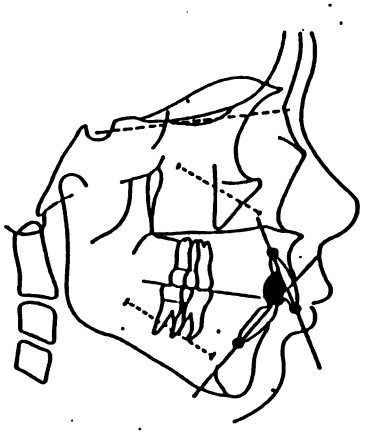
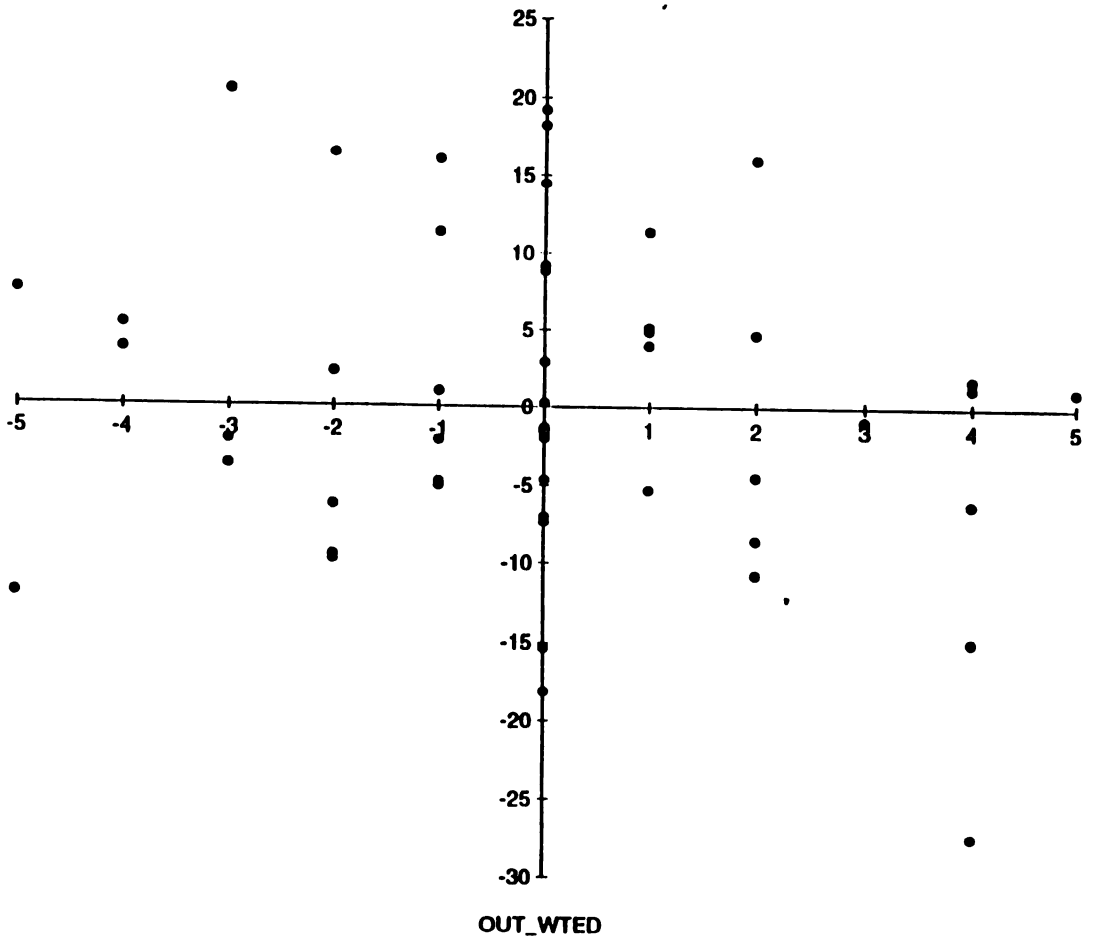


FIGURE 4.7 :IIANG_12 vs. OUT_WTED

r=-.12 p=.40



Multiple Regression

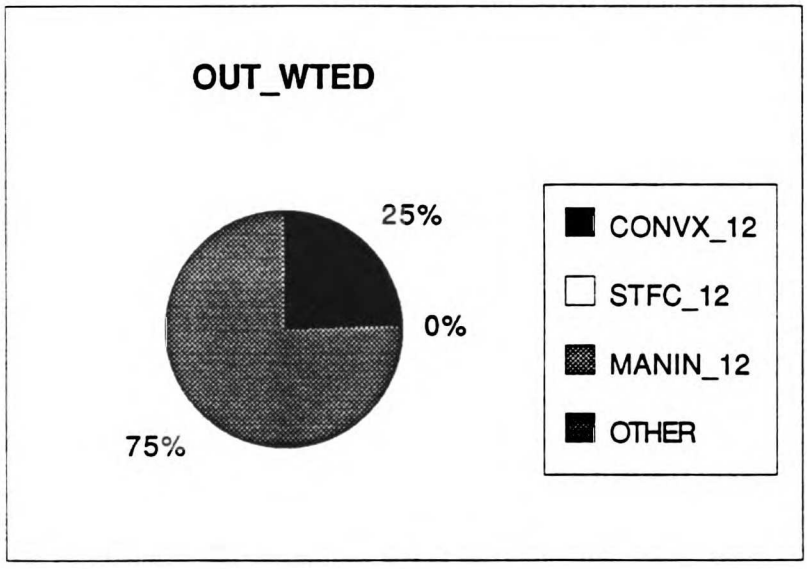
The final statistical analysis was to analyze what percentage of the five clinician's outcome decision could be accounted for by the cephalometric variables that demonstrated significant associations with treatment outcome when taken together.

FIGURE 4.8

Variables that demonstrated significant associations with **out_wted**:

1. CONVX_12
2. STFC_12
2. MANIN_12

out_wted	PART. R SQ.	R SQ.
CONVX_12	0.2454	0.2454
STFC_12	0	
MANIN_12	0	
OTHER	0.7546	



The multiple regression demonstrates that the three cephalometric variables can only account for 25% of the five clinician's outcome decision.[27]

Occlusion Decision Making

The subjective data for this part of the study was obtained by having the post-treatment study casts of each case evaluated by five skilled clinicians. (please refer to material and methods) The case was assigned a +1 if it was evaluated as having the "best" occlusion and a -1 if it were evaluated as having the "poorest" occlusion. Cases not assigned to either of the two categories were assigned the score of 0. The five scores assigned by the evaluating clinicians were added to give each case an occlusion score. The occlusion scores for the 48 cases were ranked to give the subjective occlusion variable **sc_wted** for hypotheses testing. Organizing the subjective data in this manner allowed hypotheses driven tests of association between the subjective assessment of occlusion and the objective cephalometric measures. **Table 5.0** summarizes the **sc_wted** occlusal scores, and compares the occlusion decision of the five clinicians with how the cases were treated represented by the variable **gibbsxnx**. The left hand column represents the occlusion score -5 - +5 (**sc_wted**). The row at the top represents how the cases were treated, 0 = non-extraction and 1 = extraction (**gibbsxnx**).

TABLE 5.0

TABLE OF SC_WTED BY GIBBSXNX

SC_WTED / GIBBSXNX	0	1	Total
-5	3	1	4
-4	0	5	5
-3	2	2	4
-1	0	4	4
0	5	2	7
1	6	4	10
2	2	2	4
3	2	3	5
4	2	0	2
5	2	1	3
Total	24	24	48

The following outline represents the strategy taken to test the occlusion hypotheses.

A. Select a limited number of cephalometric measures to represent the objective variable being tested.

T1. Test the inter-relationship among the cephalometric measures.

a. Spearman Rank Correlation

T2. Test the cephalometric measure that best represents the objective ariable of interest with the continuous variable of occlusion **sc_wted.**

a. Spearman Rank Correlation

Specific occlusion hypotheses

Rationale: These hypotheses were tested to see if any morphologic characteristics measured from a head film could be associated with the subjective evaluation of study casts.

Each of the following hypotheses follows this outline.

1. Cases with the "best" occlusion will tend to have less overjet.

Cephalometric measure of overjet:

1. OVERJ_02

TABLE 5.1

Spearman Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 48

	OVERJ_02	SC_WTED
OVERJ_02	1.00000 0.0	-0.12280 0.4057
SC_WTED	-0.12280 0.4057	1.00000 0.0

T2 The Spearman rank correlation failed to demonstrate a significant association between the variable OVERJ_02 and **sc_wted. FIG 5.1**

2. Cases with the "best" occlusions will tend to have less incisor protrusion

Cephalometric measures of incisor protrusion:

1. UIPP_02
2. LIMPA_D_02
3. IIANG_02

T1 Test the inter-relationship among these measures.

a. Spearman Rank Correlation **TABLE 5.2**

Spearman Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 48

	UIPP_02	LIMPA_02	IIANG_02	SC_WTED
UIPP_02	1.00000 0.0	0.00912 0.9510	-0.67792 0.0001	-0.00635 0.9658
LIMPA_02	0.00912 0.9510	1.00000 0.0	-0.51400 0.0002	-0.09754 0.5096
IIANG_02	-0.67792 0.0001	-0.51400 0.0002	1.00000 0.0	-0.05731 0.6988
SC_WTED	-0.00635 0.9658	-0.09754 0.5096	-0.05731 0.6988	1.00000 0.0

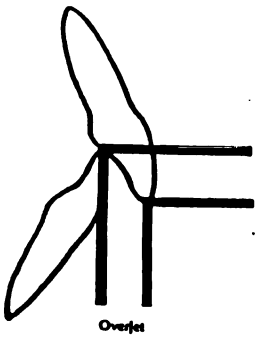
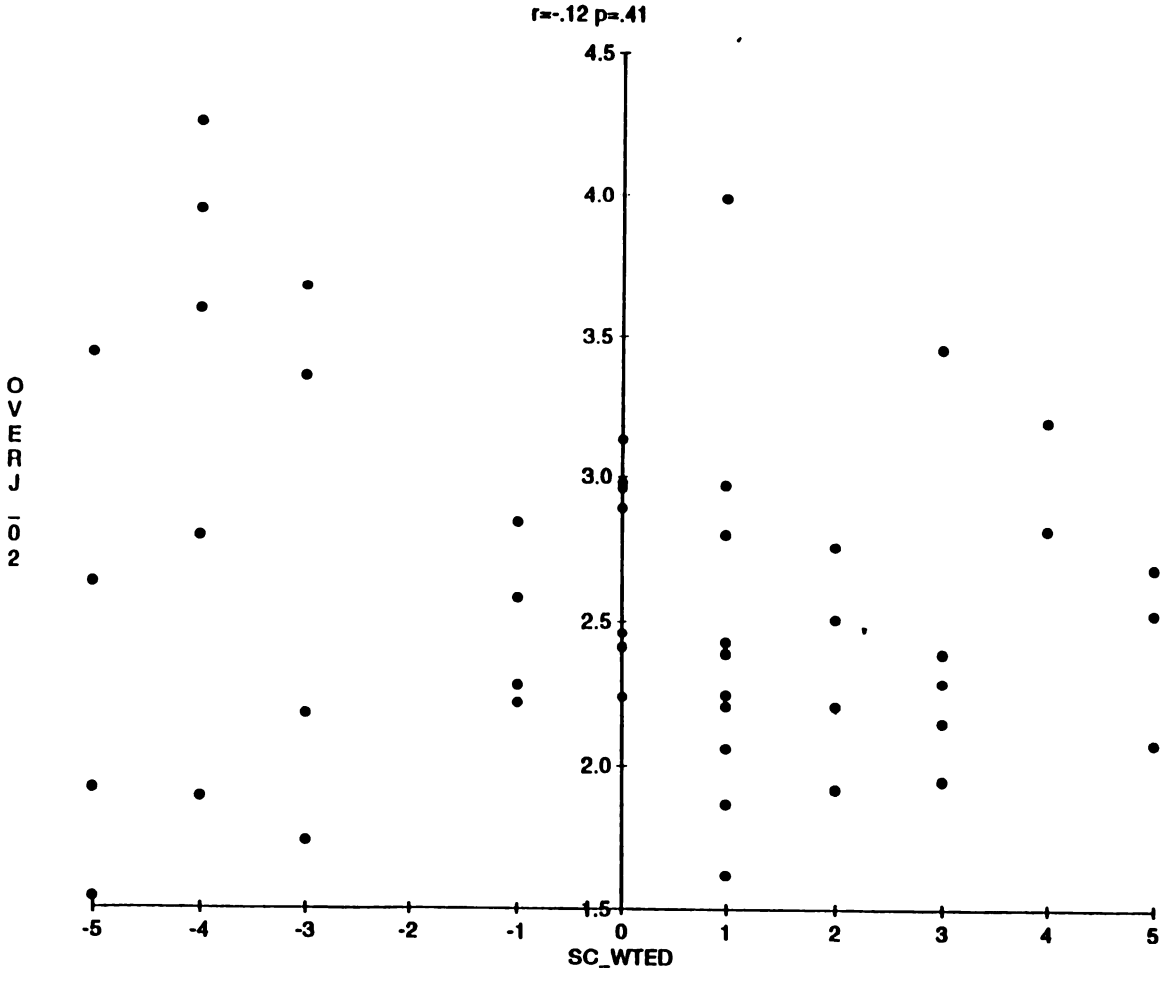


FIGURE 5.1 :OVERJ_02 vs. SC_WTED



T1 revealed IIANG_02 had the highest correlation with the other measures of incisor protrusion and was the variable used to run the T2 tests.

T2 The Spearman rank correlation failed to demonstrate a significant association between the variable IIANG_02 and **sc_wted. FIG 5.2**

3. Cases with the "best" occlusions will tend to have less anterior-posterior skeletal relationships.

Cephalometric measures of anterior-posterior skeletal relationship:

1. ANPG_02
2. ANB_02
3. WITSX_02

T1 Test the inter-relationship among these measures.

a. Spearman Rank Correlation **TABLE 5.3**

Spearman Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 48

	ANPG_02	ANB_02	WITSX_02	SC_WTED
ANPG_02	1.00000 0.0	0.93060 0.0001	-0.26532 0.0684	-0.06563 0.6576
ANB_02	0.93060 0.0001	1.00000 0.0	-0.43369 0.0021	-0.03714 0.8021
WITSX_02	-0.26532 0.0684	-0.43369 0.0021	1.00000 0.0	0.12195 0.4090
SC_WTED	-0.06563 0.6576	-0.03714 0.8021	0.12195 0.4090	1.00000 0.0

T1 revealed that ANB_02 had the highest correlation with the other measures of anterior-posterior skeletal relationship and was the variable used to run the T2 test.

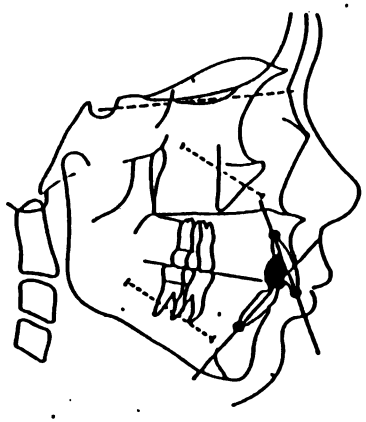
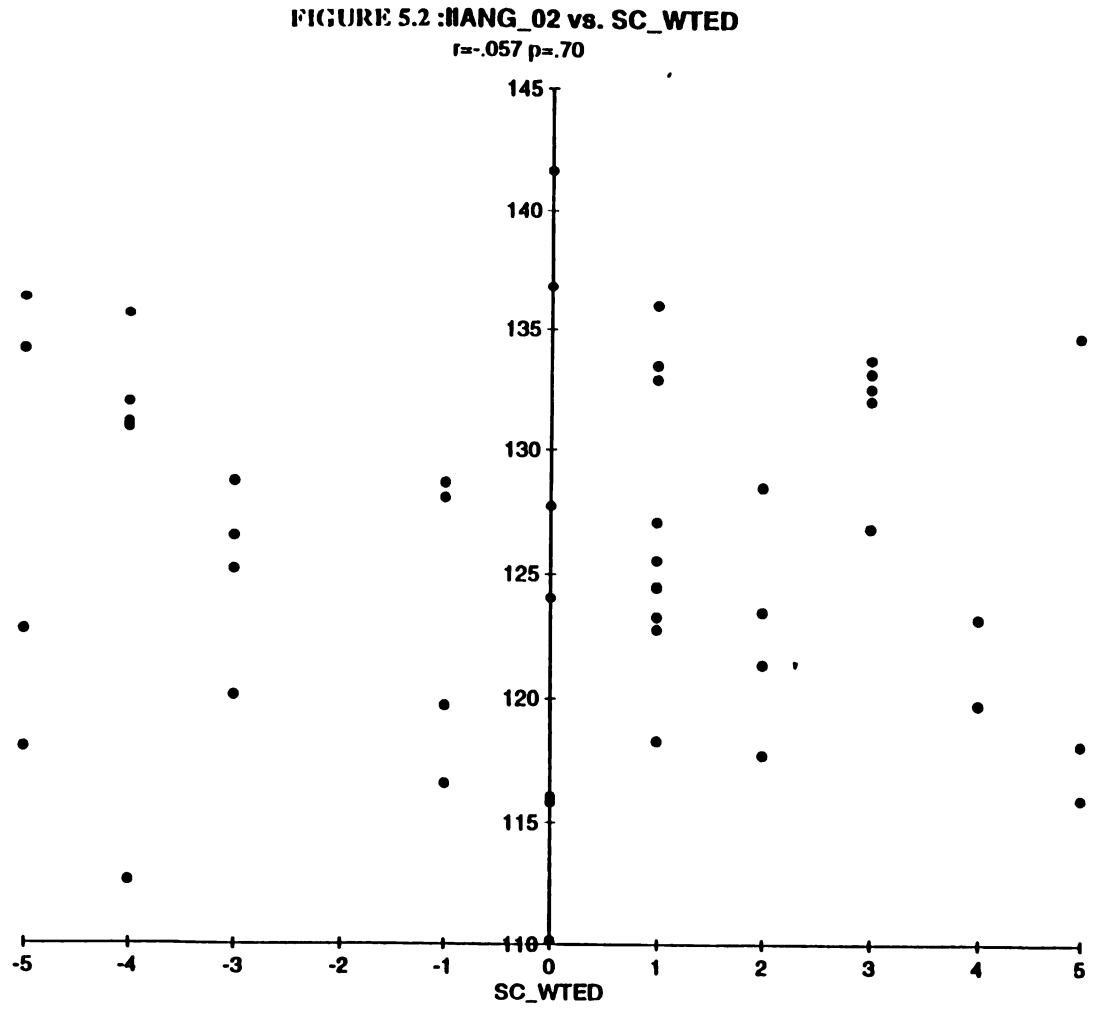


FIGURE 5.2 :IIANG_02 vs. SC_WTED



T2 The Spearman rank correlation failed to demonstrate a significant association between the variable ANB_02 and **sc_wted**. **FIG 5.3**

In summary, there were no significant associations between the objective cephalometric measures that were tested with the subjective occlusion variable **sc_wted**.

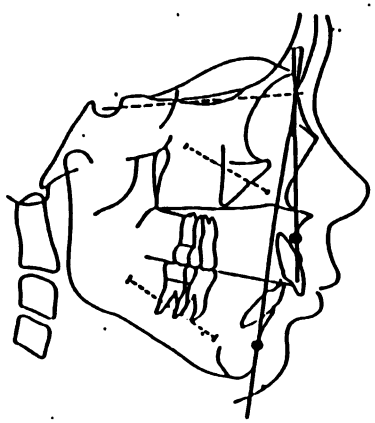
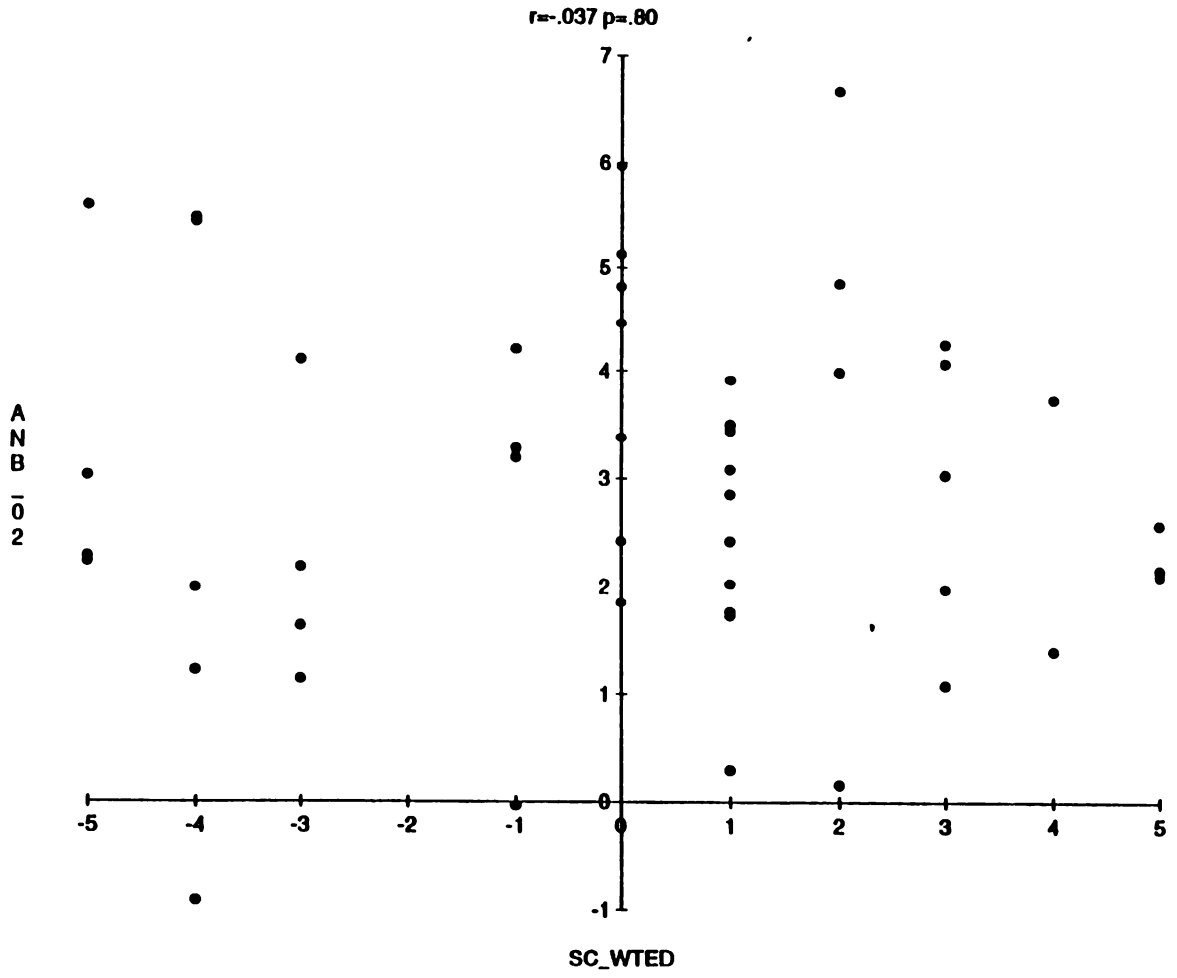


FIGURE 5.3 :ANB_02 vs. SC_WTED



DISCUSSION OF RESULTS

The results of this study indicated that the distribution of the extraction scores of the five skilled clinicians were skewed towards a non-extraction treatment approach for the 48 cases. The five clinicians unanimously agreed on extraction treatment for only 6 of the 48 cases while they agreed unanimously on a non-extraction approach for 20 of the cases. Of the 22 "borderline" extraction cases, the clinician treating the cases extracted on 15. The clinicians that participated in our study, taken as a whole, demonstrated a greater tendency towards non-extraction treatment than the single clinician who treated the cases. It was one of our goals of this study to limit the bias of any one clinician by having each case evaluated independently by five clinicians. This discrepancy in treatment philosophy may be due to the clinician who treated the cases having a treatment philosophy that is oriented towards an extraction approach. Another possible explanation is that the five clinicians who participated in the study did not have the benefit of performing a clinical exam on the patient as did the treating clinician. Obviously, when the treating orthodontist interacted with the patient during the initial exam, he began to assess such subjective criteria as to whether the patient was going to cooperate. This information was most likely used to formulate the patient's treatment plan.[15] For example, a patient who expresses an unwillingness to wear a headgear or elastics may receive a different treatment plan than a patient who is willing to cooperate. In general, our clinicians evaluated the records assuming the patients would cooperate which would lead to the reasonable assumption that the clinicians would chose a treatment plan which demands greater cooperation, particularly in the "borderline" cases.

Our study design was based on having a mechanism to control the treatment bias of a single clinician. The mechanism employed quantified the combined extraction decision of the five clinicians. Previous studies have revealed that the reasons most often cited for extraction are crowding, incisor protrusion, fullness of the profile, Class II severity, and

stability.[12] Objective quantitative measures from cephalometric head films, that could represent these cited reasons to extract, were tested for association with the extraction propensity of the five clinicians.

A significant association (r=-.38 p=.0084) existed between the propensity to extract and the amount of incisor protrusion (**FIG 2.1**). This finding was expected since it was the second most frequently cited reason for extraction given in the study mentioned above. The largest variation in incisor protrusion occurred in the unanimous non-extraction group of patients which infers that other factors play a significant role in the clinician's extraction decision which may override the factor of incisor protrusion.

Class II severity was another common reason cited in the decision to extract. No significant association was found between severity of Class II (anterior-posterior skeletal relationship) and the propensity to extract (**FIG 2.2**). This was an interesting finding since camouflaging skeletal discrepancies with extraction of teeth is a strategy employed by many clinicians.[29] This finding was also in agreement with the finding of no significant association between hard and soft tissue profile convexity and the propensity to extract.(**FIG 2.3 and 2.4.**).

In this study, fullness of the profile was a frequently cited reason for extraction evidenced by the significant association between lip fullness (fullness of the profile) and the propensity to extract (**FIG 2.3 and 2.4**). The association with the fullness of the upper lip was stronger than with the lower lip.

Significant associations were also found between the amount of vertical jaw discrepancy and the propensity to extract (**FIG 2.8 and 2.9**). This is consistent with the general contention that extraction of teeth can decrease the vertical dimension, particularly in patients who present with an open bite.[28]

When viewing the scatter plots of the various cephalometric measures, the study sample displayed a wide range of variation among the measures that did show significant associations. A multiple regression analysis was performed to analyze the association

between the extraction decision of the five clinicians and the objective cephalometric measures taken together as a whole (Incisor protrusion, Lip fullness, and vertical skeletal relationship) and is shown in **FIG 2.10.** The r squared value for these variables taken together was .36 which can be interpreted as showing that these three cephalometric variables explained only 36% of the five clinicians decisions.

In light of this finding and the amount of variation displayed in the sample, an important question emerged: How much did these five clinicians rely on the cephalometric head film when formulating their extraction decision? The multiple regression results suggest that only one third of the clinician's decision is accounted for by the factors above. This finding was not to suprising since the clinicians evaluated the complete pre-treatment records for each case. The study casts and photographs surely accounted for a portion of their decision, especially since crowding, which is a frequent reason for extraction, is usually assessed by examination of the study casts.

The amount of cephalometric variation found within the sample revealed that there was not any specific information from cephalometrics alone that indicated the extraction of teeth. This finding was in agreement with the findings of Vig et al.[15] The results also revealed the importance of crowding, the clinical exam, and the visual analysis of information from photographs in making an extraction decision.

The facial appearance score (**TABLE 3.0**) summarizes the subjective data gained from the clinicians evaluation of post-treatment lateral and frontal photographs. Visual analysis of the table demonstrates that extraction and non-extraction cases at each end of the scoring continuum are evenly represented. However, a Kruskal-Wallis statistical analysis revealed that a significant difference in facial appearance exist between the group of cases treated with extraction and the group treated without extraction. The cases treated without extraction had higher facial appearance scores as reported by Herrmann[23] in a parallel study investigating the concordance among clinician's stated reasons.

Because this study investigated associations between objective measurement of post-treatment cephalometric head films and subjective impression of facial appearance, our results should be considered in light of recent interests shown by the dental profession that the treatment methods implemented by traditional orthodontists may result in poor facial esthetics.[30,31] These criticisms allege orthodontic clinicians have based treatment plans primarily on the basis of cephalometric numbers which in some cases could lead to treatment results with unfavorable or "dished in" facial esthetics.[10]

The association tested in the first hypothesis revealed that prominence of the nose was negatively associated with the perception of facial appearance (**FIG 3.1**). The balance and harmony of the nose in relation to the chin is important to facial esthetics. This finding is what might have been expected since a large nose can make the projection of the chin appear weak, and vice versa, a weak chin can make the nose appear large and protrusive.[21,22] Rhinoplasties and/or genioplasties are frequently employed as adjunctive procedures to help balance the relationship between the nose and chin.

Hard and soft tissue facial convexity was tested next against the facial appearance variable. The test revealed a significant association between soft tissue facial convexity, but not hard tissue facial convexity (**FIG 3.2** and **FIG 3.3**). This findings supports the notion that the soft tissue can mask an underlying skeletal discrepancy, and stresses the importance of analyzing both the hard and soft tissue.

The measures of chin prominence relative to cranial base failed to show a significant association with facial appearance (**FIG 3.4.**). This may be explained because the clinicians most likely evaluated the position of the chin in balance with other visible structures such as the nose and lips. The nasiofacial angle and soft tissue facial convexity are soft tissue measures relative to chin position. As discussed above these measures did show significant associations with the clinicians perception of facial appearance.

Less lip fullness and incisor protrusion were tested for association with facial appearance (**FIG 3.5 and 3.6**). These measures failed to show a significant association

with the variable of facial appearance. This is an interesting finding because incisor protrusion is usually present together with lip fullness and both were common reasons cited for extraction.[12] Orthodontic treatment mechanics are frequently aimed at decreasing incisor protrusion and fullness of the lips, especially in Class II patients. It was anticipated by this author that incisor protrusion and lip fullness would have been negatively associated with facial appearance. On the other hand, society's view of lip fullness has been changing, and currently in the USA full lips are a desirable characteristic attributed to those in the modeling industry.

The objective cephalometric measures of increased vertical skeletal relationship showed a significant association with the propensity to extract. The reasons for this have traditionally been attributed to the clinician's desires to not increase the vertical skeletal relationships with the expansion associated with non-extraction treatment.[28] Patients with long anterior dimension and short posterior dimensions of the face usually have experienced excessive vertical development of the jaws and excessive dentoalveolar eruption. During orthodontic treatment any excessive extrusion of the maxillary posterior teeth wedges the mandible down and back increasing the height of the lower face and reducing the prominence of the chin. It could then be inferred that cases with increased vertical skeletal relationships posses characteristics that negatively effect facial appearance. Although there was no significant association between the angular measures of vertical skeletal relationship and facial appearance, there was a significant negative relationship between the linear measures of vertical skeletal relationship (lower face height and total face height) and facial appearance.

The multiple regression shown in **FIG 3.10** revealed that the three factors significantly associated with the facial appearance scores of the five clinicians could only account for 37% of the clinicians assessment of facial appearance. This percentage was similar to that found for the extraction/non-extraction portion of the study.

When the clinicians evaluated the improvement from orthodontic treatment for the 48 cases (**TABLE 4.0**), the cases evaluated as having the most improvement were predominantly treated with extractions while the cases with the least improvement were predominantly treated without extraction. It was our goal to identify which cephalometric measures, from superimposed pre and post-treatment head films, represented the changes in the hard and soft tissue that were significantly associated with the clinician's subjective impressions of improvement.

When facial appearance was considered, the data showed that the cases with less nose prominence were evaluated as having a favorable facial appearance. Although our hypothesis stated that increases in nose prominence would be negatively associated with the clinician's perception of improvement, this was not verified (**FIG 4.1**) as the changes in nose prominence failed to show a significant association with the clinician's evaluation of outcome. However, a decrease in both hard and soft tissue facial convexity showed a significant association with clinicians evaluations of outcome (**FIG 4.2** and **FIG 4.3**). This finding is generally what one would expect, particularly with the finding that clinicians preferred cases with straighter profiles when judging facial appearance.

It was also found that a decrease in vertical skeletal relationships were associated with the clinician's evaluation of treatment outcome (**FIG 4.5** and **FIG 4.6**). Since increases in vertical skeletal relationships generally have the effect of lengthening the face which can result in disharmony of the facial thirds, the effect of decreasing the vertical skeletal relationship on facial esthetics is most likely the reason these cases were selected as being more improved.

The multiple regression to evaluate the association between the combined changes in cephalometric measures and treatment outcome revealed that approximately 25% of the clinician's decisions could by accounted for by the cephalometric measures (**FIG 4.8**). This finding and the multiple regressions from the other sections of the study demonstrated that cephalometric analysis was a very limited tool for assessing the clinician's subjective

decisions. This was not entirely due to the limitations of head film analysis, but also to the amount of individual variation in cephalometric measures contained in the study sample.

All tests for associations between post-treatment evaluations of study casts and cephalometric measures failed to demonstrate any significant relationships (**FIG 5.1, FIG 5.2,** and **FIG 5.3**). This was not suprising since the cephalometric head film represents the occlusion in only two dimensions with the transverse relationship of the arches not represented. A future study in the Division of Orthodontics is planning to test the association between the subjective clinical evaluations of post-treatment study casts and three dimensional objective measurement of the study casts from stereophotographs.

Conclusions

It is important to emphasize that the findings and conclusions from this study can only be directly applied to those UCSF Clinical faculty who provided the subjective data for this study. It is our intention to reproduce this study in the future on a larger scale with increased sample sizes and more analysis of subjective clinical data which will be generated from other institutions from around the country. This may allow more generalizability of the results to other clinicians.

The associations found between the clinicians subjective decisions and objective cephalometric measures were generally weak which when taken collectively could only account for approximately one third of the clinician's decisions. However, these associations did allow us to identify some of the factors the clinicians assessed when evaluating the cases. More importantly, the scatter plots generated from this data enabled us to examine the amount of individual variation displayed in the sample. If we assume that the subjective data gathered from the clinicians is more reliable than the objective data obtained from the analysis of head films, then why have clinicians traditionally paid so much attention to cephalometric measures to make treatment decisions? Cephalometric

analysis is useful to clinicians for several reasons. First, it allows orthodontists to communicate to other clinicians and students about a patient's characteristics in a quantifiable way. It also allows one to classify, compare, and/or describe the patient's characteristics without the patient being present in clinical research which seeks to evaluate treatment and growth changes.[32]

Although demands and expectations of the public have been increased in the last decade concerning both occlusal and facial esthetic goals. Changing trends in our health care system may frequently rule out having an orthognathic surgical procedure for skeletal problems as the HMO and PPO health plans try to contain healthcare costs. The information gained in this study can potentially give clinicians a greater understanding of the variation in treatment response for individual patients and provide a basis for informing patients about the limitations of orthodontic treatment.

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# Obs	Variable	N	Minimum	Maximum	Mean	Std Dev
48	STUDY_01	48	9204.00	9204.00	9204.00	0.00
	CASE_01	48	103.00	422.00	260.52	113.37
	TP_01	48	1.00	1.00	1.00	0.00
	SEX_01	48	1.00	2.00	1.60	0.49
	AGE_01	48	7.59	15.39	10.94	1.76
	SACB_01	48	1.00	1.00	1.00	0.00
	FRFR_01	48	3.00	3.00	3.00	0.00
	NASX_01	48	86.20	112.49	96.34	4.86
	NASY_01	48	26.00	37.53	30.24	2.88
	GLABX_01	48	96.54	126.45	107.34	5.66
	GLABY_01	48	32.41	58.13	45.58	5.75
	SBRDX_01	48	90.21	119.64	103.09	5.59
	SBRDY_01	48	14.84	32.87	23.29	3.80
	MNOTX_01	48	105.58	147.88	122.94	7.35
	MNOTY_01	48	-29.44	-4.84	-16.06	5.04
	USULX_01	48	90.88	128.41	107.31	6.88
	USULY_01	48	-44.48	-21.54	-34.43	4.91
	ULANX_01	48	93.34	131.71	110.48	7.35
	ULANY_01	48	-58.46	-32.78	-44.20	5.37
	LLANX_01	48	85.67	128.35	105.47	7.65
	LLANY_01	48	-72.57	-45.61	-58.58	5.49
	LSULX_01	48	73.81	117.02	94.85	8.10
	LSULY_01	48	-82.19	-58.41	-68.20	5.54
	SOCHX_01	48	71.30	121.94	95.62	9.62
	SOCHY_01	48	-91.22	-67.13	-78.83	5.37
	MLA_01	48	78.73	133.88	108.66	12.59
	MFA_01	48	27.89	40.39	33.75	2.85
	STFC_01	48	154.20	174.67	164.72	5.52
	ULSPX_01	48	-11.78	-0.72	-6.29	2.44
	DUMM3_01	48	-2.48	0.24	-0.60	0.55
	LLSPX_01	48	-11.94	0.89	-4.95	2.53
	DUMM4_01	48	-2.33	0.25	-0.47	0.50
	ULREX_01	48	-4.97	7.73	0.12	3.14
	DUMM5_01	48	-0.86	1.22	0.04	0.40
	LLREX_01	48	-8.42	5.72	-1.20	3.12
	DUMM6_01	48	-1.48	1.12	-0.09	0.43
	MPROX_01	48	11.65	19.37	14.45	1.86
	DUM1_01	48	8.13	15.69	12.21	1.83
	DUMM2_01	48	-0.88	6.55	1.94	1.73
	IGAP_01	48	-2.46	9.12	1.01	2.35
	RESTO_01	48	9.00	9.00	9.00	0.00
	CASE_02	48	103.00	422.00	260.52	113.37
	TP_02	48	2.00	3.00	2.15	0.36
	SEX_02	48	1.00	2.00	1.60	0.49
	AGE_02	48	12.54	18.04	14.92	1.50
	SACB_02	48	1.00	1.00	1.00	0.00
	FRFR_02	48	1.00	1.00	1.00	0.00
	NASX_02	48	89.36	115.30	98.19	5.09
	NASY_02	48	23.08	37.80	29.48	3.11
	GLABX_02	48	99.29	127.33	108.90	5.62
	GLABY_02	48	31.71	53.80	43.66	4.44
	SBRDX_02	48	95.85	126.00	105.82	5.80
	SBRDY_02	48	12.47	33.81	22.81	4.16
	MNOTX_02	48	110.96	151.30	127.80	7.68
	MNOTY_02	48	-35.82	-8.47	-20.83	5.50

N Obs	Variable	N	Minimum	Maximum	Mean	Std Dev
48	USULX_02	48	90.95	128.61	107.49	7.35
	USULY_02	48	-51.25	-29.48	-40.85	5.22
	ULANX_02	48	91.88	131.81	110.28	7.79
	ULANY_02	48	-62.57	-39.37	-49.52	5.17
	LLANX_02	48	85.02	128.72	105.75	8.23
	LLANY_02	48	-76.25	-52.71	-64.17	4.93
	LSULX_02	48	73.09	117.31	95.29	8.98
	LSULY_02	48	-90.02	-65.24	-75.10	5.66
	SOCNX_02	48	71.00	121.91	96.87	10.60
	SOCNY_02	48	-101.59	-74.55	-87.26	5.62
	NLA_02	48	87.08	140.53	112.28	13.05
	NFA_02	48	27.13	38.16	33.92	2.49
	STFC_02	48	150.58	177.61	164.81	6.01
	ULSPX_02	48	-9.33	3.56	-4.04	2.52
	DUM43_02	48	-2.12	0.64	-0.32	0.44
	LLSPX_02	48	-8.96	3.46	-3.22	2.50
	DUM44_02	48	-1.38	0.49	-0.27	0.38
	ULREX_02	48	-1.85	15.56	4.33	3.14
	DUM45_02	48	-0.42	2.22	0.40	0.47
	LLREX_02	48	-4.01	11.64	1.89	3.17
	DUM46_02	48	-0.52	1.66	0.17	0.37
	NPROX_02	48	14.05	22.87	17.45	1.95
	DUM1_02	48	7.45	17.85	12.58	2.26
	DUM2_02	48	-0.70	7.08	1.56	1.72
	IGAP_02	48	-2.05	7.54	0.64	2.03
	RESTO_02	48	9.00	9.00	9.00	0.00
	CASE_12	48	0.00	0.00	0.00	0.00
	TP_12	48	1.00	2.00	1.15	0.36
	SEX_12	48	0.00	0.00	0.00	0.00
	AGE_12	48	1.50	9.20	3.97	1.73
	SACB_12	48	0.00	0.00	0.00	0.00
	FRFR_12	48	-2.00	-2.00	-2.00	0.00
	MASX_12	48	-2.08	5.52	1.86	1.78
	MASY_12	48	-6.84	3.02	-0.76	1.60
	GLASX_12	48	-3.21	7.61	1.56	2.45
	GLASY_12	48	-17.21	3.36	-1.91	3.79
	SBRDX_12	48	-2.36	9.20	2.73	2.79
	SBRDY_12	48	-7.26	8.44	-0.49	2.76
	MMOTX_12	48	-2.72	14.41	4.87	3.88
	MMOTY_12	48	-12.00	-0.78	-4.77	2.73
	USULX_12	48	-4.69	7.70	0.19	2.72
	USULY_12	48	-14.73	0.85	-6.42	3.98
	ULANX_12	48	-5.38	9.07	-0.21	3.25
	ULANY_12	48	-13.43	-0.37	-5.32	3.24
	LLANX_12	48	-5.23	7.61	0.28	3.07
	LLANY_12	48	-21.32	2.28	-5.59	4.54
	LSULX_12	48	-5.47	8.71	0.43	3.20
	LSULY_12	48	-17.46	3.69	-6.90	4.80
	SOCNX_12	48	-5.65	11.85	1.25	3.61
	SOCNY_12	48	-19.51	0.94	-8.44	5.08
	NLA_12	48	-10.08	24.33	3.61	7.83
	NFA_12	48	-4.37	5.86	0.17	1.91
	STFC_12	48	-5.63	11.87	0.10	3.25
	ULSPX_12	48	-1.52	7.72	2.25	1.77
	DUM43_12	48	-0.16	1.34	0.28	0.30

N Obs	Variable	N	Minimum	Maximum	Mean	Std Dev
48	LLSPX_12	48	-2.37	5.48	1.73	1.94
	DUMM4_12	48	-0.21	0.95	0.20	0.26
	ULREX_12	48	-0.01	9.51	4.22	2.30
	DUMM5_12	48	-0.12	1.60	0.37	0.38
	LLREX_12	48	-1.52	7.43	3.10	2.38
	DUMM6_12	48	-0.18	1.16	0.26	0.31
	NPROX_12	48	0.24	6.10	3.00	1.35
	DUM1_12	48	-1.88	4.54	0.37	1.25
	DUMM2_12	48	-6.17	4.23	-0.37	2.04
	IGAP_12	48	-5.70	6.42	-0.37	2.55
	RESTO_12	48	0.00	0.00	0.00	0.00
	OVERJ_01	48	1.49	9.58	4.77	1.68
	OVERB_01	48	-3.00	10.13	4.83	2.45
	UIPP_01	48	90.89	126.74	112.66	6.15
	LIMPA_01	48	85.25	118.46	97.10	6.63
	IIANG_01	48	106.70	147.15	125.60	8.36
	MAX2_01	48	4.34	20.03	12.03	3.39
	MANZ_01	48	8.87	35.43	20.63	5.27
	SNA_01	48	75.10	89.39	81.41	3.51
	SNPG_01	48	66.18	83.93	77.04	3.68
	SNB_01	48	66.60	82.35	76.54	3.30
	AMPG_01	48	0.06	11.37	4.37	2.44
	AMB_01	48	1.23	10.95	4.88	2.15
	VERJR_01	48	13.88	37.93	24.63	5.16
	MAXIN_01	48	1.70	17.63	9.80	3.08
	MANIN_01	48	21.47	48.11	34.43	6.52
	GONA_01	48	121.21	143.04	134.13	5.46
	SADA_01	48	113.55	132.28	123.78	3.72
	CRBA_01	48	118.91	137.94	129.49	4.16
	OCCFR_01	48	2.00	2.00	2.00	0.00
	VITSX_01	48	-9.71	5.84	-1.93	3.04
	DUMM7_01	48	-49.30	-33.14	-39.45	3.59
	FPA_D_01	48	68.19	89.47	82.61	4.26
	CONVX_01	48	155.55	179.86	170.54	5.28
	ABPLN_01	48	34.89	49.70	42.06	3.31
	MPA_D_01	48	18.02	46.10	28.86	6.16
	DUMY_01	48	-104.27	-84.78	-92.46	3.99
	OCC_D_01	48	2.89	27.34	12.68	5.26
	L1OCC_01	48	51.91	80.28	66.72	5.27
	U1APA_01	48	15.46	47.09	30.90	6.36
	U1SN_01	48	79.26	113.98	102.86	6.15
	U1NAN_01	48	0.80	8.98	4.18	1.95
	U1NAA_01	48	-4.69	35.42	21.45	6.81
	L1NBN_01	48	0.94	12.52	5.62	2.28
	L1NBA_01	48	20.12	40.09	28.07	4.63
	PGNBN_01	48	0.01	5.46	1.44	1.16
	OCCSN_01	48	9.47	28.39	18.25	4.80
	GGSNA_01	48	21.47	48.11	34.43	6.52
	FNIA_01	48	38.87	65.50	54.04	6.73
	MPA_T_01	48	18.02	46.10	28.86	6.16
	ARTA_01	48	127.29	146.41	136.52	5.00
	UGDA_01	48	50.07	63.35	56.92	2.85
	LGDA_01	48	68.69	86.04	77.21	4.87
	ACBL_01	48	67.43	80.42	75.28	3.05
	NNBL_01	48	53.51	70.88	63.10	4.47

N Obs	Variable	N	Minimum	Maximum	Mean	Std Dev
48	PCBL_01	48	28.92	41.60	35.85	3.27
	RAMN_01	48	42.45	60.82	51.16	5.00
	PFN_01	48	69.99	96.01	80.94	6.22
	TFN_01	48	105.10	135.24	120.75	6.96
	UFN_01	48	45.05	64.28	55.65	3.71
	LFN_01	48	56.17	78.36	66.89	4.66
	CMPOD_01	47	99.93	126.88	114.97	6.33
	OVERJ_02	48	1.54	4.25	2.61	0.64
	OVERB_02	48	0.71	4.84	2.89	0.99
	UIPP_02	48	103.41	126.88	115.16	6.70
	LIMPA_02	48	81.88	113.60	95.36	7.30
	IIANG_02	48	110.19	141.65	126.01	7.25
	MAXZ_02	48	0.52	16.52	8.66	3.51
	MANZ_02	48	11.73	31.74	21.53	4.67
	SNA_02	48	71.83	87.56	79.55	3.91
	SNPG_02	48	67.17	87.78	77.88	4.17
	SNB_02	48	67.25	84.59	76.61	3.88
	ANPG_02	48	-4.01	6.10	1.67	2.30
	ANB_02	48	-0.91	6.68	2.94	1.66
	VERJR_02	48	10.90	34.77	23.47	5.21
	MAXIN_02	48	1.48	20.79	10.53	3.20
	MANIN_02	48	21.83	46.20	34.01	6.45
	GONA_02	48	116.69	141.17	131.75	5.63
	SADA_02	48	113.58	131.91	124.17	4.23
	CRBA_02	46	118.11	138.07	129.27	4.65
	OCCFR_02	48	1.00	1.00	1.00	0.00
	WITSX_02	48	-6.91	6.34	-0.44	3.05
	DUMM7_02	48	-47.45	-31.78	-40.18	3.67
	FPA_D_02	48	70.62	90.73	82.80	4.30
	CONVX_02	48	165.84	189.20	176.30	5.13
	ABPLN_02	48	30.99	47.60	38.47	3.83
	MPA_D_02	48	18.55	44.31	29.09	5.68
	DUMY_02	48	-105.44	-85.69	-93.96	4.01
	OCC_D_02	48	-2.26	23.60	11.25	5.00
	L1OCC_02	48	52.58	78.65	66.80	5.64
	U1APA_02	48	17.49	44.10	28.77	6.11
	U1SN_02	48	88.43	116.68	104.62	7.18
	U1NAM_02	48	0.11	9.20	3.51	1.99
	UINAA_02	48	9.48	36.87	25.07	6.14
	L1NBM_02	48	0.74	11.90	5.02	2.12
	L1NBA_02	48	12.14	35.83	25.98	5.28
	PGNBM_02	48	0.02	7.53	2.78	2.12
	OCCSN_02	48	5.87	24.64	16.17	4.78
	GGSNA_02	48	21.83	46.20	34.01	6.45
	FMIA_02	48	38.88	74.69	55.29	6.88
	MPA_T_02	48	18.16	44.81	29.36	6.17
	ARTA_02	48	128.49	150.04	138.09	5.29
	UGOA_02	48	47.43	59.34	53.87	2.78
	LGOA_02	48	68.44	85.91	77.88	4.75
	ACBL_02	48	71.78	83.71	77.18	3.08
	MMBL_02	48	56.45	82.53	67.35	5.34
	PCBL_02	48	31.72	46.50	37.89	3.75
	RAMN_02	48	44.94	69.18	56.59	5.54
	PFN_02	48	77.34	103.16	88.39	7.16
	TFN_02	48	118.16	144.05	129.64	6.65

N Obs	Variable	N	Minimum	Maximum	Mean	Std Dev
48	UFN_02	48	50.91	66.98	58.96	3.66
	LFN_02	48	63.01	80.85	71.90	4.59
	CMPOD_02	48	109.21	142.27	122.19	7.20
	OVERJ_12	48	-5.68	1.31	-2.15	1.67
	OVERB_12	48	-6.93	5.67	-1.94	2.27
	UIPP_12	48	-21.12	24.13	2.50	9.46
	LINPA_12	48	-13.35	7.78	-1.74	5.08
	IIANG_12	48	-27.44	20.41	0.41	10.44
	MAXZ_12	48	-11.59	7.87	-3.37	4.06
	MANZ_12	48	-13.54	16.98	0.90	5.38
	SNA_12	48	-8.46	4.12	-1.86	1.99
	SNPG_12	48	-2.20	9.50	0.84	2.06
	SNB_12	48	-3.54	6.92	0.08	1.98
	ANPG_12	48	-8.03	1.13	-2.70	1.99
	ANB_12	48	-6.24	1.70	-1.94	1.73
	VERJR_12	48	-5.98	3.98	-1.16	2.30
	MAXIN_12	48	-5.41	3.93	0.73	1.83
	MANIN_12	48	-9.22	7.38	-0.43	2.74
	GONA_12	48	-9.11	2.23	-2.38	2.02
	SADA_12	48	-4.95	6.75	0.38	1.96
	CRBA_12	46	-6.88	5.11	0.06	1.96
	OCCFR_12	48	-1.00	-1.00	-1.00	0.00
	WITSX_12	48	-2.77	8.22	1.49	2.49
	DUMM7_12	48	-7.11	5.52	-0.73	2.94
	FPA_D_12	48	-3.84	4.04	0.19	1.56
	CONVX_12	48	-2.37	16.89	5.76	4.19
	ABPLN_12	48	-10.94	4.20	-3.59	3.35
	MPA_D_12	48	-4.90	9.01	0.22	2.38
	DUMY_12	48	-7.38	2.30	-1.50	1.76
	OCC_D_12	48	-11.13	9.47	-1.43	4.04
	L1OCC_12	48	-9.36	10.62	0.08	5.21
	U1APA_12	48	-21.33	15.53	-2.14	8.09
	U1SN_12	48	-21.54	23.93	1.76	9.64
	U1MAN_12	48	-5.60	4.60	-0.67	2.74
	U1MAA_12	48	-20.13	27.51	3.62	9.69
	L1NBN_12	48	-6.39	2.30	-0.60	2.03
	L1NBA_12	48	-11.37	8.80	-2.09	4.68
	PGNBN_12	48	-1.99	5.93	1.34	1.59
	OCCSN_12	48	-14.10	7.70	-2.09	4.19
	GGSNA_12	48	-9.22	7.38	-0.43	2.74
	FNIA_12	48	-12.42	15.36	1.25	6.36
	MPA_T_12	48	-11.01	11.89	0.49	4.38
	ARTA_12	48	-5.90	12.90	1.57	3.07
	UGOA_12	48	-9.67	0.33	-3.05	1.65
	LGOA_12	48	-5.06	6.42	0.67	1.75
	ACBL_12	48	-2.25	6.55	1.90	1.94
	MNBL_12	48	-2.61	16.11	4.26	3.59
	PCBL_12	48	-2.47	5.91	2.04	1.94
	RAMN_12	48	-0.97	15.42	5.43	3.26
	PFN_12	48	-0.59	19.28	7.46	4.15
	TFN_12	48	-1.87	24.47	8.89	4.94
	UFN_12	48	-1.45	9.58	3.31	2.39
	LFN_12	48	-1.52	14.94	5.01	3.33
	CMPOD_12	47	-1.98	23.34	7.43	4.85
	CASECHK	48	101.00	412.00	256.50	113.04

N Obs	Variable	N	Minimum	Maximum	Mean	Std Dev
48	GIBBSNUM	48	79186.00	88827.00	85305.50	2302.79
	GIBBSXXX	48	0.00	1.00	0.50	0.51
	GPATTERN	48	44.44	99.99	72.95	27.46
	SUMM_XXX	48	0.00	5.00	1.71	1.87
	SC_GOOD	48	0.00	5.00	1.25	1.52
	SC_SOSO	48	0.00	5.00	2.50	1.61
	SC_POOR	48	0.00	5.00	1.25	1.79
	PHO_GOOD	48	0.00	4.00	1.25	1.52
	PHO_SOSO	48	0.00	5.00	2.50	1.61
	PHO_POOR	48	0.00	5.00	1.25	1.78
	OUT_GOOD	48	0.00	5.00	1.25	1.39
	OUT_SOSO	48	0.00	5.00	2.50	1.38
	OUT_POOR	48	0.00	5.00	1.25	1.39
	SC_WTED	48	-5.00	5.00	0.00	2.91
	PHO_WTED	48	-5.00	4.00	0.00	2.90
	OUT_WTED	48	-5.00	5.00	0.00	2.41
	GIBBSANG	48	1.00	2.00	1.50	0.51
	AGREE	48	0.00	1.00	0.35	0.34

N Obs	Variable	Std Error
48	STUDY_01	0.00
	CASE_01	16.36
	TP_01	0.00
	SEX_01	0.07
	AGE_01	0.25
	SACB_01	0.00
	FRFR_01	0.00
	NASX_01	0.70
	NASY_01	0.42
	GLABX_01	0.82
	GLABY_01	0.83
	SBRDX_01	0.81
	SBRDY_01	0.55
	MMOTX_01	1.06
	MMOTY_01	0.73
	USULX_01	0.99
	USULY_01	0.71
	ULANX_01	1.06
	ULANY_01	0.77
	LLANX_01	1.10
	LLANY_01	0.79
	LSULX_01	1.17
	LSULY_01	0.80
	SOCNX_01	1.39
	SOCNY_01	0.77
	NLA_01	1.82
	NFA_01	0.41
	STFC_01	0.80
	ULSPX_01	0.35
	DUMM3_01	0.08
	LLSPX_01	0.36
	DUMM4_01	0.07
	ULREX_01	0.45

N Obs	Variable	Std Error
48	DUMM5_01	0.06
	LLREX_01	0.45
	DUMM6_01	0.06
	NPROX_01	0.27
	DUM1_01	0.26
	DUMM2_01	0.25
	IGAP_01	0.34
	RESTO_01	0.00
	CASE_02	16.36
	TP_02	0.05
	SEX_02	0.07
	AGE_02	0.22
	SACB_02	0.00
	FRFR_02	0.00
	NASX_02	0.73
	NASY_02	0.45
	GLABX_02	0.81
	GLABY_02	0.64
	SBRDX_02	0.84
	SBRDY_02	0.60
	NNOTX_02	1.11
	NNOTY_02	0.79
	USULX_02	1.06
	USULY_02	0.75
	ULANX_02	1.12
	ULANY_02	0.75
	LLANX_02	1.19
	LLANY_02	0.71
	LSULX_02	1.30
	LSULY_02	0.82
	SOCNX_02	1.53
	SOCNY_02	0.81
	NLA_02	1.88
	NFA_02	0.36
	STFC_02	0.87
	ULSPX_02	0.36
	DUMM3_02	0.06
	LLSPX_02	0.36
	DUMM4_02	0.05
	ULREX_02	0.45
	DUMM5_02	0.07
	LLREX_02	0.46
	DUMM6_02	0.05
	NPROX_02	0.28
	DUM1_02	0.33
	DUMM2_02	0.25
	IGAP_02	0.29
	RESTO_02	0.00
	CASE_12	0.00
	TP_12	0.05
	SEX_12	0.00
	AGE_12	0.25
	SACB_12	0.00
	FRFR_12	0.00
	NASX_12	0.26

N Obs	Variable	Std Error
48	NASY_12	0.23
	GLABX_12	0.35
	GLABY_12	0.55
	SBRDX_12	0.40
	SBRDY_12	0.40
	MNOTX_12	0.56
	MNOTY_12	0.39
	USULX_12	0.39
	USULY_12	0.57
	ULANX_12	0.47
	ULANY_12	0.47
	LLANX_12	0.44
	LLANY_12	0.66
	LSULX_12	0.46
	LSULY_12	0.69
	SOCNX_12	0.52
	SOCNY_12	0.73
	NLA_12	1.13
	NFA_12	0.28
	STFC_12	0.47
	ULSPX_12	0.26
	DUMM3_12	0.04
	LLSPX_12	0.28
	DUMM4_12	0.04
	ULREX_12	0.33
	DUMM5_12	0.06
	LLREX_12	0.34
	DUMM6_12	0.05
	NPROX_12	0.19
	DUM1_12	0.18
	DUMM2_12	0.29
	IGAP_12	0.37
	RESTO_12	0.00
	OVERJ_01	0.24
	OVERB_01	0.35
	UIPP_01	0.89
	LIMPA_01	0.96
	IIANG_01	1.21
	MAXZ_01	0.49
	MANZ_01	0.76
	SNA_01	0.51
	SNPG_01	0.53
	SNB_01	0.48
	ANPG_01	0.35
	ANB_01	0.31
	VERJR_01	0.74
	MAXIN_01	0.44
	MANIN_01	0.94
	GONA_01	0.79
	SADA_01	0.54
	CRBA_01	0.60
	OCCFR_01	0.00
	WITSX_01	0.44
	DUMM7_01	0.52
	FPA_D_01	0.62

N Obs	Variable	Std Error
48	CONVX_01	0.76
	ABPLN_01	0.48
	MPA_D_01	0.89
	DUMY_01	0.58
	OCC_D_01	0.76
	L1OCC_01	0.76
	U1APA_01	0.92
	U1SN_01	0.89
	U1NAH_01	0.28
	UINAA_01	0.98
	L1NBN_01	0.33
	L1NBA_01	0.67
	PGNBN_01	0.17
	OCCSN_01	0.69
	GGSNA_01	0.94
	FNIA_01	0.97
	MPA_T_01	0.89
	ARTA_01	0.72
	UGOA_01	0.41
	LGOA_01	0.70
	ACBL_01	0.44
	MNBL_01	0.64
	PCBL_01	0.47
	RAMH_01	0.72
	PFH_01	0.90
	TFH_01	1.00
	UFH_01	0.54
	LFH_01	0.67
	CMPOD_01	0.92
	OVERJ_02	0.09
	OVERB_02	0.14
	UIPP_02	0.97
	LIMPA_02	1.05
	IIANG_02	1.05
	MAXZ_02	0.51
	MANZ_02	0.67
	SNA_02	0.56
	SNPG_02	0.60
	SNB_02	0.56
	ANPG_02	0.33
	ANB_02	0.24
	VERJR_02	0.75
	MAXIN_02	0.46
	MANIN_02	0.93
	GONA_02	0.81
	SADA_02	0.61
	CRBA_02	0.69
	OCCFR_02	0.00
	WITSX_02	0.44
	DUMM7_02	0.53
	FPA_D_02	0.62
	CONVX_02	0.74
	ABPLN_02	0.55
	MPA_D_02	0.82
	DUMY_02	0.58

N Obs	Variable	Std Error
48	OCC_D_02	0.72
	L1OCC_02	0.81
	U1APA_02	0.88
	U1SN_02	1.04
	U1NAM_02	0.29
	U1NAA_02	0.89
	L1NBM_02	0.31
	L1NBA_02	0.76
	PGNBM_02	0.31
	OCCSN_02	0.69
	GGSNA_02	0.93
	FNIA_02	0.99
	MPA_T_02	0.89
	ARTA_02	0.76
	UGOA_02	0.40
	LGOA_02	0.69
	ACBL_02	0.44
	MNBL_02	0.77
	PCBL_02	0.54
	RAMH_02	0.80
	PFH_02	1.03
	TFH_02	0.96
	UFH_02	0.53
	LFH_02	0.66
	CNPOD_02	1.04
	OVERJ_12	0.24
	OVERB_12	0.33
	UIPP_12	1.36
	LIMPA_12	0.73
	IIANG_12	1.51
	MAXZ_12	0.59
	MANZ_12	0.78
	SNA_12	0.29
	SNPG_12	0.30
	SNB_12	0.29
	ANPG_12	0.29
	ANB_12	0.25
	VERJR_12	0.33
	MAXIN_12	0.26
	MANIN_12	0.40
	GONA_12	0.29
	SADA_12	0.28
	CRBA_12	0.29
	OCCFR_12	0.00
	WITSX_12	0.36
	DUMM7_12	0.42
	FPA_D_12	0.23
	CONVX_12	0.60
	ABPLN_12	0.48
	MPA_D_12	0.34
	DUMY_12	0.25
	OCC_D_12	0.58
	L1OCC_12	0.75
	U1APA_12	1.17
	U1SN_12	1.39

N Obs	Variable	Std Error
48	U1MAM_12	0.40
	U1MAA_12	1.40
	L1MBM_12	0.29
	L1MBA_12	0.67
	PGMBM_12	0.23
	OCCSN_12	0.60
	GGSNA_12	0.40
	FMIA_12	0.92
	MPA_T_12	0.63
	ARTA_12	0.44
	UGOA_12	0.24
	LGOA_12	0.25
	ACBL_12	0.28
	MNBL_12	0.52
	PCBL_12	0.28
	RAMM_12	0.47
	PFM_12	0.60
	TFM_12	0.71
	UFM_12	0.34
	LFM_12	0.48
	CNPOD_12	0.71
	CASECHK	16.32
	GIBBSNUM	332.38
	GIBBSXNX	0.07
	GPATTERN	3.96
	SUMM_XNX	0.27
	SC_GOOD	0.22
	SC_SOSO	0.23
	SC_POOR	0.26
	PNO_GOOD	0.22
	PNO_SOSO	0.23
	PNO_POOR	0.26
	OUT_GOOD	0.20
	OUT_SOSO	0.20
	OUT_POOR	0.20
	SC_WTED	0.42
	PNO_WTED	0.42
	OUT_WTED	0.35
	GIBBSANG	0.07
	AGREE	0.05

OBS	CASE_01	STUDY_01	TP_01	SEX_01	AGE_01
1	103	9204	1	2	12.49
2	104	9204	1	2	11.41
3	106	9204	1	2	8.38
4	108	9204	1	2	11.25
5	109	9204	1	2	13.67
6	111	9204	1	2	11.07
7	113	9204	1	2	11.87
8	114	9204	1	2	13.61
9	115	9204	1	1	10.74
10	121	9204	1	2	8.59
11	122	9204	1	1	10.5
12	123	9204	1	2	8.64
13	201	9204	1	2	10.21
14	202	9204	1	1	12.07
15	203	9204	1	1	13.08
16	204	9204	1	2	12.11
17	205	9204	1	2	7.78
18	206	9204	1	1	14.5
19	207	9204	1	1	10.18
20	208	9204	1	2	15.39
21	209	9204	1	1	11.37
22	210	9204	1	2	11.41
23	212	9204	1	2	10.19
24	213	9204	1	2	10.57
25	301	9204	1	2	10.3
26	304	9204	1	1	9.47
27	305	9204	1	2	10.68
28	306	9204	1	1	8.78
29	309	9204	1	1	9.75
30	310	9204	1	2	10.13
31	312	9204	1	2	11.7
32	314	9204	1	2	12.36
33	317	9204	1	2	10.64
34	319	9204	1	1	11.33
35	320	9204	1	1	11.93
36	323	9204	1	1	13.22
37	401	9204	1	2	9.96
38	403	9204	1	2	12.14
39	404	9204	1	2	10.35
40	406	9204	1	1	10.17
41	408	9204	1	1	11.95
42	411	9204	1	1	8.64
43	413	9204	1	2	12.93
44	414	9204	1	1	8.44
45	415	9204	1	1	11.99
46	418	9204	1	2	11.51
47	421	9204	1	2	7.59
48	422	9204	1	1	8.3

OBS	SACB_01	FRFR_01	NASX_01	NASY_01	GLABX_01
1	1	3	90.13	26.99	100.09
2	1	3	91.92	28.73	105.49
3	1	3	100.92	29.75	112.13
4	1	3	95.17	30.79	105.96
5	1	3	93.99	33.22	106.01
6	1	3	94.47	30.42	104.33
7	1	3	93.05	31.41	104.21
8	1	3	97.3	31.21	106.79
9	1	3	100.43	31.48	111.88
10	1	3	96.37	32.64	110.65
11	1	3	93.83	26.17	104.93
12	1	3	92.56	26	103.12
13	1	3	86.2	29.75	96.54
14	1	3	96.32	31.28	109.1
15	1	3	103.95	37.53	114.56
16	1	3	96.38	26.1	109.35
17	1	3	88.32	28.79	98.28
18	1	3	98.75	28.07	108.23
19	1	3	87.36	36.39	97.66
20	1	3	96.2	32.51	104.12
21	1	3	94.76	32.25	103.69
22	1	3	96.12	29.87	104.45
23	1	3	96.92	32.93	107.98
24	1	3	99.78	33.03	108.52
25	1	3	99.91	27.23	113.23
26	1	3	96.06	30.82	105.77
27	1	3	93.5	30.15	102.36
28	1	3	93.91	31.54	104.11
29	1	3	92.35	30.01	102.5
30	1	3	99.31	34.8	111.35
31	1	3	105.03	34.04	116.22
32	1	3	93.36	28.65	104.54
33	1	3	96.82	33.98	111.3
34	1	3	101.51	29.23	114.27
35	1	3	112.49	33.36	126.45
36	1	3	95.46	27.48	107.48
37	1	3	88.67	28.85	98.13
38	1	3	95.26	26.66	105.31
39	1	3	102.21	28.76	115.19
40	1	3	100.74	28.08	109.6
41	1	3	98.32	26.84	113.89
42	1	3	94.88	35.86	106.4
43	1	3	92.03	29.37	102.95
44	1	3	99.22	27.44	111.38
45	1	3	99.99	28.64	108.77
46	1	3	91.08	27.73	100.84
47	1	3	100.22	27.75	107.15
48	1	3	100.7	26.73	114.87

OBS	GLABY_01	SBRDX_01	SBRDY_01	MMOTX_01	MMOTY_01
1	57.97	97.32	21.32	118.26	-15.73
2	41.18	98.12	18.91	115.55	-16.33
3	58.13	106.16	21.79	121.86	-16.25
4	42.91	102.05	22.55	118.9	-18.76
5	48.03	103.14	25.39	128.6	-14.09
6	43.41	101.05	23.07	122.65	-18.71
7	50.81	101.7	25.64	123.24	-15.67
8	51.17	106.47	28.33	131.14	-15
9	39.37	103.94	22.73	121.25	-15.77
10	55.15	103.38	24.06	118.54	-10.85
11	40.3	101.43	21.58	117.91	-18.96
12	35.65	95.71	14.84	105.58	-23.45
13	39.52	92.22	20.69	108.29	-17.3
14	53.04	101.44	25.12	130.3	-17.47
15	50.44	114.58	32.87	136.06	-9.41
16	41.41	100.86	15.07	116.29	-23.5
17	45.58	90.21	25.88	113.98	-8.21
18	40.76	107.44	22.31	126.75	-23.4
19	45.66	92.42	31.52	116.63	-4.84
20	49.83	102.12	24.73	125.74	-19.61
21	42	100.78	21.22	121.99	-19.35
22	45.55	101.71	22.68	120.24	-18.14
23	49.15	102.88	24.66	122.58	-9.86
24	54.83	106.58	28.44	126.27	-16.69
25	54.13	106.29	18.69	121.82	-18.51
26	44.11	102.25	21.53	120.52	-21.02
27	51.92	100.91	27.36	123.61	-15.9
28	46.47	100.37	25.63	122.65	-12.14
29	47.53	100.04	20.89	115.05	-17.11
30	45.48	106.95	26.32	129.25	-7.24
31	48.17	112.11	25.32	134.48	-15.08
32	40.21	100.91	21.73	123.89	-16.95
33	47.81	106.32	25.72	128.76	-6.6
34	42.41	110.49	21.71	129.32	-19.87
35	48.62	119.64	28.49	147.88	-16.5
36	40.33	102.72	18.77	123.13	-17.24
37	39.59	93.26	20.51	110.96	-17.32
38	40.31	101.61	20.46	121.05	-12.69
39	46.11	109.63	26.1	130.97	-20.85
40	32.41	105.42	17.06	120.64	-29.44
41	44.81	106.55	21.17	123.73	-14.22
42	53.1	103	28.25	124.79	-10.32
43	44.76	101.29	24.31	122.2	-14.7
44	40.07	107.44	19.67	119.68	-24.99
45	42.32	107.51	22.16	129.89	-15.17
46	40.26	98.49	23.02	113.6	-7.2
47	40.06	101.08	27.83	125.34	-12.67
48	44.84	110.17	19.94	129.18	-19.89

OBS	USULX_01	USULY_01	ULANX_01	ULANY_01	LLANX_01
1	103.31	-33.56	107.93	-39.43	100.67
2	101.6	-31.24	106.3	-41.1	102.29
3	106.13	-31.58	108.81	-40.41	105.84
4	101.43	-36.2	106.37	-44.18	102.4
5	108.75	-34.3	112.11	-43.12	110.89
6	105.36	-38.5	107.89	-46.03	103.76
7	107.24	-34.41	109.91	-44.29	106.56
8	111.3	-35.24	113.45	-45.52	110.35
9	106.78	-34.54	109.29	-44.56	101.06
10	104.08	-27.14	107.25	-37.67	103.39
11	100.79	-33.87	102.85	-44.65	99.79
12	90.88	-38.85	93.34	-47.64	85.67
13	92.99	-32.77	94.92	-41.65	91.4
14	115.33	-34.95	120.15	-52.62	113.32
15	119.88	-25.35	124.16	-40.92	121.48
16	103.39	-37.81	110.15	-52.34	103.13
17	100.36	-22.77	105.44	-32.78	101.81
18	105.91	-42.97	108.17	-49.9	101.54
19	105.26	-31.54	109.43	-39.06	107.46
20	110.9	-36.54	119.29	-49.27	115.77
21	109.28	-34.65	113.74	-52.89	107.83
22	102.76	-36.09	104.1	-42.04	102.13
23	109.9	-28.28	115.68	-37.7	105.73
24	111.96	-36.52	111.69	-43.5	107.58
25	107.28	-36.84	111.52	-43.45	103.06
26	104.02	-41.78	105.42	-49.7	99.22
27	103.66	-38.14	106.12	-45.71	100.43
28	108.72	-34.44	110.88	-40.46	106.43
29	99.71	-36.71	99.46	-49.32	96.04
30	115.66	-27.97	120.32	-35.19	115.87
31	120.98	-30.39	124.33	-38.8	115.8
32	107.54	-39.2	109.69	-46.47	103.84
33	116.2	-30.77	119.62	-37.76	115.08
34	111.58	-37.79	115.49	-48.56	109.6
35	128.41	-39.65	131.71	-47.2	128.35
36	109.12	-38.32	111.94	-47.74	108.2
37	95.85	-32.32	98.16	-43.16	91.68
38	106.54	-35.19	108.39	-40.5	106.97
39	110.96	-44.48	112.73	-51.73	104.65
40	101.25	-41.14	101.39	-58.46	93.84
41	110.63	-31.29	112.06	-47.11	108.91
42	108.43	-34.43	110.64	-41.8	107.77
43	106.03	-33.8	107.68	-42.79	103.92
44	102.92	-36.52	106.13	-50.16	97.21
45	112.92	-36.81	117	-44.23	111.04
46	101.18	-21.54	107.88	-32.79	102.37
47	112.56	-25.46	115.44	-39.41	110.45
48	113.12	-37.85	116.72	-45.94	109.8

OBS	LLAMY_01	LSULX_01	LSULY_01	SOCHX_01	SOCHY_01
1	-58.25	90.29	-66.34	91.42	-74.04
2	-59	93.04	-67.24	92.63	-79.88
3	-52.65	98.43	-61.96	99.69	-72.48
4	-58.64	88.59	-65.52	90.7	-76.68
5	-57.68	101.17	-66.96	107.13	-83
6	-58.64	94.25	-69.55	94.73	-83.93
7	-56.06	99.51	-66.63	101.53	-78.14
8	-60.97	100.61	-71.32	100.65	-80.82
9	-66.27	94.07	-73.46	95.09	-86.83
10	-57.99	93.25	-67.02	92.17	-76.26
11	-56.47	91.61	-66.01	91.77	-76.96
12	-63.85	73.81	-70.53	71.3	-78.9
13	-53.84	82.96	-63.72	81.65	-71.3
14	-64.26	101.36	-73.52	104.03	-84.23
15	-52.47	112.02	-64.89	115.7	-78.74
16	-70.2	90.89	-82.19	90.38	-91.22
17	-45.61	88.93	-58.5	91.04	-67.13
18	-64.76	89.04	-73.81	87.97	-81.69
19	-52.83	95.86	-65.59	96.96	-75.67
20	-68.33	102.79	-81.26	102.44	-90.2
21	-66.29	95.72	-79.65	95.98	-89
22	-53.23	94.65	-61.67	92.68	-73.2
23	-55.71	94.64	-63.2	95.62	-75.3
24	-54.47	102.96	-64.05	103.05	-77.63
25	-59.51	87.75	-65.03	91.26	-76.39
26	-63.43	88.75	-72.91	86.89	-79.28
27	-60.49	91.07	-73.13	91.07	-84.37
28	-53.09	95.46	-60.22	94.43	-69.12
29	-57.56	84.41	-69.81	78.28	-80.94
30	-57.05	106.72	-68.43	108.59	-81.05
31	-57.01	104.04	-66.75	106.2	-78.88
32	-56.74	93.08	-66.22	93.94	-77.49
33	-52.08	109.94	-64.57	113.33	-76.28
34	-62.7	97.08	-70.28	101	-83.83
35	-59.78	117.02	-71.06	121.94	-82.36
36	-60.76	95.63	-73.04	94.47	-79.43
37	-53.9	82.65	-61.9	83.68	-70.84
38	-52.18	95.91	-61.65	97.08	-73.5
39	-65.81	92.19	-71.34	94.03	-82.9
40	-72.57	78.06	-79.29	74.8	-85.96
41	-60.46	97.39	-71.55	97.94	-82.18
42	-54.39	100.16	-63.89	106.98	-78.05
43	-58.79	94.87	-71.43	95.48	-79.19
44	-60.79	86.09	-68.61	86.24	-76.62
45	-60.1	97.93	-69.42	100.5	-80.7
46	-49.32	90.7	-58.41	91.73	-68.19
47	-52.8	99.62	-62.74	97.8	-76.28
48	-62.12	95.88	-67.37	95.82	-76.64

OBS	MLA_01	MFA_01	STFC_01	ULSPX_01	DUMM3_01
1	99.21	34.84	160.76	-6.84	-0.75
2	91.02	34.55	173.06	-6.97	-0.65
3	89.62	29.14	174.67	-4.2	-0.56
4	82.44	30.8	168.72	-7.6	-0.28
5	101.46	35.16	173.17	-2.64	-0.3
6	107.49	34.19	165.74	-4.95	-0.49
7	113.36	30.64	169.58	-3.99	-0.8
8	118.2	34.43	161.7	-4.21	-0.37
9	115.45	33.26	172.1	-5.46	-0.33
10	110.75	32.39	169.91	-5.72	-0.87
11	98.88	30.05	171.17	-4.4	0.12
12	114.66	31.46	162.31	-7.12	-0.13
13	105.21	31.85	166.65	-5.1	-0.36
14	101.48	38.76	163.62	-9.48	-0.45
15	94.53	28.1	172.32	-5.95	-0.83
16	88.05	31.25	171.25	-10.82	-0.44
17	90.91	40.39	166.87	-7.92	-1.17
18	111.66	34.29	154.2	-5.23	0.24
19	119	35.46	165.47	-7.56	-2.14
20	78.73	29.75	166.95	-11.05	-2.48
21	109.13	32.05	163.33	-9.98	-1.27
22	107.54	31.41	167.19	-3.94	-0.12
23	105.15	36.23	162.49	-10.15	-1.77
24	133.88	27.89	162.76	-0.72	-0.11
25	101.84	33.09	163.47	-8.34	-0.32
26	120.72	34.22	157.11	-6.49	-0.58
27	121.64	34.25	159.61	-3.55	-0.32
28	120.44	36.73	155.14	-6.16	-0.53
29	128.12	34.08	156.22	-7.24	-1.17
30	114.64	36.27	167.97	-5.78	-1.36
31	99.73	35.48	161.01	-7.52	-1.46
32	120.16	38.34	157.8	-5.72	-0.33
33	112.45	34.7	173.3	-4.41	-0.58
34	110.05	32.68	166.86	-6.04	-0.36
35	118.04	35.31	165.92	-3.24	-0.33
36	118.91	37.5	160.02	-7.45	-0.82
37	108.28	34.27	163.57	-5.94	-0.36
38	123.86	35.62	163.5	-3.45	-0.41
39	121.15	34.79	158.48	-6.03	-0.31
40	92.92	37.02	158.11	-11.78	-0.41
41	125.12	34.38	168.67	-5.68	-0.02
42	123.17	30.07	174.14	-1.63	-0.32
43	120.41	33.66	162.87	-3.63	-0.54
44	98.2	29.49	162.94	-8.8	0.05
45	120.33	36.72	157.57	-5.79	-0.53
46	97.47	30.64	168.44	-9.38	-0.88
47	105.44	36.58	160.06	-7.7	-0.66
48	105	35.82	157.68	-8.16	-0.03

OBS	LLSPX_01	DUM4_01	ULREX_01	DUM5_01	LLREX_01
1	-4.89	-0.54	-0.62	-0.07	-2.08
2	-6.09	-0.56	0.33	0.03	-2.21
3	-3.11	-0.42	3.72	0.5	1.77
4	-7.24	-0.26	0.15	0.01	-2.96
5	-2.28	-0.26	7.73	0.89	4.28
6	-3.56	-0.35	3.2	0.32	1.88
7	-2.15	-0.43	3.64	0.73	2.84
8	-4.93	-0.43	3.7	0.32	-0.53
9	-1.71	-0.1	1.4	0.08	1.64
10	-6.95	-1.06	0.52	0.08	-4.1
11	-3.78	0.1	3.44	-0.09	1.2
12	-7.22	-0.13	-2.75	-0.05	-5.12
13	-4.98	-0.35	1.41	0.1	-1.18
14	-5.08	-0.24	-3.75	-0.18	-1.46
15	-4.04	-0.56	2.76	0.38	2.02
16	-7.93	-0.32	-4.97	-0.2	-4.78
17	-6.76	-1	-1.09	-0.16	-2.53
18	-5.54	0.25	0.92	-0.04	-2.24
19	-7.54	-2.14	-2.5	-0.71	-4.51
20	-10.39	-2.33	-3.61	-0.81	-6.6
21	-6.98	-0.89	-4.49	-0.57	-3.54
22	-4.67	-0.14	4.24	0.13	0.55
23	-4.93	-0.86	-4.93	-0.86	-2.2
24	0.89	0.13	4.63	0.69	4.55
25	-5.72	-0.22	-2.92	-0.11	-2.95
26	-5.97	-0.53	-1.53	-0.14	-3.35
27	-2.26	-0.2	3.47	0.31	2.08
28	-6.33	-0.55	-2.36	-0.2	-4.24
29	-7.62	-1.23	-3.27	-0.53	-4.73
30	-4.2	-0.99	1.18	0.28	-0.6
31	-3.79	-0.74	-0.41	-0.08	0.1
32	-3.18	-0.18	-0.42	-0.02	0.38
33	-0.55	-0.07	2.3	0.3	3.72
34	-3.54	-0.21	1.15	0.07	0.77
35	-2.22	-0.23	4.25	0.44	2.59
36	-7.95	-0.87	-3.02	-0.33	-5.4
37	-2.76	-0.17	-0.39	-0.02	0.65
38	-4.88	-0.58	1.78	0.21	-1.56
39	-3.67	-0.19	-0.15	-0.01	-0.45
40	-11.94	-0.42	-4.42	-0.15	-8.42
41	-5.75	-0.02	-0.82	0	-2.74
42	0.55	0.11	6.19	1.22	5.72
43	-3.69	-0.55	3.07	0.46	0.01
44	-4.34	0.02	-2.74	0.02	-0.72
45	-4.52	-0.42	-0.16	-0.01	-1.35
46	-7.07	-0.66	-3.58	-0.34	-4.01
47	-6.35	-0.54	-1.74	-0.15	-2.57
48	-7.96	-0.03	-2.86	-0.01	-5.45

OBS	DUMM6_01	MPROX_01	DUM1_01	DUMM2_01	IGAP_01
1	-0.23	13.28	10.88	4.43	5.44
2	-0.2	13.69	11.02	-0.03	0.12
3	0.24	14.95	10.01	1.22	-0.1
4	-0.11	16.49	11.17	0.39	-0.37
5	0.49	18.11	12.1	0	-0.11
6	0.19	15.93	10.58	1.02	-0.12
7	0.57	15.1	12.76	-0.88	-1.18
8	-0.05	17.97	14.88	0.63	0.1
9	0.1	13.93	12.32	6.23	9.12
10	-0.62	13.1	11.85	3.7	4.78
11	-0.03	16.39	10.61	0.27	-0.16
12	-0.09	11.89	8.75	2.63	4.07
13	-0.08	14.34	9.87	1.07	0.06
14	-0.07	14.85	13.24	4.6	-2.46
15	0.28	16.61	14.03	0.68	0.03
16	-0.19	12.7	10.95	2.71	-0.36
17	-0.37	13.39	9.99	1.4	0.46
18	0.1	17.5	12.75	1.47	-0.33
19	-1.28	11.65	14.62	1.37	-0.09
20	-1.48	14.97	15.34	2.54	3.02
21	-0.45	13.08	11.73	2.68	-0.73
22	0.02	16.74	10.18	-0.13	0.46
23	-0.38	12.07	11.62	6.55	5.52
24	0.68	11.76	11.69	0.52	-0.09
25	-0.11	13.84	12.09	3.41	3.21
26	-0.3	14.29	11.69	2.51	-0.91
27	0.19	16.01	13.36	2.76	1.64
28	-0.37	12.49	14.02	0.76	-0.2
29	-0.77	13.65	13.31	2.7	-0.42
30	-0.14	12.71	14.43	2.04	5.72
31	0.02	13.6	10.38	6	5.97
32	0.02	14.34	12.76	2.98	-0.5
33	0.49	12.74	15.6	0.75	0.32
34	0.05	15.65	11.65	1.63	-0.54
35	0.27	16.54	15.69	2.21	-0.24
36	-0.59	13.13	14.36	1.3	0.16
37	0.04	13.93	10.8	2.33	-0.05
38	-0.18	12.37	12.69	0.69	-0.04
39	-0.02	16.9	13.25	0.12	-0.08
40	-0.3	19.37	8.13	0.89	-0.18
41	-0.01	12.64	13.37	0	0.04
42	1.12	14.81	14.78	1.12	0.03
43	0	14.54	13.55	0.87	-0.28
44	0	15.66	9.15	1.28	-0.47
45	-0.13	13.88	13.51	4.29	2.89
46	-0.38	12.27	12.1	2.86	2.21
47	-0.22	13.07	10.89	0.48	-0.15
48	-0.02	14.63	11.66	3.91	3.26

OBS	RESTO_01	CASE_02	TP_02	SEX_02	AGE_02
1	9	103	2	2	13.99
2	9	104	2	2	13.94
3	9	106	3	2	14.58
4	9	108	2	2	13.02
5	9	109	2	2	17.35
6	9	111	2	2	13.26
7	9	113	2	2	14.05
8	9	114	2	2	15.46
9	9	115	2	1	13.58
10	9	121	3	2	14.23
11	9	122	2	1	16.33
12	9	123	2	2	13.53
13	9	201	2	2	14.15
14	9	202	2	1	15.87
15	9	203	2	1	15.4
16	9	204	2	2	14.34
17	9	205	3	2	14.85
18	9	206	2	1	16.69
19	9	207	2	1	13.13
20	9	208	2	2	17.52
21	9	209	2	1	16.21
22	9	210	2	2	14.67
23	9	212	2	2	13.51
24	9	213	2	2	12.7
25	9	301	2	2	14.26
26	9	304	2	1	12.84
27	9	305	2	2	13.32
28	9	306	3	1	14.9
29	9	309	2	1	16.88
30	9	310	2	2	14.42
31	9	312	2	2	18.04
32	9	314	2	2	17.85
33	9	317	2	2	14.47
34	9	319	2	1	15.76
35	9	320	2	1	13.61
36	9	323	2	1	15.66
37	9	401	2	2	14.2
38	9	403	2	2	17.1
39	9	404	2	2	13.54
40	9	406	2	1	14.12
41	9	408	2	1	14.9
42	9	411	3	1	17.84
43	9	413	2	2	16.2
44	9	414	3	1	14.53
45	9	415	2	1	16.38
46	9	418	2	2	15.89
47	9	421	3	2	14.37
48	9	422	2	1	12.54

OBS	SACB_02	FRFR_02	NASX_02	NASY_02	GLANX_02
1	1	1	90.93	26.5	100.34
2	1	1	92.98	29.7	104.89
3	1	1	104.9	27.95	115.07
4	1	1	96.46	29.8	107.02
5	1	1	93.18	33.52	104.22
6	1	1	92.39	28.41	102.8
7	1	1	92.54	31.65	103.65
8	1	1	96.25	30.89	105.46
9	1	1	102.47	27.86	113.7
10	1	1	97.74	33.78	107.78
11	1	1	99.19	27.52	110.15
12	1	1	96.32	25.43	107.26
13	1	1	89.36	28.14	101.5
14	1	1	98.45	30.92	112.42
15	1	1	105.57	37.8	115.39
16	1	1	96	23.08	110.67
17	1	1	92.44	28.01	102.59
18	1	1	101.67	29.35	111.15
19	1	1	90.86	35.06	100.37
20	1	1	96.68	32.5	104.22
21	1	1	97.98	25.41	111.29
22	1	1	98.59	29.3	106.97
23	1	1	100.14	32.45	110.59
24	1	1	100.43	31.22	110.29
25	1	1	102.8	27.02	114.86
26	1	1	96.89	30.94	105.71
27	1	1	94.87	29.77	104.41
28	1	1	95.67	29.92	104.03
29	1	1	92.29	33.03	99.29
30	1	1	98.39	34.61	108.96
31	1	1	104.59	32.23	116.26
32	1	1	92.76	28.24	104.36
33	1	1	97.08	34.38	110.98
34	1	1	101.99	30.36	114.13
35	1	1	115.3	30.76	127.33
36	1	1	98.5	26.95	111.04
37	1	1	92.09	29.91	101.32
38	1	1	97.76	25.35	108.32
39	1	1	103.68	28.52	115.35
40	1	1	101.93	26.92	110.23
41	1	1	100.7	26.19	112.84
42	1	1	99.66	32.68	111.32
43	1	1	93.42	28.96	104.06
44	1	1	104.74	24	117.06
45	1	1	103.73	27.34	112.49
46	1	1	93.57	28.31	103.31
47	1	1	103.46	26.23	113.72
48	1	1	103.93	26.02	115.83

OBS	GLABY_02	SBRDX_02	SBRDY_02	MNOTX_02	MNOTY_02
1	40.76	98.47	22.73	120.84	-17.45
2	41.16	98.35	20.62	116.67	-17.35
3	50.27	111.36	21.32	131.22	-21.13
4	42.24	103.03	22.12	119.72	-22.72
5	45.51	101.75	26.71	128.99	-15.31
6	43.4	98.7	21.05	119.93	-21.46
7	51.57	101.98	27.01	125.12	-16.79
8	46.68	105.39	26.46	130.24	-17.49
9	39.04	108.65	15.84	124.02	-23.72
10	50.03	104.33	24.96	123.04	-15.13
11	40.14	107.26	22.65	130.78	-27.38
12	36.75	99.51	13.39	110.96	-31.31
13	39.5	96.95	20.37	114.48	-24.7
14	45.23	107.24	27.51	139.44	-21.28
15	53.8	116.53	33.81	141.91	-11.83
16	42.21	100.65	12.47	115.44	-25.78
17	41.26	98.71	23.28	121.5	-20.21
18	37.68	110.62	22.49	132.87	-25.85
19	45.25	100.92	28.05	126.99	-13.67
20	45.7	102.4	24.16	126.01	-21.34
21	42.53	109.3	17.12	136.4	-24.59
22	43.34	104.74	22.91	125.92	-23.13
23	49.28	106.48	22.47	128.31	-16.96
24	52.3	107.69	29.47	127.48	-22.08
25	44.62	108.97	15.59	125.87	-24.6
26	43.92	103.38	24.3	125.42	-25.04
27	43.06	102.81	27.36	126.14	-17.51
28	43.62	102.22	24.4	125.83	-19.37
29	45.03	100.66	29.33	124.84	-20.86
30	48.52	106.62	25.79	133.12	-8.47
31	49.31	112.55	24.01	137.35	-20.86
32	39.57	100.31	22.05	124.84	-17.72
33	48.21	106.98	26.46	130.47	-8.89
34	44.47	110.92	23.47	131.28	-21.81
35	44.99	126	21.23	151.3	-22.78
36	38.61	106.98	18.44	128.12	-23.16
37	41.47	95.85	24.84	118.38	-23.96
38	38.01	104.43	17.04	124.56	-20.89
39	44.17	111.83	23.32	133.94	-25.25
40	31.71	107.38	19.52	125.54	-35.82
41	39.52	107.94	22.22	128.41	-17.39
42	47.87	107.85	27.12	138.9	-21.23
43	46.17	102.54	23.52	124.57	-16.88
44	41.97	113.96	20.21	130.04	-33.52
45	44.55	112.97	22.45	139.95	-20.88
46	40.91	101.35	21.88	119.68	-11.53
47	38.6	110.28	20.88	131.43	-18.42
48	41.37	113.42	20.26	136.31	-24.3

OBS	USULX_02	USULY_02	ULAMX_02	ULAMY_02	LLAMX_02
1	102.54	-36.51	105.49	-42.39	100.83
2	101.44	-32.3	105.35	-44.66	100.12
3	112.46	-39.65	116.22	-48.58	111.64
4	99.13	-41.07	103.8	-48.3	98.61
5	107.36	-37.04	110.06	-46.03	108.14
6	100.76	-41	103.28	-47.6	100.51
7	106.79	-33.55	109.54	-44.66	107.86
8	107.68	-37.71	109.21	-47.1	107.76
9	105.81	-42.26	106.86	-53.52	103.28
10	103.37	-35.76	106.51	-43.17	102.34
11	108.49	-46.2	111.51	-55.17	107.4
12	90.95	-48.98	91.88	-55.73	85.02
13	94.52	-38.64	97.25	-47.94	91.94
14	118.47	-47.58	123.83	-55.85	119.08
15	122.14	-29.48	124.62	-45.8	121.21
16	100.99	-39.69	105.51	-53	100.69
17	100.05	-34.11	104.59	-46.21	99.23
18	108.95	-45.86	110.71	-53.8	103.71
19	105.9	-43.39	111.05	-50.85	107.92
20	110.54	-39.44	117.19	-51.89	111.72
21	116.73	-47.13	122.82	-59.85	115.01
22	102.06	-40.6	104.2	-47.06	100.55
23	109.47	-40.01	110.29	-47.86	105.72
24	110.07	-40.93	112.03	-46.97	106.95
25	105.16	-41.76	107.31	-49.82	101.19
26	103.46	-45.86	105.7	-53.24	100.72
27	103.18	-41.71	104.83	-49.75	98.38
28	107.71	-40.58	110.68	-46.94	107.44
29	100.76	-46.42	102.36	-52.03	97.86
30	117.01	-31.21	119.62	-39.7	117.4
31	119.11	-37.18	121.59	-44.78	113.71
32	105.53	-40.66	107.9	-47.72	104.04
33	115.33	-33.27	118.6	-39.37	117.78
34	110.97	-39.94	115.55	-49.86	110.26
35	128.41	-45.67	131.81	-53.96	128.72
36	109.02	-44.64	111.89	-53.27	108.09
37	95.53	-41.38	98.05	-49.06	93.12
38	101.85	-42.62	103.43	-48.02	102.43
39	109.88	-46.53	111.86	-54.36	105.34
40	101.1	-46.66	100.76	-62.57	94.02
41	108.08	-45.53	109.02	-50.92	105.66
42	112.21	-46.52	113.46	-54.63	112.82
43	103.29	-37.09	104.16	-44	100.23
44	107	-51.25	110.69	-60.77	102.29
45	116.75	-46.69	119.96	-52.22	114.82
46	102.78	-30.07	106.62	-40.57	97.14
47	112.74	-35.76	113.97	-44.72	112.56
48	116.23	-42.85	119.6	-50.77	112.52

OBS	LLAMY_02	LSULX_02	LSULY_02	SOCHX_02	SOCHY_02
1	-55.96	92.54	-65.24	93.16	-74.55
2	-63.9	90.54	-71.22	89.21	-85.44
3	-62.2	102.59	-71.96	106.35	-85.31
4	-62.74	86.19	-72.18	86.64	-84.57
5	-61.48	99.25	-70.39	105.94	-86.62
6	-62.17	89.5	-73.44	89.08	-87.48
7	-57.85	100.99	-67.92	103.84	-78.73
8	-63.8	98.66	-74.65	98.37	-88.79
9	-70.32	92.55	-80.32	93.54	-92.6
10	-66.57	90.15	-76.7	90.04	-86.62
11	-68.48	99.46	-81.51	99.28	-93.04
12	-68.96	73.09	-78.1	71	-89.99
13	-64.14	81.91	-75.05	82.41	-85.78
14	-72.62	106.07	-84.21	109.17	-95.93
15	-57.47	111.19	-68.07	115.28	-83.62
16	-68.17	92.4	-78.51	92.69	-90.28
17	-66.93	85.51	-75.96	87.05	-83.61
18	-67.57	93.02	-77.07	93.39	-88.74
19	-67.15	94.83	-81.14	97.64	-94.2
20	-66.87	101.66	-79.99	102.24	-90.35
21	-73.53	104.43	-90.02	107.84	-101.59
22	-58.77	94.18	-65.87	95.57	-79.97
23	-59.72	96.74	-70.25	98.41	-82.21
24	-58.7	97.69	-70.45	100.01	-84.94
25	-62.29	89.44	-71.58	92.24	-84.46
26	-67.58	87.36	-78.58	85.08	-86.82
27	-63.67	89.57	-75.83	90.39	-89.55
28	-62.13	95.16	-69.69	94.83	-78.82
29	-63.85	84.01	-81.01	79.99	-92.77
30	-57.56	109.47	-70.52	111.5	-81.96
31	-61.32	102.39	-72.38	104.72	-83.31
32	-58.42	93.88	-68.28	95.56	-80.67
33	-52.71	111.76	-65.59	116.7	-78.68
34	-63.7	99.75	-74.52	103.58	-92.51
35	-67.92	117.31	-79.22	121.91	-91.16
36	-67.39	94.07	-79.64	93.64	-89.32
37	-65.22	84.51	-73.88	86.31	-87.1
38	-58.19	93.46	-70.39	96.77	-82.76
39	-67.29	93.1	-75.59	96.13	-88.37
40	-76.25	76.72	-89.3	74.27	-96.62
41	-65.66	97.5	-78.34	100.13	-93.04
42	-68.42	107.49	-80.6	114.69	-97.56
43	-60.4	91.29	-72.76	92.47	-81.7
44	-71.92	88.19	-82.4	89.71	-93.63
45	-66.61	101.7	-78.12	105.84	-91.66
46	-60.43	86.71	-71.91	89.52	-83.39
47	-58.89	105.05	-71.31	106.88	-83.74
48	-66.44	98.87	-72.99	98.48	-84.12

OBS	MLA_02	MFA_02	STFC_02	ULSPX_02	DUMM3_02
1	112.98	34.37	161.79	-4.09	-0.47
2	95.63	34.78	169.24	-6.9	-0.81
3	87.08	30.12	173.28	-4.95	-0.55
4	89.71	31.67	167.69	-6.58	-0.23
5	107.22	34.96	173.24	-1.98	-0.25
6	100	33.97	166.13	-4.43	-0.33
7	104.73	29.77	172.53	-3.06	-0.63
8	121.54	35.57	163.77	-1.83	-0.18
9	123.78	30.57	170.22	-3.38	-0.03
10	113.79	33.4	164.96	-4.35	-0.69
11	101.74	32.45	166.98	-4.1	0.04
12	123.51	31.64	162.67	-4.05	-0.03
13	96.15	31.68	168.81	-4.73	-0.18
14	106.5	37.36	161.65	-6.46	-0.32
15	98.47	31.61	168.04	-4.72	-0.65
16	95.35	30.15	177.61	-6.83	-0.02
17	95.04	36.02	164.28	-7.11	-0.84
18	116.9	35.37	155.95	-3	0.08
19	121.91	33.79	161.33	-5.09	-1.3
20	90.66	30.05	166.56	-9.33	-2.12
21	102.34	36.64	165.64	-8.12	-0.26
22	107.76	31.85	169.62	-1.87	-0.04
23	129.48	35.56	162.51	-2.43	-0.43
24	129.19	27.13	163.68	-2.24	-0.27
25	114.48	35.32	167.11	-3.91	-0.14
26	110.63	35.53	154.21	-5.69	-0.46
27	120.24	34.38	160.73	-2.4	-0.2
28	112.75	35.4	157.24	-5.36	-0.24
29	140.53	35.08	150.58	-3.54	-0.76
30	131.36	38.16	164.85	-2.73	-0.62
31	111.19	35.55	159.31	-5.02	-0.86
32	128.17	37.86	159.99	-3.04	-0.14
33	110.96	32.33	177.38	-2.65	-0.37
34	101.6	31.15	170.97	-4.91	-0.36
35	115.14	33.93	164.44	-2.29	-0.2
36	115.66	36.04	160.56	-5.91	-0.53
37	112.35	34.63	165.95	-1.74	-0.13
38	128.43	35.12	166.71	1.49	0.15
39	121.74	35.13	160.21	-3.27	-0.11
40	95.08	36.1	157.74	-8.42	-0.09
41	123.13	34.75	169.8	-0.79	0
42	121.94	33.06	172.38	3.56	0.51
43	128.1	35.36	162.06	-0.91	-0.13
44	93.72	30.2	164.47	-8.19	0.64
45	131.91	37.11	155.92	-2.21	-0.19
46	112.11	36.5	165.23	-6.52	-0.61
47	116.46	32.26	171.94	-1.73	-0.12
48	120.1	36.85	153.13	-6.14	0.04

OBS	LLSPX_02	DUMM4_02	ULREX_02	DUMM5_02	LLREX_02
1	-2.92	-0.34	3.45	0.4	1.42
2	-6.1	-0.71	0.32	0.04	-2.34
3	-2.18	-0.24	4.56	0.5	3.83
4	-5.62	-0.2	2.28	0.08	-0.31
5	-0.87	-0.11	9.38	1.16	6.18
6	-5.29	-0.4	4.6	0.34	0.41
7	-2.41	-0.49	6.46	1.32	3.39
8	-4.05	-0.4	8.16	0.81	1.86
9	-4.07	-0.03	3.99	0.03	0.12
10	-6.93	-1.1	3.87	0.61	-3.29
11	-2.85	0.03	5.92	-0.06	3.64
12	-3.7	-0.03	2.47	0.02	0.3
13	-3.75	-0.14	5.13	0.2	1.87
14	-5.15	-0.26	1.63	0.08	-0.46
15	-2.73	-0.37	4.94	0.68	3.97
16	-4.44	-0.02	0.33	0	-0.2
17	-7.68	-0.91	2.97	0.35	-3.32
18	-1.64	0.04	4.54	-0.12	2.93
19	-5.19	-1.32	2.63	0.67	-0.47
20	-6.06	-1.38	-1.85	-0.42	-1.51
21	-2.54	-0.08	0.51	0.02	3.28
22	-0.63	-0.01	9.04	0.18	6.41
23	-1.09	-0.19	4.2	0.74	3.26
24	-0.13	-0.02	4.82	0.57	4.78
25	-1.81	-0.06	4.48	0.15	3.57
26	-7.23	-0.59	1.38	0.11	-3.25
27	-0.06	0	5.62	0.46	5.19
28	-7.19	-0.32	0.79	0.03	-4.01
29	-4.72	-1.01	3.51	0.75	0.2
30	-2.83	-0.64	4.62	1.05	1.36
31	-2.19	-0.37	3.58	0.61	2.74
32	-2.21	-0.1	3.06	0.14	1.91
33	-1.58	-0.22	6.01	0.83	4.15
34	-1.89	-0.14	4.88	0.36	4.75
35	-2.07	-0.18	6.32	0.55	3.3
36	-7.06	-0.63	0.56	0.05	-3.18
37	-1.06	-0.08	7.88	0.59	4.47
38	0.08	0.01	9.38	0.97	5.64
39	-1.48	-0.05	4.73	0.15	3.48
40	-8.96	-0.1	2.24	0.03	-2.59
41	-0.27	0	6.84	-0.03	4.7
42	3.46	0.49	15.56	2.22	11.64
43	-1.72	-0.25	7.53	1.11	3.01
44	-4.17	0.33	1.01	-0.08	1.88
45	-1.42	-0.13	5.1	0.45	3.23
46	-1.9	-0.18	0.9	0.08	2.1
47	-2.28	-0.15	7.77	0.52	3.75
48	-6.09	0.04	-0.03	0	-2.84

OBS	DUMM6_02	NPROX_02	DUM1_02	DUMM2_02	IGAP_02
1	0.16	16.03	12.33	0.02	0.15
2	-0.27	14.56	12.27	0.8	0.41
3	0.42	17.62	10.85	0.53	-0.1
4	-0.01	18.08	10.79	-0.03	-0.15
5	0.76	19.96	12.86	-0.21	0.37
6	0.03	17.13	10.43	-0.5	0.09
7	0.69	17.33	11.91	0	0
8	0.18	19.36	13.66	0.64	4.53
9	0	16.3	13.16	2.28	4.43
10	-0.52	16.33	12.68	1.23	7.54
11	-0.04	19.39	9.16	2.4	0.02
12	0	15.78	9.51	-0.18	0.18
13	0.07	17.82	7.99	3.39	2.69
14	-0.02	17.64	13.35	1.65	0.06
15	0.54	19.62	15.36	-0.05	0.03
16	0	14.05	10.45	2.34	-0.05
17	-0.39	19.15	9.79	2.23	6.88
18	-0.08	19.28	13.49	0.98	-0.22
19	-0.12	16.71	16.67	-0.7	0.09
20	-0.34	15.21	13.71	2.19	-0.47
21	0.1	18.08	13.66	5.57	-2.05
22	0.13	20.6	9.4	1.55	0.99
23	0.58	15.11	12.18	0.38	-0.18
24	0.57	14.48	12.81	0	-0.08
25	0.12	18.13	11.91	2.94	-1.6
26	-0.26	17.57	11.26	4.48	-1.44
27	0.43	18.3	14.36	1	-0.38
28	-0.18	15.87	13.79	2.41	1.8
29	0.04	19.39	17.85	1.66	-0.05
30	0.31	14.19	16.11	1.31	0.74
31	0.47	16.51	11.22	6.04	2.05
32	0.09	15.29	13.55	0.47	0.11
33	0.57	14.82	14.77	0.01	-0.07
34	0.35	17.77	11.26	0.96	0.03
35	0.29	18.3	14.46	1.65	-0.01
36	-0.28	16.71	15.03	0.47	-0.12
37	0.34	18	9.82	1.54	3.76
38	0.58	16.05	11.59	0.5	0.11
39	0.11	19.14	12.35	3.06	-1.54
40	-0.03	22.87	7.45	1.76	-0.43
41	-0.02	16.41	13.88	0.71	-0.16
42	1.66	20.91	14.7	0.4	-0.03
43	0.44	17.86	15.19	1.81	-0.35
44	-0.15	20.95	9.34	4.69	-1.61
45	0.28	17.27	15.3	1.89	-0.12
46	0.2	15.57	13.68	7.08	4.78
47	0.25	17.43	13.66	0.42	0.09
48	0.02	16.75	12.83	1.29	0.15

OBS	RESTO_02	CASE_12	TP_12	SEX_12	AGE_12
1	9	0	1	0	1.5
2	9	0	1	0	2.53
3	9	0	2	0	6.21
4	9	0	1	0	1.76
5	9	0	1	0	3.68
6	9	0	1	0	2.19
7	9	0	1	0	2.18
8	9	0	1	0	1.85
9	9	0	1	0	2.84
10	9	0	2	0	5.64
11	9	0	1	0	5.83
12	9	0	1	0	4.89
13	9	0	1	0	3.95
14	9	0	1	0	3.81
15	9	0	1	0	2.32
16	9	0	1	0	2.22
17	9	0	2	0	7.07
18	9	0	1	0	2.19
19	9	0	1	0	2.96
20	9	0	1	0	2.13
21	9	0	1	0	4.84
22	9	0	1	0	3.27
23	9	0	1	0	3.32
24	9	0	1	0	2.13
25	9	0	1	0	3.96
26	9	0	1	0	3.36
27	9	0	1	0	2.64
28	9	0	2	0	6.12
29	9	0	1	0	7.13
30	9	0	1	0	4.29
31	9	0	1	0	6.34
32	9	0	1	0	5.69
33	9	0	1	0	3.83
34	9	0	1	0	4.43
35	9	0	1	0	1.69
36	9	0	1	0	2.44
37	9	0	1	0	4.24
38	9	0	1	0	4.95
39	9	0	1	0	3.18
40	9	0	1	0	3.95
41	9	0	1	0	2.96
42	9	0	2	0	9.2
43	9	0	1	0	3.26
44	9	0	2	0	6.08
45	9	0	1	0	4.39
46	9	0	1	0	4.37
47	9	0	2	0	6.78
48	9	0	1	0	4.23

OBS	SACB_12	FRFR_12	NASX_12	NASY_12	GLABX_12
1	0	-2	0.81	-0.5	0.24
2	0	-2	1.06	0.97	-0.6
3	0	-2	3.98	-1.79	2.94
4	0	-2	1.29	-0.99	1.06
5	0	-2	-0.81	0.3	-1.79
6	0	-2	-2.08	-2.01	-1.53
7	0	-2	-0.51	0.25	-0.56
8	0	-2	-1.05	-0.32	-1.34
9	0	-2	2.04	-3.62	1.81
10	0	-2	1.37	1.14	-2.87
11	0	-2	5.36	1.35	5.22
12	0	-2	3.76	-0.57	4.14
13	0	-2	3.16	-1.6	4.95
14	0	-2	2.12	-0.36	3.32
15	0	-2	1.62	0.27	0.83
16	0	-2	-0.38	-3.02	1.32
17	0	-2	4.13	-0.78	4.31
18	0	-2	2.92	1.28	2.91
19	0	-2	3.5	-1.33	2.71
20	0	-2	0.48	-0.02	0.09
21	0	-2	3.22	-6.84	7.61
22	0	-2	2.47	-0.57	2.52
23	0	-2	3.22	-0.48	2.61
24	0	-2	0.65	-1.81	1.77
25	0	-2	2.89	-0.21	1.63
26	0	-2	0.82	0.12	-0.06
27	0	-2	1.37	-0.38	2.06
28	0	-2	1.76	-1.62	-0.08
29	0	-2	-0.07	3.02	-3.21
30	0	-2	-0.93	-0.19	-2.39
31	0	-2	-0.44	-1.81	0.03
32	0	-2	-0.61	-0.4	-0.19
33	0	-2	0.26	0.39	-0.33
34	0	-2	0.48	1.13	-0.15
35	0	-2	2.81	-2.6	0.88
36	0	-2	3.04	-0.53	3.56
37	0	-2	3.42	1.06	3.19
38	0	-2	2.5	-1.31	3.01
39	0	-2	1.47	-0.24	0.17
40	0	-2	1.19	-1.15	0.63
41	0	-2	2.38	-0.66	-1.04
42	0	-2	4.78	-3.17	4.92
43	0	-2	1.39	-0.41	1.11
44	0	-2	5.52	-3.44	5.67
45	0	-2	3.74	-1.3	3.72
46	0	-2	2.49	0.58	2.47
47	0	-2	3.23	-1.52	6.57
48	0	-2	3.23	-0.71	0.96

OBS	GLABY_12	SBRDX_12	SBRDY_12	MNOTX_12	MNOTY_12
1	-17.21	1.16	1.41	2.58	-1.72
2	-0.02	0.22	1.71	1.12	-1.02
3	-7.87	5.2	-0.47	9.36	-4.88
4	-0.68	0.98	-0.43	0.82	-3.96
5	-2.51	-1.39	1.32	0.4	-1.22
6	-0.01	-2.36	-2.02	-2.72	-2.76
7	0.76	0.28	1.37	1.88	-1.12
8	-4.49	-1.08	-1.88	-0.89	-2.49
9	-0.33	4.71	-6.89	2.77	-7.95
10	-5.12	0.95	0.9	4.5	-4.28
11	-0.16	5.83	1.07	12.87	-8.42
12	1.1	3.79	-1.45	5.38	-7.86
13	-0.02	4.73	-0.32	6.19	-7.4
14	-7.8	5.8	2.4	9.14	-3.81
15	3.36	1.95	0.94	5.85	-2.42
16	0.8	-0.21	-2.6	-0.85	-2.29
17	-4.32	8.5	-2.59	7.51	-12
18	-3.08	3.18	0.18	6.12	-2.45
19	-0.41	8.51	-3.47	10.36	-8.83
20	-4.13	0.28	-0.57	0.27	-1.73
21	0.53	8.52	-4.1	14.41	-5.24
22	-2.21	3.04	0.23	5.68	-4.99
23	0.13	3.6	-2.18	5.74	-7.1
24	-2.53	1.11	1.03	1.21	-5.39
25	-9.52	2.68	-3.1	4.05	-6.08
26	-0.18	1.13	2.77	4.89	-4.02
27	-8.87	1.9	0	2.53	-1.61
28	-2.84	1.86	-1.22	3.18	-7.23
29	-2.49	0.62	8.44	9.79	-3.75
30	3.03	-0.34	-0.53	3.88	-1.23
31	1.14	0.44	-1.32	2.87	-5.79
32	-0.64	-0.61	0.32	0.95	-0.78
33	0.4	0.66	0.74	1.71	-2.28
34	2.06	0.43	1.77	1.96	-1.94
35	-3.64	6.37	-7.26	3.42	-6.28
36	-1.72	4.27	-0.33	4.99	-5.92
37	1.88	2.58	4.34	7.41	-6.64
38	-2.3	2.82	-3.43	3.52	-8.19
39	-1.94	2.21	-2.79	2.97	-4.39
40	-0.7	1.96	2.46	4.9	-6.37
41	-5.29	1.39	1.05	4.69	-3.18
42	-5.23	4.85	-1.12	14.12	-10.91
43	1.42	1.25	-0.79	2.37	-2.18
44	1.89	6.52	0.54	10.35	-8.52
45	2.23	5.46	0.29	10.07	-5.7
46	0.66	2.86	-1.14	6.08	-4.33
47	-1.46	9.2	-6.95	6.09	-5.75
48	-3.46	3.25	0.32	7.13	-4.41

OBS	USULX_12	USULY_12	ULANX_12	ULANY_12	LLANX_12
1	-0.76	-2.95	-2.44	-2.96	0.16
2	-0.15	-1.05	-0.95	-3.55	-2.17
3	6.33	-8.06	7.41	-8.17	5.8
4	-2.29	-4.88	-2.57	-4.12	-3.78
5	-1.39	-2.74	-2.05	-2.92	-2.75
6	-4.6	-2.5	-4.62	-1.57	-3.24
7	-0.45	0.85	-0.38	-0.37	1.3
8	-3.62	-2.47	-4.24	-1.58	-2.59
9	-0.97	-7.71	-2.43	-8.96	2.22
10	-0.7	-8.62	-0.74	-5.5	-1.04
11	7.7	-12.33	8.66	-10.52	7.61
12	0.07	-10.13	-1.46	-8.09	-0.64
13	1.52	-5.87	2.33	-6.29	0.54
14	3.14	-12.63	3.68	-3.23	5.75
15	2.26	-4.13	0.46	-4.88	-0.27
16	-2.41	-1.88	-4.63	-0.66	-2.45
17	-0.31	-11.33	-0.85	-13.43	-2.58
18	3.04	-2.89	2.54	-3.9	2.17
19	0.64	-11.86	1.62	-11.8	0.46
20	-0.36	-2.9	-2.1	-2.62	-4.05
21	7.45	-12.48	9.07	-6.95	7.18
22	-0.7	-4.51	0.1	-5.02	-1.58
23	-0.42	-11.73	-5.38	-10.16	0
24	-1.89	-4.41	0.34	-3.46	-0.63
25	-2.12	-4.92	-4.21	-6.38	-1.87
26	-0.56	-4.08	0.27	-3.55	1.5
27	-0.48	-3.57	-1.29	-4.04	-2.04
28	-1.02	-6.14	-0.2	-6.48	1.01
29	1.05	-9.71	2.9	-2.71	1.82
30	1.35	-3.24	-0.7	-4.51	1.54
31	-1.87	-6.8	-2.75	-5.98	-2.08
32	-2.01	-1.46	-1.8	-1.25	0.2
33	-0.87	-2.5	-1.02	-1.6	2.71
34	-0.62	-2.15	0.06	-1.31	0.65
35	0	-6.03	0.1	-6.76	0.37
36	-0.1	-6.32	-0.05	-5.53	-0.1
37	-0.32	-9.05	-0.11	-5.9	1.44
38	-4.69	-7.42	-4.96	-7.52	-4.54
39	-1.09	-2.05	-0.87	-2.63	0.69
40	-0.16	-5.52	-0.63	-4.1	0.18
41	-2.55	-14.24	-3.04	-3.81	-3.25
42	3.78	-12.09	2.82	-12.83	5.05
43	-2.73	-3.29	-3.52	-1.21	-3.69
44	4.08	-14.73	4.56	-10.61	5.07
45	3.83	-9.88	2.95	-7.99	3.78
46	1.6	-8.52	-1.26	-7.79	-5.23
47	0.18	-10.3	-1.46	-5.3	2.11
48	3.11	-5	2.87	-4.84	2.71

OBS	LLANY_12	LSULX_12	LSULY_12	SOCNX_12	SOCNY_12
1	2.28	2.26	1.1	1.74	-0.51
2	-4.9	-2.5	-3.98	-3.42	-5.56
3	-9.55	4.17	-10	6.66	-12.83
4	-4.1	-2.4	-6.65	-4.06	-7.89
5	-3.8	-1.92	-3.43	-1.19	-3.62
6	-3.54	-4.75	-3.88	-5.65	-3.54
7	-1.79	1.48	-1.29	2.31	-0.58
8	-2.83	-1.94	-3.33	-2.28	-7.97
9	-4.05	-1.52	-6.86	-1.55	-5.77
10	-8.58	-3.1	-9.68	-2.13	-10.35
11	-12.01	7.84	-15.5	7.51	-16.08
12	-5.11	-0.72	-7.57	-0.3	-11.09
13	-10.3	-1.05	-11.33	0.76	-14.48
14	-8.37	4.71	-10.69	5.14	-11.7
15	-5.01	-0.83	-3.18	-0.42	-4.88
16	2.03	1.51	3.69	2.31	0.94
17	-21.32	-3.42	-17.46	-3.99	-16.48
18	-2.81	3.98	-3.26	5.43	-7.05
19	-14.32	-1.03	-15.55	0.67	-18.53
20	1.46	-1.13	1.27	-0.2	-0.15
21	-7.24	8.71	-10.37	11.85	-12.59
22	-5.53	-0.47	-4.2	2.89	-6.77
23	-4	2.1	-7.05	2.79	-6.91
24	-4.22	-5.47	-6.4	-3.03	-7.31
25	-2.78	1.69	-6.55	0.99	-8.08
26	-4.16	-1.39	-5.67	-1.81	-7.54
27	-3.17	-1.5	-2.71	-0.48	-5.17
28	-9.04	-0.31	-9.47	0.39	-9.71
29	-6.29	-0.39	-11.2	1.72	-11.83
30	-0.51	2.75	-2.09	2.91	-0.9
31	-4.31	-1.64	-5.63	-1.48	-4.43
32	-1.68	0.8	-2.06	1.62	-3.19
33	-0.62	1.82	-1.02	3.37	-2.4
34	-0.99	2.66	-4.24	2.58	-8.68
35	-8.14	0.28	-8.16	-0.03	-8.8
36	-6.64	-1.56	-6.6	-0.83	-9.89
37	-11.32	1.87	-11.98	2.63	-16.26
38	-6.01	-2.46	-8.74	-0.31	-9.26
39	-1.48	0.91	-4.26	2.09	-5.48
40	-3.68	-1.34	-10	-0.52	-10.66
41	-5.19	0.11	-6.79	2.19	-10.86
42	-14.03	7.33	-16.71	7.72	-19.51
43	-1.61	-3.58	-1.33	-3.01	-2.51
44	-11.13	2.1	-13.8	3.47	-17.01
45	-6.51	3.77	-8.7	5.34	-10.96
46	-11.1	-3.98	-13.5	-2.22	-15.2
47	-6.1	5.43	-8.57	9.07	-7.46
48	-4.32	2.99	-5.62	2.66	-7.48

OBS	NLA_12	NFA_12	STFC_12	ULSPX_12	DUMMS_12
1	13.77	-0.47	1.03	2.75	0.28
2	4.61	0.23	-3.83	0.06	-0.16
3	-2.54	0.98	-1.39	-0.75	0.02
4	7.27	0.87	-1.04	1.03	0.05
5	5.76	-0.2	0.07	0.66	0.06
6	-7.49	-0.22	0.39	0.52	0.16
7	-8.62	-0.87	2.94	0.93	0.17
8	3.34	1.14	2.08	2.38	0.19
9	8.33	-2.69	-1.88	2.08	0.3
10	3.04	1.01	-4.94	1.38	0.18
11	2.86	2.4	-4.18	0.3	-0.08
12	8.85	0.18	0.37	3.07	0.1
13	-9.06	-0.17	2.16	0.37	0.18
14	5.03	-1.4	-1.96	3.01	0.13
15	3.94	3.51	-4.28	1.23	0.18
16	7.3	-1.1	6.37	3.99	0.41
17	4.13	-4.37	-2.59	0.81	0.33
18	5.23	1.08	1.75	2.23	-0.16
19	2.9	-1.67	-4.14	2.47	0.85
20	11.93	0.3	-0.39	1.73	0.36
21	-6.8	4.59	2.31	1.87	1.02
22	0.22	0.44	2.43	2.07	0.08
23	24.33	-0.67	0.02	7.72	1.34
24	-4.7	-0.76	0.91	-1.52	-0.16
25	12.64	2.23	3.64	4.43	0.19
26	-10.08	1.31	-2.9	0.8	0.12
27	-1.4	0.13	1.13	1.15	0.12
28	-7.68	-1.33	2.1	0.79	0.3
29	12.41	1	-5.63	3.71	0.42
30	16.72	1.89	-3.12	3.05	0.74
31	11.46	0.07	-1.7	2.51	0.6
32	8.01	-0.48	2.19	2.68	0.19
33	-1.48	-2.37	4.09	1.76	0.22
34	-8.44	-1.53	4.11	1.13	0
35	-2.9	-1.38	-1.48	0.94	0.13
36	-3.25	-1.46	0.55	1.54	0.29
37	4.07	0.36	2.38	4.2	0.22
38	4.57	-0.5	3.2	4.93	0.56
39	0.59	0.34	1.73	2.76	0.2
40	2.17	-0.92	-0.37	3.36	0.32
41	-1.99	0.37	1.12	4.89	0.02
42	-1.23	2.99	-1.76	5.19	0.83
43	7.7	1.7	-0.81	2.72	0.41
44	-4.48	0.71	1.53	0.6	0.6
45	11.57	0.39	-1.65	3.58	0.34
46	14.64	5.86	-3.21	2.85	0.27
47	11.03	-4.32	11.87	5.97	0.54
48	15.11	1.03	-4.55	2.02	0.07

OBS	LLSPX_12	DUM94_12	ULREX_12	DUM95_12	LLREX_12
1	1.97	0.2	4.06	0.46	3.5
2	-0.01	-0.15	-0.01	0.01	-0.13
3	0.94	0.18	0.84	0.01	2.07
4	1.62	0.07	2.12	0.07	2.66
5	1.41	0.16	1.65	0.27	1.9
6	-1.73	-0.04	1.4	0.03	-1.47
7	-0.26	-0.06	2.83	0.6	0.55
8	0.88	0.03	4.45	0.48	2.39
9	-2.37	0.07	2.6	-0.05	-1.52
10	0.02	-0.04	3.35	0.53	0.81
11	0.93	-0.08	2.47	0.04	2.44
12	3.52	0.1	5.22	0.07	5.42
13	1.23	0.21	3.72	0.1	3.05
14	-0.07	-0.01	5.38	0.26	1
15	1.31	0.19	2.18	0.29	1.95
16	3.5	0.31	5.3	0.2	4.59
17	-0.92	0.09	4.06	0.51	-0.79
18	3.9	-0.21	3.61	-0.08	5.17
19	2.35	0.82	5.13	1.38	4.04
20	4.33	0.95	1.76	0.39	5.09
21	4.44	0.81	5	0.59	6.81
22	4.05	0.13	4.8	0.05	5.85
23	3.84	0.67	9.13	1.6	5.46
24	-1.02	-0.15	0.19	-0.12	0.22
25	3.91	0.16	7.4	0.27	6.52
26	-1.27	-0.05	2.91	0.25	0.1
27	2.2	0.2	2.15	0.15	3.11
28	-0.86	0.23	3.15	0.24	0.24
29	2.9	0.22	6.78	1.28	4.93
30	1.37	0.34	3.44	0.77	1.97
31	1.6	0.36	3.99	0.69	2.64
32	0.97	0.08	3.48	0.17	1.54
33	-1.03	-0.15	3.71	0.52	0.43
34	1.66	0.07	3.72	0.29	3.98
35	0.15	0.05	2.07	0.11	0.71
36	0.89	0.24	3.58	0.38	2.22
37	1.7	0.09	8.27	0.62	3.82
38	4.97	0.59	7.6	0.76	7.2
39	2.19	0.14	4.88	0.16	3.94
40	2.99	0.32	6.66	0.18	5.82
41	5.48	0.02	7.66	-0.03	7.43
42	2.91	0.39	9.37	1.01	5.92
43	1.97	0.3	4.46	0.65	2.99
44	0.17	0.3	3.75	-0.09	2.6
45	3.1	0.29	5.26	0.46	4.58
46	5.16	0.48	4.47	0.42	6.11
47	4.07	0.39	9.51	0.67	6.33
48	1.87	0.07	2.83	0.01	2.61

OBS	DUMM6_12	MPROX_12	DUM1_12	DUMM2_12	IGAP_12
1	0.39	2.74	1.45	-4.41	-5.29
2	-0.07	0.87	1.25	0.83	0.29
3	0.19	2.66	0.84	-0.69	0
4	0.1	1.59	-0.38	-0.43	0.21
5	0.27	1.85	0.77	-0.21	0.48
6	-0.16	1.2	-0.15	-1.52	0.21
7	0.13	2.23	-0.84	0.88	1.18
8	0.23	1.4	-1.23	0	4.44
9	-0.1	2.37	0.84	-3.94	-4.69
10	0.1	3.23	0.82	-2.48	2.76
11	0	3	-1.45	2.13	0.17
12	0.1	3.89	0.76	-2.81	-3.89
13	0.15	3.48	-1.88	2.32	2.64
14	0.05	2.78	0.12	-2.95	2.52
15	0.26	3.01	1.34	-0.73	0
16	0.19	1.36	-0.5	-0.37	0.31
17	-0.02	5.77	-0.2	0.83	6.42
18	-0.18	1.78	0.74	-0.48	0.11
19	1.16	5.06	2.05	-2.07	0.18
20	1.14	0.24	-1.64	-0.35	-3.49
21	0.56	5	1.93	2.88	-1.33
22	0.11	3.85	-0.78	1.68	0.54
23	0.96	3.04	0.56	-6.17	-5.7
24	-0.12	2.73	1.11	-0.52	0.01
25	0.24	4.29	-0.18	-0.47	-4.81
26	0.04	3.27	-0.43	1.97	-0.53
27	0.24	2.29	1	-1.76	-2.01
28	0.19	3.38	-0.22	1.65	1.99
29	0.81	5.75	4.54	-1.04	0.37
30	0.45	1.48	1.67	-0.73	-4.98
31	0.45	2.91	0.84	0.04	-3.93
32	0.07	0.95	0.79	-2.52	0.61
33	0.08	2.08	-0.83	-0.74	-0.39
34	0.3	2.11	-0.4	-0.66	0.57
35	0.02	1.77	-1.23	-0.56	0.23
36	0.31	3.58	0.67	-0.83	-0.28
37	0.3	4.08	-0.98	-0.78	3.81
38	0.77	3.69	-1.1	-0.19	0.15
39	0.14	2.24	-0.89	2.94	-1.46
40	0.27	3.5	-0.69	0.88	-0.25
41	-0.01	3.77	0.51	0.71	-0.2
42	0.54	6.1	-0.08	-0.72	-0.06
43	0.44	3.32	1.64	0.94	-0.07
44	-0.15	5.29	0.18	3.41	-1.15
45	0.41	3.4	1.78	-2.4	-3.01
46	0.57	3.3	1.59	4.23	2.58
47	0.47	4.36	2.77	-0.07	0.24
48	0.04	2.12	1.17	-2.62	-3.11

OBS	RESTO_12	OVERJ_01	OVERB_01	UIPP_01	LIMPA_01
1	0	4.1	5.82	108.42	98.06
2	0	4.48	5.86	114.81	92.27
3	0	1.49	3.04	110.87	90.07
4	0	5.47	6.08	120.91	102.42
5	0	5.68	2.64	110.94	88.37
6	0	3.55	4.55	115.27	93.83
7	0	3.8	4.52	111.18	88.48
8	0	3.56	5.79	109.42	85.25
9	0	6.74	5.28	119.43	93.18
10	0	5.11	-3	105.48	85.79
11	0	2.92	4.2	112.56	106.32
12	0	2.49	4.61	109.99	96.09
13	0	5.59	4.38	120.02	93.78
14	0	5.72	8.78	117.6	88.91
15	0	4.87	7.43	110.49	96
16	0	3.7	2.12	125.16	114.27
17	0	6.49	5.46	109.61	100.7
18	0	2.99	5.99	113.09	93.5
19	0	5.28	2.78	113.18	89.27
20	0	3.4	2.87	114.74	92.7
21	0	4.08	4.88	116.77	91.72
22	0	1.57	4.72	108.36	93.88
23	0	6.88	3.98	119.21	103.33
24	0	4.77	4.96	116.74	91.04
25	0	5.98	10.13	108.2	101.61
26	0	5.6	3.47	115.8	89.19
27	0	6.77	3.01	126.74	96.94
28	0	4.61	6.59	104.02	95.45
29	0	4.08	3.2	112.69	97.42
30	0	3.41	5.31	110.82	97.74
31	0	7.24	3.88	113.34	99.5
32	0	3.32	8.07	103.71	105.16
33	0	3.42	1.67	111.77	106.08
34	0	5.44	6.35	113.15	103.92
35	0	4.83	6.62	109.56	98.78
36	0	3.11	6.39	103.72	100.88
37	0	6.97	4.62	123.87	100.15
38	0	6.75	7.63	112.06	94.37
39	0	2.41	9.43	90.89	102.86
40	0	7.89	8.6	114.03	95.03
41	0	4.11	6.86	109.85	99.13
42	0	5.22	3.46	105.2	96.58
43	0	5.32	1.66	113.62	98.71
44	0	2.92	5.92	111.26	98.64
45	0	3.62	3.49	109.18	96.18
46	0	6.43	3.88	118.09	100.64
47	0	9.58	-1.17	116.03	98.24
48	0	5.12	4.84	115.81	118.46

OBS	IIAMG_01	MAXZ_01	MANZ_01	SMA_01	SMPG_01
1	133.53	14.06	15.76	83.35	77.96
2	130.66	12.79	21.47	78.75	77.95
3	135	11.71	17.92	75.45	74.71
4	119.75	9.19	17.85	79.05	77.95
5	130.76	6.98	29.21	82.77	82.33
6	124.53	12.52	26.34	80.57	76.99
7	135.07	17.13	14.96	77.9	75.7
8	139.51	14.33	20.21	83.81	81.3
9	121.43	9.17	26.69	80.89	78.63
10	130.8	12.91	20.17	75.6	71.75
11	123.33	10.09	13.65	86.88	83.18
12	126.63	17.93	14.54	77.06	71.79
13	114.29	11.3	25.11	80.32	74.33
14	122.76	12.49	35.43	88.77	79.97
15	130.6	13.42	24.9	81.65	78.82
16	106.7	7.28	8.87	82.53	79.21
17	122.68	16.37	19.5	81.27	76.54
18	126.62	13.18	23.17	85.31	79.57
19	124.23	15.77	22.79	75.1	71.45
20	123.44	10.51	23.38	79.5	74.28
21	125.39	7.31	27.47	81.61	78.28
22	131.32	14.11	20.01	83.27	80.19
23	112.07	12.58	19.74	80.25	73.06
24	124.17	9.2	28.58	78.24	76.43
25	132.09	13.19	20.26	81.65	76.63
26	124.19	11.75	23.18	77.18	73.03
27	111.69	4.72	24.21	78.56	77.01
28	138.2	12.93	20.04	85.72	79.18
29	122.44	12.27	18.93	75.44	67.78
30	125.08	13.35	22.82	77.87	74.96
31	118.54	15.15	19.93	79.54	73.58
32	134.23	14.62	18.5	89.39	81.49
33	122.83	9.14	14.15	86.25	81.34
34	121.09	12.72	15.02	82.4	77.91
35	134.63	9.72	17.82	84.17	81.52
36	129.01	14.12	22.94	82.48	75.28
37	113.26	7.96	20.46	79.98	76.82
38	132.67	11.84	23.96	82.53	78.25
39	147.15	20.03	11.55	83.95	75.43
40	116.67	18.79	28.18	77.55	66.18
41	127.97	13.69	19.71	87.11	83.93
42	136.66	15.59	13.02	78.42	78.36
43	116.36	9.6	27.95	82.46	75.63
44	125.52	12.43	21.97	81.5	74.43
45	132.77	9.25	17.64	82.25	78.76
46	118.01	9.14	21.46	80.85	79.2
47	122.2	4.34	15.57	84.16	77.91
48	110.5	8.58	13.09	86.49	80.89

OBS	SMB_01	AMPG_01	AMB_01	VERJR_01	MAXIN_01
1	77.9	5.39	5.46	19.99	9.03
2	77.01	0.8	1.74	22.26	8.72
3	74.22	0.74	1.23	24.06	13.4
4	77.04	1.1	2.01	16.92	9.96
5	80.52	0.43	2.25	29.93	5.02
6	77.38	3.57	3.19	26.37	11.72
7	75.35	2.2	2.55	25.28	12.96
8	80.64	2.51	3.17	25.82	8.42
9	77.66	2.26	3.23	25.96	10.43
10	72.59	3.85	3.01	37.93	7.48
11	81.9	3.69	4.98	17.79	9.11
12	72.32	5.27	4.75	27.29	12.87
13	73.77	5.99	6.55	31.9	11.43
14	80.87	8.8	7.91	30.72	8.25
15	78.61	2.84	3.05	22.9	7.65
16	78.58	3.32	3.96	13.88	12.86
17	76.38	4.73	4.89	27.01	4.82
18	79.6	5.73	5.71	26.8	8.5
19	71.37	3.65	3.73	33.32	12.07
20	74.27	5.22	5.24	29.12	16.61
21	77.67	3.33	3.94	26.12	12.89
22	80.58	3.08	2.69	26.44	7.04
23	72.88	7.19	7.37	25.38	12.6
24	75.55	1.81	2.69	28.05	10.45
25	75.6	5.01	6.05	18.1	8.78
26	73.15	4.15	4.03	30.82	13.23
27	76.57	1.54	1.98	24.62	12.76
28	78.24	6.54	7.48	22.33	8.72
29	68.48	7.66	6.96	27.45	17.63
30	74.72	2.91	3.15	26.36	10.27
31	73.64	5.96	5.89	28.61	9.51
32	80.19	7.89	9.2	16.9	7.48
33	81.05	4.91	5.21	19.32	6.67
34	76.84	4.49	5.57	21.85	12.17
35	80.21	2.65	3.96	17.02	8.76
36	75.48	7.2	7.01	26.39	8
37	75.84	3.16	4.14	22.72	10.25
38	76.33	4.28	6.2	20.9	8.78
39	75.11	8.52	8.84	19.1	11.63
40	66.6	11.37	10.95	34.28	13.83
41	82.35	3.17	4.76	23.05	1.7
42	75.73	0.06	2.68	21.56	7.57
43	76.04	6.83	6.43	31.31	8.51
44	74.43	7.07	7.07	24.58	13.21
45	77.3	3.48	4.95	21.87	7.79
46	77.6	1.65	3.25	23.26	6.13
47	77.43	6.25	6.73	23.53	6.56
48	80.15	5.59	6.33	15.22	6.25

OBS	MANIN_01	GOMA_01	SADA_01	CRBA_01	OCCFR_01
1	29.02	127.65	126.06	131.63	2
2	30.98	129.08	125.08	129.67	2
3	37.46	134.03	125.3	134.06	2
4	26.88	125.15	123.38	132.59	2
5	34.95	138.85	125.87	130.35	2
6	38.09	137.14	122.81	130.83	2
7	38.24	137.9	132.28	135.2	2
8	34.23	135.75	122.79	132.69	2
9	36.39	138.02	117.1	123.21	2
10	45.41	141.31	125.37	132.13	2
11	26.89	134.38	119.6	122.6	2
12	40.16	135.71	125.39	129.5	2
13	43.33	140.93	123.2	129.27	2
14	38.97	143.04	124.6	128.66	2
15	30.56	132.63	128.22	129.35	2
16	26.74	121.21	119.29	124.63	2
17	31.83	132.08	124.88	128.53	2
18	35.29	138.68	120.86	124.78	2
19	45.39	139.15	121.91	130.23	2
20	45.73	138.22	127.17	137.94	2
21	39.01	133.86	121.06	129.18	2
22	33.48	137.72	120.61	121.76	2
23	37.98	141.63	129.06	133.35	2
24	38.5	138.92	127.04	130.92	2
25	26.88	128.02	126.9	129.53	2
26	44.05	142.13	126.51	131.83	2
27	37.38	134.78	126.36	134.76	2
28	31.06	136.08	117.25	121.77	2
29	45.07	139.03	126.88	131.45	2
30	36.63	136.13	131.25	137.79	2
31	38.12	137.31	123.52	131	2
32	24.38	122.03	119.93	127.91	2
33	26	132.37	123.12	130.14	2
34	34.02	137.24	129.2	132.91	2
35	25.78	126.04	121.12	126.83	2
36	34.39	128.33	120.62	129.26	2
37	32.97	132.77	119.77	126.12	2
38	29.67	131.33	123.51	127.01	2
39	30.73	129.48	125.03	131.13	2
40	48.11	137.34	124.36	127.82	2
41	24.75	126.38	120.45	126.21	2
42	29.13	125.86	129.38	136.4	2
43	39.82	142.42	125.01	134.77	2
44	37.79	135.22	123.13	127.71	2
45	29.66	130.31	113.55	118.91	2
46	29.39	132.04	123.01	129.49	2
47	30.09	133.07	121.67	126.19	2
48	21.47	129.48	121.12	125.38	2

OBS	WITSX_01	DUMM7_01	FPA_D_01	CONVX_01	ABPLN_01
1	-1.49	-34.66	84.21	167.87	44.87
2	0.56	-40.19	83.25	178.31	37.46
3	2.61	-33.14	82.33	178.27	44.64
4	-1.05	-35.87	80.04	177.58	39.74
5	-2.5	-41.59	88.92	179.08	35.66
6	1.49	-43.82	82.63	172.6	38.5
7	5.84	-39.35	87.03	175.14	43.53
8	2.98	-39.46	86.27	174.43	43.75
9	-1.54	-37.33	82.04	175.06	40.39
10	1.3	-48.14	80.4	172.41	34.89
11	0.74	-38.8	81.6	171.98	42.81
12	2.04	-37.68	72.85	168.14	48.27
13	-3.68	-41.23	78.36	167.24	44.63
14	-6.23	-40.97	82.71	161.19	46.43
15	-1.14	-42.08	86.72	174.01	37.99
16	1.02	-40.37	81.53	172.46	42.21
17	-1.92	-37.55	84.92	170.12	39.13
18	-1.39	-41.63	76.95	167.31	45.1
19	1.17	-45.25	87.29	172.05	43.49
20	0.5	-43.87	86.91	167.99	46.59
21	-2.04	-39.83	85.56	172.4	41.83
22	2.4	-35.92	81.97	173.06	40.38
23	-4.07	-39.87	82.97	164.65	42.53
24	-2.47	-36.71	84.96	175.93	42.29
25	-5.79	-37.28	78.83	168.89	41.57
26	0.26	-43.58	78.15	171.4	40.81
27	-0.59	-40.49	82.17	176.61	38.57
28	-4.32	-39.61	84.11	166.07	44.65
29	-3.12	-41.8	76.97	163.17	46.71
30	-0.92	-37.97	88.19	173.62	41.68
31	-3.07	-36.29	84.56	166.71	43.52
32	-6.38	-34.5	84.8	163.26	43.65
33	-1.74	-42.41	88.85	169.67	40.34
34	-0.09	-38.42	81.33	169.92	46.4
35	-1.96	-37.84	87.37	174.1	43.67
36	-5.38	-43.8	81.55	165.4	39.52
37	-3.42	-33.41	80.25	172.65	44.53
38	-5.71	-35.85	85	171.13	39.11
39	-3.4	-35.56	78.35	159.85	49.7
40	-9.71	-49.3	68.19	155.55	44.87
41	-2.6	-42.76	84.12	173.79	36.15
42	0.51	-35.95	89.47	179.86	41.3
43	-5.67	-43.06	84.11	165.58	39.95
44	-3.82	-39.08	74.12	165.21	44.12
45	-4.07	-37.38	84.04	172.49	43.34
46	-3.25	-34.97	84.56	176.56	37.59
47	-6.31	-40.4	82.78	167.53	39.02
48	-5.15	-36.6	81.1	167.81	40.99

OBS	MPA_0_01	DUMY_01	OCC_0_01	L10CC_01	U1APA_01
1	22.77	-92.2	12.59	71.76	28.16
2	25.68	-93.76	11.02	73.07	29.03
3	29.84	-91.81	14.9	74.98	23.74
4	24.79	-95.93	12.58	65.37	34.32
5	28.37	-89.08	2.89	66.15	24.07
6	32.46	-92.4	13.31	67.03	30.39
7	26.91	-89.12	15.66	80.28	25.17
8	29.26	-91.16	13.87	79.36	22.77
9	32.98	-91.24	12.1	65.95	33.05
10	36.76	-91.85	13.87	71.31	29.98
11	28.47	-94.75	18.11	63.31	24.6
12	39.11	-101.68	27.34	72.14	31.91
13	39.31	-95.43	16.76	63.67	41.02
14	36.23	-92.72	11	65.86	39.39
15	22.66	-90.25	6.54	67.88	27.17
16	24.42	-94.92	16.79	58.1	37.3
17	23.46	-89.1	8.98	64.82	33.39
18	37.92	-97.85	20.11	68.69	31.98
19	29.55	-84.78	9.66	70.84	33.96
20	33.11	-89.93	12.32	66.52	30.64
21	31.73	-92.39	9.01	65.55	29.87
22	31.7	-92.61	15.78	70.2	24.99
23	28.07	-87.88	12.15	60.75	41.72
24	29.97	-89.56	6.74	65.73	32.12
25	24.68	-96.22	12.95	66.66	28.89
26	38.93	-93.58	18	69.88	33.99
27	32.22	-94.46	10.45	61.28	38.81
28	26.12	-89.78	11.84	70.27	23.51
29	35.88	-95.33	18.89	65.58	36.45
30	23.4	-89.02	5.95	64.81	29.06
31	27.14	-88.72	10.69	64.05	37.59
32	21.07	-93.86	11.32	65.09	23.58
33	18.49	-85.14	6.45	61.88	29.16
34	30.6	-95.49	18.96	64.44	28.66
35	19.93	-90.53	7.96	69.25	22.54
36	28.13	-94.45	10.93	61.92	27.83
37	29.55	-92.29	12.2	62.5	40.99
38	22.93	-91.38	7.19	69.89	29.63
39	27.82	-96.92	22.94	72.26	15.46
40	46.1	-104.27	25.36	64.23	47.09
41	24.57	-94.61	10.24	66.55	27.26
42	18.02	-89.11	8.87	74.27	19.36
43	31.35	-87.95	6.85	56.79	37.08
44	38.1	-102.42	21.42	64.68	31.34
45	24.38	-88.08	9.29	68.73	26.65
46	24.03	-88.74	6.62	61.96	34.56
47	25.21	-91.85	7.67	64.22	37.78
48	21.27	-91.35	11.64	51.91	35.27

OBS	U1SN_01	U1NAH_01	U1NAA_01	L1NBN_01	L1NBA_01
1	99.38	1.34	16.03	4.36	24.98
2	106.09	6.91	27.35	4.12	20.26
3	97.46	2.68	22.01	2.49	21.75
4	110.95	7.65	31.9	3.98	26.34
5	105.91	5.93	23.15	3.52	23.84
6	103.55	5.5	22.98	6.2	29.3
7	98.21	3.63	20.31	3.38	22.07
8	101.01	2.14	17.2	3.08	20.12
9	109	6.96	28.11	4.38	27.23
10	97.99	3.9	22.39	3.54	23.79
11	103.46	2.33	16.58	5.76	35.11
12	97.12	2.02	20.05	5.22	28.57
13	108.59	5.65	28.27	8.86	30.89
14	109.35	0.8	20.58	7.06	28.75
15	102.84	5.11	21.18	4.59	25.17
16	112.3	7.44	29.77	9.59	39.58
17	104.79	4.51	23.52	3.86	28.92
18	104.59	2.81	19.28	7.51	28.39
19	101.11	5.96	26.01	6.38	26.03
20	98.13	4.23	18.63	9.6	32.7
21	103.88	3.28	22.27	5.3	28.4
22	101.32	2.4	18.05	4.09	27.94
23	106.62	5.21	26.37	8.65	34.19
24	106.29	5.64	28.06	4.32	25.09
25	99.42	3.04	17.78	3.93	24.08
26	102.57	6.15	25.39	6.3	26.39
27	113.98	8.98	35.42	4.63	30.9
28	95.3	1.39	9.58	4.07	24.75
29	95.06	2.4	19.62	8.65	30.98
30	100.55	4	22.68	5.25	29.09
31	103.84	5.24	24.3	6.55	31.26
32	96.23	3.64	6.84	5.45	29.74
33	105.09	2.26	18.84	6.36	33.13
34	100.98	4.05	18.58	6.3	34.77
35	100.81	2.29	16.64	3.26	24.77
36	95.72	1.93	13.23	8.78	30.74
37	113.62	7.09	33.64	4.97	28.96
38	103.29	2.42	20.75	3.19	20.37
39	79.26	5.7	-4.69	4.18	28.7
40	100.19	4.01	22.64	12.52	29.74
41	108.15	3.86	21.05	5.87	26.23
42	97.63	2.21	19.22	0.94	21.44
43	105.12	4.68	22.65	8.5	34.57
44	98.05	2.95	16.55	9.25	30.85
45	101.39	1.86	19.14	4.87	23.14
46	111.97	6.73	31.11	3.99	27.62
47	109.47	5.56	25.31	4.82	25.76
48	109.56	4.2	23.08	7.39	40.09

OBS	PGNBM_01	OCCSN_01	GGSNA_01	FMIA_01	MPA_T_01
1	0.11	18.84	29.02	59.17	22.77
2	1.87	16.32	30.98	62.05	25.68
3	0.93	22.52	37.46	60.09	29.84
4	1.81	14.67	26.88	52.79	24.79
5	3.85	9.47	34.95	63.26	28.37
6	0.8	18.95	38.09	53.72	32.46
7	0.7	27	38.24	64.62	26.91
8	1.36	18.84	34.23	65.5	29.26
9	2.05	15.52	36.39	53.84	32.98
10	1.77	22.52	45.41	57.44	36.76
11	2.39	16.52	26.89	45.21	28.47
12	1.03	28.39	40.16	44.8	39.11
13	1.15	20.79	43.33	46.92	39.31
14	2.03	13.74	38.97	54.86	36.23
15	0.45	14.44	30.56	61.34	22.66
16	1.28	19.11	26.74	41.31	24.42
17	0.28	17.35	31.83	55.84	23.46
18	0.05	17.48	35.29	48.58	37.92
19	0.17	25.49	45.39	61.18	29.55
20	0.03	24.95	45.73	54.2	33.11
21	1.34	16.28	39.01	56.55	31.73
22	0.72	17.56	33.48	54.42	31.7
23	0.36	22.06	37.98	48.6	28.07
24	1.82	15.27	38.5	58.99	29.97
25	2.02	15.14	26.88	53.71	24.68
26	0.28	23.11	44.05	51.88	38.94
27	0.89	15.61	37.38	50.84	32.22
28	1.87	16.77	31.06	58.43	26.12
29	1.55	28.08	45.07	46.69	35.88
30	0.5	19.18	36.63	58.86	23.4
31	0.14	21.67	38.12	53.36	27.14
32	2.5	14.63	24.38	53.76	21.07
33	0.59	13.96	26	55.43	18.49
34	2.23	22.38	34.02	45.48	30.6
35	2.8	13.81	25.78	61.29	19.93
36	0.42	17.19	34.39	51	28.13
37	1.83	15.62	32.97	50.3	29.55
38	3.62	13.93	29.67	62.7	22.93
39	0.65	25.85	30.73	49.32	27.82
40	1.01	27.37	48.11	38.87	46.1
41	3.2	10.43	24.75	56.3	24.57
42	5.46	19.98	29.13	65.41	18.02
43	0.82	15.32	39.82	49.94	31.35
44	0.01	21.11	37.79	43.26	38.1
45	2.99	14.57	29.66	59.43	24.38
46	2.9	11.98	29.39	55.33	24.03
47	0.91	12.55	30.09	56.54	25.21
48	1.4	11.84	21.47	40.27	21.27

OBS	ARTA_01	UGOA_01	LGOA_01	ACBL_01	MNBL_01
1	135.31	55.89	71.75	73.53	60.32
2	136.82	55.78	73.3	75.62	65.86
3	138.13	58.56	75.47	76.87	64.57
4	138.35	55.4	69.75	78.48	65.79
5	130.24	57.35	81.5	73.35	68.6
6	138.14	57.4	79.74	74.28	67.33
7	128.06	59.44	78.46	73.89	63
8	135.69	55.28	80.47	72.73	65.61
9	141.27	58.61	79.42	80.42	67.9
10	138.73	56.8	84.52	75.16	57.42
11	132.91	60.28	74.09	72.69	59.82
12	139.06	55.49	80.22	67.86	54.07
13	139.2	56.96	83.97	70.24	59.37
14	131.33	58.06	84.98	76.75	68.7
15	129.71	56.64	75.98	76.34	67.57
16	146.24	50.07	71.14	78.82	66.28
17	134.88	57.1	74.98	67.43	53.51
18	135.76	57.85	80.83	75.71	63.88
19	144.32	53.68	85.48	74.99	60.31
20	140.35	52.18	86.04	74.5	68.01
21	144.09	52.08	81.78	77.12	70.52
22	135.15	60.13	77.58	74.55	61.45
23	127.29	63.35	78.28	75.36	57.8
24	132.55	58.51	80.41	72.9	63.41
25	131.95	59.33	68.69	78.1	63.89
26	135.41	58.05	84.07	79.53	63.56
27	136.23	54.33	80.45	71.61	62.89
28	137.73	59.9	76.18	73.76	62.2
29	139.16	56.66	82.37	75.36	57.46
30	129.25	60.24	75.89	77.59	67.71
31	137.29	59.46	77.85	76.22	59.79
32	142.42	52.48	69.55	74.08	66.96
33	130.51	57.89	74.48	76.43	62.51
34	127.58	61.9	75.34	79.47	69.68
35	138.62	53.77	72.27	79.9	70.29
36	145.44	53.76	74.57	78.79	67.65
37	140.43	58.25	74.53	74.51	58.53
38	134.83	59.49	71.84	73.62	62.2
39	136.22	56.34	73.15	77.04	60.59
40	146.41	52.17	85.17	78.27	57.85
41	137.92	54.32	72.06	76.94	70.88
42	133.88	53.22	72.65	74.19	66.42
43	132.39	59.72	82.7	74.07	59.2
44	139.44	54.9	80.32	69.06	57.6
45	145.8	55.6	74.71	79.87	62.99
46	134.34	58.45	73.59	72.09	59.97
47	135.35	59.17	73.91	74.47	58.83
48	130.87	60	69.48	78.74	57.87

OBS	PCBL_01	RAMH_01	PFH_01	TFH_01	UFH_01
1	33.23	52.46	79.59	112.77	52.47
2	35.17	52.31	81.58	118.85	51.71
3	28.92	45.75	69.99	114.49	53.3
4	35.71	54.55	84.63	117.87	56.18
5	38.13	57.27	86.92	128.39	56.48
6	33.59	47.91	76.29	121.36	55.21
7	32.9	50.43	75.31	119.29	55.98
8	37.37	55.25	86.05	125.56	57.37
9	36.53	49.74	81.5	125.76	57.58
10	31.31	46.64	73.14	122.67	52.98
11	40.29	50.82	83.63	113.13	52.21
12	34.57	42.45	72.21	113.54	55.33
13	31.99	43.95	71.3	117.64	54.14
14	39.47	57.48	88.65	135.24	59.86
15	41.15	59.66	91.6	128.84	56.24
16	32.44	60.03	88.85	121.92	59.02
17	31.22	47.21	72.68	105.1	45.05
18	39.05	52.97	85.4	125.92	57.1
19	32.5	47.48	76.27	126.81	56.02
20	32.48	52.1	79.84	134.19	63.87
21	36.69	53.43	85.88	134.18	64.28
22	35.45	49.05	78.28	115.72	54.77
23	33.53	47.62	72.99	114.95	53.79
24	32.62	49.76	75.73	119.38	57.39
25	36.65	52.2	81.4	114.29	54.92
26	31.86	51.53	77.52	129.13	57.77
27	34.14	52.49	80.67	122.84	54.54
28	40.69	46.17	81.04	116.08	55.17
29	35.81	42.97	73.87	124.21	58.49
30	37.76	49.4	78.91	124.13	57.2
31	35.75	44.6	74.9	118.37	55.77
32	36.06	54.55	85.99	115.44	53.99
33	39.09	60.82	91.2	121	56.17
34	38.98	52.2	82.02	124.85	56.62
35	41.6	60.77	96.01	128.9	62.54
36	35.95	48.37	80.61	123.39	55.34
37	30.6	46.61	72.85	109.33	54.73
38	36.89	46.76	77.33	111.6	51.16
39	39.09	52.22	84.87	121.19	59.56
40	38.17	44.32	78.99	133.98	62.57
41	38.85	59.48	92.07	123.1	50.66
42	34.94	58.39	86.37	121.48	57.88
43	34.09	50.07	77.27	120.59	54.33
44	41.48	44.5	80.66	121.11	56.86
45	36.66	52.3	85.16	120.02	55.54
46	30.43	51.09	75.56	107.78	46.89
47	38.94	48.69	81.14	114.93	50.33
48	39.96	58.86	90.22	114.68	53.83

OBS	LFN_01	CNPOD_01	OVERJ_02	OVERB_02	UIPP_02
1	62.52	108.91	2.51	2.72	114.68
2	68.04	117.07	2.25	4.05	112.72
3	61.69	109.16	2.8	3.16	108.28
4	62.56	114.26	1.54	2.76	106.37
5	72.31	124.33	2.69	3.49	108.38
6	67.56	117.07	2.53	2.86	121.36
7	64.74	113.53	2.39	1.7	114.53
8	69.65	120.38	3.46	4.2	117.38
9	69.21	118.18	3.35	2.86	123.9
10	71.19	110.99	2.06	2.67	104.85
11	62.9	113.8	2.18	2.77	119.67
12	59.76	99.97	1.62	3.56	110.39
13	66.38	111.61	3.99	2.78	110.21
14	78.36	125.55	2.84	1.85	125.62
15	73.54	124.45	2.58	3.62	111.49
16	64.54	119.54	1.87	2.33	121.15
17	61.4	99.93	2.43	2.14	110.02
18	71.58	120.46	1.95	3.23	120.94
19	72	111.13	3.67	2.29	118.94
20	71.54	123.21	2.96	3.73	105.39
21	71.42	123.11	1.74	0.85	124.16
22	62.33	112.57	2.39	3.8	113.59
23	63.44	108.67	1.92	1.88	107.39
24	62.6	114.82	1.89	3.25	111.18
25	60.74	112.81	2.41	4.84	110.81
26	72.92	114.22	2.82	4.16	125.75
27	69.26	114.76	2.29	3.02	105.62
28	62.9	112.75	3.2	3.58	120.79
29	68.54	109.01	3.94	2.84	125
30	67.7	120.75	2.76	2.11	122.32
31	64.9	.	2.89	2.43	103.41
32	65.13	115.2	3.13	4.63	120.56
33	66.24	119.37	2.24	1.09	121.16
34	70.84	123.17	2.98	3.89	118.3
35	67.55	126.88	2.63	2.83	119.3
36	70.76	118.92	2.97	3.57	119.13
37	56.17	105.32	2.08	3.22	118.26
38	61.77	112	2.28	4.54	115.75
39	65.15	112.98	2.22	3.63	115.02
40	76.66	106.73	2.21	2.74	114.22
41	73.61	124.63	2.21	2.02	112.79
42	64.21	118.93	3.59	2.96	122.9
43	68.85	112.71	2.79	0.71	104.31
44	67.26	109.67	2.46	3.4	126.88
45	65.87	117.59	2.15	1.06	109.1
46	61.56	108.85	1.92	1.02	103.96
47	66.31	110.34	4.25	2.7	117.06
48	64.5	113.1	3.43	3.22	112.51

OBS	LIMPA_02	MANG_02	MAXZ_02	MANZ_02	SMA_02
1	97.25	128.52	7	17.24	81.65
2	100.05	123.29	10.46	19.56	77.76
3	94.35	132.92	8.45	22.01	77.36
4	98.73	136.16	5.39	18.39	77.74
5	89.08	134.78	10.1	22.82	81.64
6	96.95	116	9.67	21.69	79.66
7	91.39	125.55	14.62	17.44	76.98
8	83.81	133.23	11.62	22.02	83.04
9	86.01	125.14	8.71	21.12	79.54
10	84.36	136.02	16.52	21.91	71.83
11	94.97	128.64	2.11	19.31	87.56
12	95.61	124.52	15.54	24.8	74.27
13	81.88	133.51	8.28	31.74	78.96
14	92.77	116.6	8.16	21.89	87.08
15	100.4	128.65	8.83	20.31	80.71
16	105.17	122.77	3.86	11.73	82.71
17	94.53	124.46	12.25	21.51	76.46
18	87.05	126.9	9.39	27.69	84.11
19	85.78	126.5	6.49	29.71	73.48
20	83.72	141.65	11.61	27.31	78.95
21	93.45	120.07	0.52	23.51	85.73
22	89.76	132.6	8.64	26.77	80.54
23	104.45	123.5	11.28	20.25	76.77
24	86.11	135.53	14.37	23.32	76.11
25	94.68	136.8	12.99	14.45	76.22
26	89.33	119.77	8.96	25.13	74.03
27	98.03	132.1	12.59	17.79	77.15
28	96.37	123.23	4.38	20.64	83.46
29	97.54	112.62	4.86	25.89	72.71
30	91.84	121.39	6.57	22.56	76.18
31	103.58	127.76	8.45	22.27	79.36
32	109.31	116.08	4.17	18.32	86.38
33	106.36	115.82	4.85	13.71	84.6
34	95.23	124.03	11.23	25.4	79.95
35	101.16	122.64	6.71	15.27	82.54
36	97.74	118.31	5.34	24.91	78.13
37	99.58	118.18	10.11	28.15	77.03
38	98.87	128.06	8.71	20.08	74.07
39	107.75	119.7	11.74	11.86	80.37
40	96.31	117.75	10.61	27.49	76.08
41	96.65	127.12	12.03	16.09	83.12
42	83.22	131.9	4	30	78.59
43	93.84	130.84	8.44	25.32	78.97
44	104.33	110.19	9.8	16.76	82.79
45	96.38	133.8	6.37	18.84	80.89
46	96.63	134.05	7.23	21.28	77.09
47	91.18	131.04	7.39	21.01	82.3
48	113.6	117.98	4.14	16.17	85.97

OBS	SMPG_02	SNB_02	AMPG_02	ANB_02	VERJR_02
1	78.13	77.66	3.52	3.99	19.55
2	75.83	74.32	1.93	3.44	23.93
3	76.1	74.93	1.26	2.42	24.46
4	76.24	75.51	1.5	2.23	18.75
5	81.99	79.55	-0.35	2.1	27.77
6	76.87	77.08	2.78	2.58	25.69
7	76.31	75.25	0.68	1.73	28.53
8	81.1	80	1.95	3.04	25.58
9	79.33	77.91	0.2	1.63	24.96
10	72.12	71.54	-0.3	0.29	34.77
11	83.87	83.46	3.69	4.1	16.72
12	71.05	70.35	3.21	3.92	29.47
13	76.84	75.46	2.12	3.5	34.4
14	83.82	83.8	3.26	3.28	25.01
15	78.44	77.52	2.26	3.19	19.47
16	81.44	80.68	1.27	2.03	10.9
17	74.34	73.6	2.12	2.86	30.99
18	80.55	79.86	3.56	4.26	25.1
19	72.15	71.3	1.32	2.18	28.78
20	74.15	74.14	4.81	4.81	29.24
21	87.78	84.59	-2.05	1.14	22.31
22	81.38	79.46	-0.84	1.08	24.05
23	72.96	71.92	3.82	4.85	24.66
24	76.32	74.12	-0.21	1.99	27.18
25	76.98	74.37	-0.76	1.85	17.72
26	73.92	72.63	0.12	1.4	25.14
27	76.11	75.17	1.04	1.98	24.25
28	81.41	79.72	2.06	3.74	19.61
29	67.17	67.25	5.54	5.46	24.84
30	77.07	76.01	-0.9	0.16	24.45
31	74.1	73.39	5.26	5.97	25.24
32	82.83	81.26	3.56	5.13	14.05
33	81.54	81.22	3.06	3.38	16.65
34	78.2	77.53	1.74	2.42	22.45
35	81.84	80.26	0.7	2.28	16.9
36	75.61	75.04	2.52	3.09	24.82
37	77.26	74.87	-0.24	2.16	23.98
38	77.82	74.1	-3.75	-0.03	17.32
39	77.07	76.17	3.31	4.2	17.52
40	69.98	69.4	6.1	6.68	31.71
41	84.71	81.35	-1.59	1.77	23.44
42	82.6	79.5	-4.01	-0.91	21.99
43	73.61	73.55	5.37	5.42	31.01
44	79.21	78.33	3.58	4.46	18.6
45	79.83	76.81	1.06	4.08	20.72
46	77.21	74.06	-0.12	3.02	25.36
47	81.85	81.08	0.46	1.22	20.72
48	81.2	80.4	4.77	5.57	15.91

OBS	MAXIN_02	MANIN_02	GONA_02	SADA_02	CRBA_02
1	9.9	29.45	125.17	125.14	133.25
2	10.76	34.69	127.94	126.8	130.04
3	12.66	37.12	133.11	127.29	135.95
4	11.34	30.09	123.12	123.3	133.28
5	7.37	35.14	136.41	126.84	131.71
6	12.66	38.35	134.75	123.92	130.69
7	11.65	40.18	136.92	131.35	.
8	10.08	35.66	136.33	129.54	137.8
9	11.97	36.93	138.41	118.54	122.84
10	9.06	43.83	137	127.68	133.04
11	11.43	28.15	130.82	121.23	122.25
12	13.36	42.84	134.99	126.39	129.69
13	7.79	42.18	139.13	123.87	130.4
14	9.17	34.18	138.59	123.16	126.51
15	10.74	30.2	129.84	128.83	129.85
16	12.81	23.71	117.77	119.01	125.52
17	8.22	39.21	128.83	122.6	129.59
18	9.07	34.18	136.45	119.18	124.44
19	14.35	43.13	135.25	122.19	130.41
20	16.96	46.2	137.68	128.77	138.07
21	7.48	29.79	129.56	116.11	122.3
22	8.13	32.18	136.08	122.73	123.39
23	14.21	38.87	137.33	128.25	134.34
24	13.33	40.51	137.67	128.47	132.78
25	8.79	26.51	123.38	127.45	132.26
26	15.49	40.63	136.6	126.38	129.65
27	13.18	37.42	132.44	125.46	134.3
28	9.49	29.1	134.47	117.97	121.82
29	20.79	45.63	137.76	128.63	129.83
30	11.48	35.92	132.88	129.46	136.31
31	13.11	38.35	133.61	121.52	129.44
32	8.16	22.21	116.69	118.72	125.63
33	9.74	26.39	130	123.68	131.03
34	11.61	34.06	132.88	130.78	134.61
35	9.43	26.32	125.5	122.23	128.02
36	9.16	33.98	127.37	119.84	127.97
37	8.18	32.16	130.1	122.38	128.21
38	12.71	30.03	128.82	126.8	129.33
39	11.83	29.35	127.56	126.31	132.69
40	13.24	44.95	138.07	123.01	127.59
41	1.48	24.93	125.84	119.26	124.13
42	7.44	29.43	128.09	131.91	.
43	8.53	39.54	141.17	125.91	134.38
44	10.24	28.84	126.11	123.3	124.67
45	7.75	28.47	124.85	113.58	118.11
46	6.93	32.29	130.71	123.94	130.35
47	6.47	27.19	129.66	117.03	122.34
48	5.92	21.83	130.12	123.22	125.72

OBS	OCCFR_02	WITSX_02	DUMM7_02	FPA_D_02	CONVX_02
1	1	0.03	-35.06	84.68	172.41
2	1	-2.21	-42.34	82.52	175.94
3	1	1.21	-37.14	82.4	177.21
4	1	-2.41	-42.97	78.26	176.77
5	1	-2.81	-40.21	89.03	180.75
6	1	0.69	-42.84	81.15	174.23
7	1	6.34	-37.53	87.89	178.49
8	1	3.08	-39.39	86.73	175.7
9	1	-1.65	-41.35	79.8	179.54
10	1	3.33	-47.45	81.12	180.61
11	1	3.87	-45.05	83.31	172.05
12	1	0.94	-40.02	71.52	172.64
13	1	-0.56	-44.37	79.02	175.54
14	1	1.98	-44.56	86.67	173.09
15	1	-2.49	-41.39	86.25	175.15
16	1	2.85	-38.08	81.64	177.07
17	1	-3.63	-42.16	81.08	175.55
18	1	1.41	-42.86	79.01	172.42
19	1	1.51	-47.23	86.46	177.01
20	1	0.74	-41.83	86.94	169.04
21	1	2.39	-40.1	89.6	184.53
22	1	2.65	-34.34	82.53	181.98
23	1	-2.92	-37.82	83	171.34
24	1	-3.79	-34.38	83.09	180.47
25	1	-2.56	-34.83	78.96	181.77
26	1	2.66	-46.75	78.56	179.76
27	1	-1.95	-38.3	80.81	177.81
28	1	-1.62	-38.64	83.93	175.37
29	1	-1.12	-41.22	79.25	167.4
30	1	3.18	-40.4	89.88	181.92
31	1	-4.34	-38.25	83.8	167.91
32	1	-2.61	-32.42	85.53	171.94
33	1	0.51	-42.57	89.38	173.73
34	1	4.47	-39.22	82.39	176.19
35	1	-0.36	-42.85	86.82	178.49
36	1	-2.84	-45.2	80.71	174.58
37	1	-1.68	-35.21	81.56	180.56
38	1	-1.77	-36.85	83.72	188.02
39	1	0.93	-31.78	78.91	171.83
40	1	-4.65	-43.78	70.62	165.84
41	1	-1.08	-38.4	84.44	183.28
42	1	5.8	-40.23	90.73	189.2
43	1	-6.91	-39.67	81.96	168.17
44	1	-1.63	-39.54	74.71	172.48
45	1	-4.1	-38.29	84.86	177.7
46	1	-5.94	-40.29	82.57	180.25
47	1	0.63	-41.76	85.68	179.03
48	1	-4.62	-41.95	80.83	169.8

OBS	ABPLN_02	MPA_D_02	DUMY_02	OCC_D_02	L1OCC_02
1	42.21	22.91	-93.02	8.22	68.06
2	37.29	28	-96.38	11.76	63.71
3	41.06	30.82	-93.3	12.1	66.94
4	36.67	28.07	-98.72	12.44	65.64
5	39.86	28.1	-90.9	8.1	70.93
6	37.1	34.07	-96.17	15.47	64.44
7	40.69	28.6	-90.08	13.07	73.08
8	41.55	30.02	-91.49	12.49	78.65
9	43.32	36.46	-95.25	18.03	75.56
10	35.11	34.83	-94.26	14.9	75.71
11	41.72	28.71	-96.41	11.97	68.29
12	44.61	42.37	-105.44	23.6	65.61
13	33.69	40	-96.91	11.55	69.67
14	37.27	31.33	-90.47	12.27	68.16
15	35.33	22.4	-92.19	7.7	64.9
16	39.34	23.51	-96.89	14.34	65.66
17	31.05	32.47	-96.48	12.51	65.52
18	35.74	35.72	-96.04	14.78	72.01
19	38.09	28.82	-86.86	3.49	68.89
20	44.19	33.41	-91.34	11.12	73.99
21	33.03	27.97	-92.14	5.42	64
22	34.6	31.03	-93.72	10.82	70.02
23	41.44	28.83	-90.25	12.37	59.09
24	41.23	33.74	-93.37	16.21	76.35
25	40.12	24.53	-98.66	15.44	76.24
26	38.03	35.99	-95.67	15.75	70.43
27	36.38	32.72	-95.54	18.26	67.51
28	43.26	26.58	-91.59	8.9	65.95
29	40.72	33.55	-93.03	10.66	59.56
30	36.77	23.11	-89.3	3.09	68.14
31	40.59	28.65	-90.37	9.39	57.16
32	42.27	19.51	-94.74	5.81	56.99
33	36.95	18.55	-85.69	5.87	60.96
34	39.77	29.87	-97.71	12.31	67.2
35	40.93	21.35	-92.21	8.83	66.33
36	38.5	28.87	-95.27	6.98	60.36
37	36.42	27.86	-93.57	7.77	60.33
38	30.99	24.13	-94.29	10.33	67.33
39	47.6	27.51	-97.94	18.72	63.46
40	38.75	44.31	-102.47	20.39	59.76
41	35.4	25.2	-93.85	11.73	69.88
42	33.83	21.29	-91.55	-2.26	73.23
43	43.3	31.19	-88.34	7.25	62.23
44	37.52	33.34	-104.84	21.01	63.34
45	42.21	23.43	-90.52	6.73	66.91
46	31.27	26.93	-92.05	7.12	63.56
47	32.3	23.35	-90.5	6.7	72.17
48	36.72	22.2	-92.06	8.37	52.58

OBS	U1APA_02	U1SN_02	U1NAM_02	U1NAA_02	L1NBM_02
1	30.71	104.77	1.18	23.12	3.93
2	28.27	101.97	4.02	24.21	6.42
3	21.05	95.62	2.51	18.26	2.96
4	20.52	95.03	2.05	17.29	3.37
5	18.61	101	4.38	19.36	4.82
6	34.81	108.71	5.85	29.05	6.86
7	27.41	102.88	4.92	25.9	5.06
8	28.55	107.29	2.35	24.25	3.33
9	32.85	111.92	5.85	32.39	4.58
10	23.35	95.79	6.14	23.97	4.02
11	28.64	108.24	1.19	20.69	5.16
12	30.13	97.03	3.61	22.77	7.26
13	27.93	102.42	2.93	23.46	3.79
14	36.29	116.45	5.4	29.38	7.88
15	24.89	100.75	2.38	20.04	4.73
16	28.56	108.35	2.42	25.64	3.2
17	29.79	101.8	4.19	25.34	5.9
18	35.34	111.87	0.16	27.76	4.36
19	34.1	104.59	3.88	31.11	3.68
20	20.44	88.43	1.01	9.48	3.93
21	26.42	116.68	4.24	30.95	4.3
22	22.94	105.46	2.13	24.92	0.74
23	25.07	93.18	0.11	16.4	5.37
24	21.27	97.85	2.32	21.74	3.03
25	24.03	102.02	2.16	25.8	1.48
26	36.47	110.26	9.2	36.23	7.73
27	17.49	92.44	4.13	15.29	4.41
28	32.46	111.3	3.91	27.83	5.94
29	44.1	104.21	5.45	31.5	10.47
30	32.75	110.85	7.24	34.67	4.62
31	23.03	90.3	0.58	10.94	6.81
32	34.08	112.4	1.9	26.01	5.71
33	33.09	111.43	4.04	26.83	6.85
34	30.55	106.69	3.98	26.74	4.31
35	28.85	109.88	3.24	27.34	4.08
36	37.25	109.97	5.37	31.83	6.73
37	32.5	110.08	3.88	33.06	4.52
38	20.96	103.04	6.95	28.97	3.75
39	30.99	103.19	0.89	22.82	4.65
40	39.06	100.98	3.06	24.9	11.9
41	24.91	111.31	3.03	28.19	3.19
42	27.67	115.45	6.37	36.87	1.02
43	28.64	95.78	1.63	16.81	6.62
44	41.36	116.64	2.68	33.85	6.47
45	22.77	101.35	1.46	20.46	5.39
46	19.69	97.03	2.69	19.94	4.97
47	29.25	110.59	5.76	28.29	3.01
48	30.83	106.59	3.56	20.62	7.85

OBS	L1NBA_02	PGNBH_02	OCCSH_02	GGSNA_02	FNIA_02
1	24.37	0.93	14.77	29.45	58.52
2	29.06	3.22	18.44	34.69	53.78
3	26.4	2.5	18.41	37.12	55.22
4	24.32	1.57	14.45	30.09	56.36
5	23.76	5.41	15.15	35.14	54.76
6	32.38	0.45	19.74	38.35	54.37
7	26.82	2.2	24.64	40.18	57.44
8	19.48	2.31	18.12	35.66	63.94
9	20.85	3.23	18.5	36.93	58.18
10	19.73	1.35	23.89	43.83	56.08
11	26.57	0.9	11.41	28.15	55.17
12	28.8	1.61	24.06	42.84	46.35
13	19.52	3.07	13.74	42.18	61.27
14	30.75	0.04	15.11	34.18	54.37
15	28.12	2.14	15.5	30.2	56.36
16	29.56	1.52	14.55	23.71	56.67
17	27.34	1.61	19.25	39.21	50.12
18	21.08	1.53	13.24	34.18	56.18
19	20.21	2.1	17.8	43.13	63.76
20	24.06	0.02	23.91	46.2	60.3
21	27.84	7.27	7.24	29.79	52.99
22	21.41	3.75	11.97	32.18	61.64
23	35.25	2.25	22.41	38.87	46.05
24	20.74	4.89	22.97	40.51	67.75
25	15.56	5.47	17.42	26.51	61.14
26	22.6	3.04	20.39	40.63	62.74
27	30.62	2.02	22.97	37.42	49.22
28	25.19	3.59	11.42	29.1	54.56
29	30.42	0.19	22.74	45.63	39.77
30	23.77	2.37	15.9	35.92	62.59
31	35.32	1.5	19.09	38.35	40.94
32	32.78	3.1	8.51	22.21	51.75
33	33.97	0.66	13.71	26.39	51.86
34	26.81	1.52	16.49	34.06	55.97
35	27.74	3.6	13.81	26.32	59.19
36	26.76	1.3	12.08	33.98	51.96
37	26.61	5.02	12.07	32.16	58.19
38	23	7.53	16.23	30.03	54.41
39	33.28	1.89	20.56	29.35	53.12
40	30.67	1.42	21.03	44.95	38.88
41	22.92	7.3	11.45	24.93	56.84
42	12.14	7.41	5.87	29.43	74.69
43	26.93	0.12	15.61	39.54	57.94
44	31.5	2.01	16.51	28.84	45.1
45	21.66	6.86	11.77	28.47	55.61
46	22.98	6.61	12.48	32.29	57.26
47	19.45	1.52	10.54	27.19	58.4
48	35.83	1.59	8.01	21.83	43.98

OBS	MPA_T_02	ARTA_02	UGOA_02	LGOA_02	ACBL_02
1	24.22	139.14	52.99	72.17	75.05
2	26.17	139.94	52.83	75.11	76.21
3	30.43	136.72	55.78	77.33	80.86
4	24.91	143.66	50.9	72.22	79.46
5	36.17	131.89	55.23	81.17	73.34
6	28.68	139.67	54.5	80.26	72.51
7	31.17	131.91	56.28	80.63	73.2
8	32.25	129.79	54.34	81.99	72.23
9	35.81	139.98	56.81	81.6	80.69
10	39.56	139.15	53.71	83.29	76.84
11	29.86	136.1	54.66	76.16	78.37
12	38.04	141.46	52.8	82.19	71.9
13	36.85	139.19	54.31	84.82	73.39
14	32.86	132.43	55.24	83.34	80.03
15	23.24	131.54	54.06	75.78	77.7
16	18.16	146.93	48.32	69.45	76.57
17	35.35	147.78	47.43	81.4	71.78
18	36.77	138.55	54.73	81.72	77.95
19	30.45	145.69	49.33	85.91	78.18
20	35.98	139.76	52.08	85.6	74.2
21	33.55	144.12	50.15	79.41	79.92
22	28.6	133.38	58.54	77.54	77.07
23	29.5	133.29	58.37	78.96	78.79
24	26.13	134.36	55.15	82.53	72.52
25	24.18	135.68	54.93	68.44	81.73
26	27.93	137.65	54.7	81.89	80.35
27	32.75	139.53	51.82	80.62	73.89
28	29.06	136.66	57.23	77.24	74.92
29	42.69	139.24	52.38	85.38	77.09
30	25.57	133.58	55.79	77.09	77.15
31	35.48	143.23	54.4	79.21	76.04
32	18.93	146.8	47.75	68.94	73.59
33	21.78	132.71	54.4	75.6	76.29
34	28.8	130.4	57.85	75.03	79.95
35	19.65	138.6	51.86	73.64	81.5
36	30.3	146.76	51.34	76.03	81.66
37	22.22	139.68	55.73	74.37	79.38
38	26.72	134.4	56.76	72.07	76.39
39	19.13	135.48	54.43	73.13	78.41
40	44.81	143.88	52.5	85.56	80.05
41	26.52	139.84	51.99	73.85	80.35
42	22.09	129.42	52.7	75.39	78.66
43	28.22	132.46	57.87	83.3	75.08
44	30.57	139.43	50.85	75.26	75.61
45	28.01	150.04	50.74	74.11	83.71
46	26.1	137.64	54.16	76.55	74.77
47	30.42	140.5	55.62	74.04	77.86
48	22.42	128.49	59.34	70.78	81.3

OBS	MNBL_02	PCBL_02	RAMN_02	PFN_02	TFN_02
1	63.38	33.55	54.93	83.24	118.16
2	68.64	36.26	51.96	83.06	126.01
3	71.24	31.72	54.84	80.91	128.38
4	66.76	35.48	57.2	88.32	126.15
5	72.7	39.66	58.27	89.75	133.35
6	67.88	35.51	48.82	79.3	124.72
7	65.08	32.8	51.48	77.34	124.06
8	65.87	34.91	61.2	87.74	128.9
9	70.9	40.91	53.67	88.98	135.2
10	63.64	34.85	50.98	80.63	132.14
11	70.45	45.25	61.05	98.77	134.1
12	62.18	39.78	44.94	79.99	128.58
13	66.69	33.91	51.45	80.24	129.32
14	74.27	41.02	67.04	99.44	143.08
15	71.32	44.03	63.23	98.13	136.59
16	67.42	32.17	62.11	90.77	120.05
17	62.86	35.4	52.84	84.91	129.57
18	67.57	40.77	58.97	93.51	134.43
19	62.2	36.79	57.44	90.25	140.37
20	70.4	33.01	51.13	79.25	135.3
21	82.29	41.53	65.98	102.56	144.05
22	66.69	37.92	55.1	85.7	124.09
23	63.37	35.13	51.25	79.56	125.87
24	66.51	32.92	52.52	79.12	126.29
25	69.96	38.7	58.02	89.87	124.77
26	65.29	35.47	55.64	85.27	134.54
27	63.93	34.42	55.73	84.91	128.24
28	65.93	44.28	53.72	91.14	125.26
29	56.45	38.86	52.35	85.63	136.84
30	71.74	38.31	53.87	84.94	130.46
31	60.76	34.85	48.2	78.93	122.88
32	67.44	34.54	60.67	91.55	118.53
33	63.59	38.26	65.21	95.4	126.03
34	76.65	40.32	55.08	86.82	132.41
35	74.19	43.94	66.03	103.16	138.1
36	70.04	38.97	54.54	89.71	133.44
37	67.69	34.99	53.28	83.1	122.99
38	66.5	38.03	52.36	83.51	120.26
39	65.56	40.22	58.19	91.33	127.56
40	61.23	41.72	50.84	88.05	140.93
41	71.06	38.59	66.84	99.49	131.13
42	82.53	40.85	69.18	100.22	141.33
43	56.6	34.77	53.95	81.56	123.99
44	67.75	46.5	59.92	99.93	135.38
45	70.29	39.54	59.18	95.5	132.28
46	62.39	34.09	55.79	84.17	121.33
47	64.3	41.2	54.97	90.63	122.87
48	60.7	42.2	64.59	96.67	122.4

OBS	UFH_02	LFH_02	CMPOD_02	OVERJ_12	OVERB_12
1	54.2	66.4	114.93	-1.59	-3.1
2	54	73.37	118.01	-2.23	-1.82
3	56.82	72.09	123.34	1.31	0.12
4	58.1	69.14	120.39	-3.93	-3.33
5	58.58	75.13	129.23	-2.99	0.85
6	55.7	69.84	118.71	-1.02	-1.69
7	55.99	68.91	117.66	-1.41	-2.82
8	58.62	71.8	123.49	-0.1	-1.59
9	61.3	74.37	127.04	-3.39	-2.42
10	57.99	74.81	116.31	-3.05	5.67
11	61.79	73.95	131.44	-0.74	-1.43
12	62.03	68.04	109.23	-0.87	-1.05
13	54.91	75.8	120.03	-1.6	-1.6
14	63.81	80.85	135.88	-2.88	-6.93
15	60.07	77.23	131.1	-2.29	-3.81
16	57.57	63.01	122.62	-1.83	0.21
17	54.11	76.34	109.21	-4.06	-3.32
18	61.09	76.75	122.97	-1.04	-2.76
19	64.29	77.11	121.2	-1.61	-0.49
20	64.65	72.32	121.23	-0.44	0.86
21	64.42	79.97	139.17	-2.34	-4.04
22	58.16	66.62	120.75	0.82	-0.92
23	58.12	68.74	117.78	-4.96	-2.09
24	59.88	67.34	121.38	-2.88	-1.71
25	58.58	66.65	122.25	-3.57	-5.29
26	61.44	73.34	123.57	-2.78	0.68
27	56.12	73.09	116.13	-4.48	0.01
28	59.76	66.45	121	-1.41	-3
29	66.98	72.78	112.61	-0.14	-0.36
30	59.5	71.56	125.09	-0.65	-3.2
31	59.42	65.54	112.54	-4.35	-1.45
32	55.25	65.85	119.15	-0.19	-3.44
33	57.31	69.65	124.25	-1.18	-0.57
34	58.25	75.76	130.63	-2.46	-2.45
35	64.76	74.43	132.78	-2.2	-3.79
36	59.76	75.14	124.12	-0.14	-2.82
37	59.84	63.63	117.07	-4.89	-1.4
38	55.63	64.86	116.78	-4.47	-3.09
39	61.81	68.02	117.94	-0.19	-5.8
40	64.81	79.28	117.41	-5.68	-5.86
41	52.16	79.61	130.6	-1.9	-4.84
42	64.52	76.9	142.27	-1.63	-0.5
43	55.89	69.82	113.09	-2.53	-0.95
44	60.05	77.08	127.99	-0.46	-2.51
45	60.58	72.81	128.95	-1.47	-2.44
46	50.91	70.77	117.19	-4.51	-2.85
47	54.55	69.13	118.23	-5.33	3.87
48	55.79	68.93	120.41	-1.69	-1.62

OBS	UIPP_12	LIMPA_12	IIANG_12	MAXZ_12	MANZ_12
1	6.26	-0.81	-5.01	-7.06	1.48
2	-2.09	7.78	-7.37	-2.33	-1.91
3	-2.59	4.28	-2.09	-3.26	4.09
4	-14.55	-3.69	16.41	-3.8	0.54
5	-2.56	0.71	4.02	3.12	-6.39
6	6.09	3.13	-8.54	-2.85	-4.65
7	3.35	2.91	-9.52	-2.51	2.48
8	7.95	-1.43	-6.28	-2.71	1.81
9	4.46	-7.17	3.71	-0.46	-5.57
10	-0.62	-1.43	5.22	3.61	1.74
11	7.11	-11.35	5.31	-7.98	5.66
12	0.4	-0.48	-2.11	-2.39	10.26
13	-9.81	-11.9	19.22	-3.02	6.63
14	8.02	3.86	-6.16	-4.33	-13.54
15	0.99	4.4	-1.96	-4.59	-4.59
16	-4.01	-9.1	16.07	-3.42	2.86
17	0.41	-6.18	1.79	-4.12	2.01
18	7.85	-6.44	0.29	-3.79	4.32
19	5.76	-3.49	2.27	-9.28	6.92
20	-9.34	-8.98	18.2	1.1	3.93
21	7.39	1.73	-5.31	-6.79	-3.96
22	5.23	-4.12	1.28	-5.47	6.76
23	-11.83	1.12	11.43	-1.3	0.51
24	-5.56	-4.93	11.36	5.17	-5.26
25	2.6	-6.93	4.71	-0.2	-5.81
26	9.95	0.15	-4.42	-2.79	1.95
27	-21.12	1.08	20.41	7.87	-6.42
28	16.77	0.92	-14.97	-8.55	0.6
29	12.31	0.12	-9.82	-7.41	6.96
30	11.5	-5.9	-3.68	-6.78	-0.26
31	-9.93	4.08	9.22	-6.7	2.34
32	16.85	4.15	-18.15	-10.45	-0.18
33	9.4	0.28	-7	-4.29	-0.44
34	5.15	-8.69	2.94	-1.49	10.38
35	9.74	2.38	-11.99	-3.01	-2.55
36	15.41	-3.14	-10.7	-8.78	1.97
37	-5.61	-0.57	4.92	2.15	7.69
38	3.69	4.5	-4.61	-3.13	-3.88
39	24.13	4.9	-27.44	-8.29	0.31
40	0.2	1.29	1.08	-8.18	-0.69
41	2.94	-2.48	-0.85	-1.66	-3.62
42	17.69	-13.35	-4.76	-11.59	16.98
43	-9.31	-4.87	14.49	-1.16	-2.63
44	15.62	5.69	-15.33	-2.63	-5.21
45	-0.08	0.2	1.03	-2.88	1.2
46	-14.13	-4	16.04	-1.91	-0.18
47	1.03	-7.06	8.84	3.05	5.44
48	-3.3	-4.87	7.48	-4.44	3.08

OBS	SNA_12	SNPG_12	SNB_12	ANPG_12	ANB_12
1	-1.7	0.17	-0.24	-1.87	-1.47
2	-0.99	-2.11	-2.69	1.13	1.7
3	1.91	1.39	0.72	0.52	1.19
4	-1.31	-1.71	-1.54	0.4	0.22
5	-1.12	-0.34	-0.97	-0.78	-0.15
6	-0.91	-0.12	-0.3	-0.79	-0.61
7	-0.92	0.61	-0.1	-1.52	-0.82
8	-0.77	-0.2	-0.66	-0.56	-0.13
9	-1.35	0.7	0.25	-2.06	-1.61
10	-3.77	0.38	-1.05	-4.15	-2.73
11	0.68	0.68	1.56	0	-0.88
12	-2.8	-0.74	-1.97	-2.06	-0.83
13	-1.37	2.51	1.69	-3.87	-3.05
14	-1.7	3.85	2.94	-5.54	-4.63
15	-0.95	-0.37	-1.09	-0.58	0.14
16	0.18	2.23	2.1	-2.05	-1.92
17	-4.81	-2.2	-2.78	-2.61	-2.03
18	-1.19	0.97	0.26	-2.17	-1.45
19	-1.62	0.71	-0.07	-2.33	-1.55
20	-0.55	-0.13	-0.13	-0.41	-0.42
21	4.12	9.5	6.92	-5.38	-2.8
22	-2.73	1.19	-1.12	-3.92	-1.61
23	-3.47	-0.1	-0.95	-3.37	-2.52
24	-2.13	-0.11	-1.43	-2.02	-0.7
25	-5.43	0.35	-1.22	-5.77	-4.2
26	-3.15	0.89	-0.52	-4.03	-2.63
27	-1.41	-0.9	-1.4	-0.5	-0.01
28	-2.26	2.23	1.48	-4.48	-3.74
29	-2.73	-0.61	-1.23	-2.12	-1.5
30	-1.7	2.11	1.29	-3.81	-2.99
31	-0.18	0.52	-0.26	-0.7	0.08
32	-3	1.33	1.07	-4.33	-4.07
33	-1.65	0.2	0.18	-1.85	-1.83
34	-2.45	0.3	0.69	-2.75	-3.15
35	-1.63	0.33	0.05	-1.95	-1.68
36	-4.35	0.32	-0.43	-4.68	-3.92
37	-2.95	0.44	-0.97	-3.4	-1.98
38	-8.46	-0.43	-2.22	-8.03	-6.24
39	-3.58	1.63	1.06	-5.21	-4.64
40	-1.47	3.8	2.8	-5.27	-4.27
41	-3.99	0.78	-1	-4.76	-2.98
42	0.17	4.24	3.76	-4.07	-3.59
43	-3.49	-2.03	-2.49	-1.46	-1
44	1.29	4.78	3.91	-3.49	-2.62
45	-1.36	1.06	-0.49	-2.42	-0.87
46	-3.77	-1.99	-3.54	-1.77	-0.23
47	-1.86	3.94	3.65	-5.79	-5.51
48	-0.52	0.3	0.25	-0.82	-0.76

OBS	VERJR_12	MAXIN_12	MANIN_12	GONA_12	SADA_12
1	-0.44	0.87	0.43	-2.48	-0.92
2	1.67	2.04	3.71	-1.14	1.72
3	0.4	-0.74	-0.34	-0.92	1.99
4	1.83	1.38	3.21	-2.03	-0.08
5	-2.16	2.35	0.19	-2.44	0.97
6	-0.68	0.94	0.26	-2.39	1.11
7	3.25	-1.31	1.94	-0.98	-0.93
8	-0.24	1.66	1.43	0.58	6.75
9	-1	1.54	0.54	0.39	1.44
10	-3.16	1.58	-1.58	-4.31	2.31
11	-1.07	2.32	1.26	-3.56	1.63
12	2.18	0.49	2.67	-0.72	1
13	2.5	-3.64	-1.15	-1.8	0.67
14	-5.71	0.92	-4.8	-4.45	-1.44
15	-3.43	3.09	-0.35	-2.79	0.61
16	-2.98	-0.05	-3.03	-3.44	-0.28
17	3.98	3.4	7.38	-3.25	-2.28
18	-1.7	0.57	-1.12	-2.23	-1.68
19	-4.54	2.28	-2.26	-3.9	0.28
20	0.12	0.35	0.46	-0.54	1.6
21	-3.81	-5.41	-9.22	-4.3	-4.95
22	-2.39	1.09	-1.29	-1.64	2.12
23	-0.72	1.61	0.89	-4.3	-0.81
24	-0.87	2.88	2	-1.25	1.43
25	-0.38	0.01	-0.37	-4.64	0.55
26	-5.68	2.26	-3.42	-5.53	-0.13
27	-0.37	0.42	0.04	-2.34	-0.9
28	-2.72	0.77	-1.96	-1.61	0.72
29	-2.61	3.16	0.55	-1.27	1.75
30	-1.91	1.21	-0.71	-3.25	-1.79
31	-3.37	3.6	0.23	-3.7	-2
32	-2.85	0.68	-2.17	-5.34	-1.21
33	-2.67	3.07	0.39	-2.37	0.56
34	0.6	-0.56	0.04	-4.36	1.58
35	-0.12	0.67	0.54	-0.54	1.11
36	-1.57	1.16	-0.41	-0.96	-0.78
37	1.26	-2.07	-0.81	-2.67	2.61
38	-3.58	3.93	0.35	-2.51	3.29
39	-1.58	0.2	-1.38	-1.92	1.28
40	-2.57	-0.59	-3.16	0.73	-1.35
41	0.39	-0.22	0.18	-0.54	-1.19
42	0.43	-0.13	0.3	2.23	2.53
43	-0.3	0.02	-0.28	-1.25	0.9
44	-5.98	-2.97	-8.95	-9.11	0.17
45	-1.15	-0.04	-1.19	-5.46	0.03
46	2.1	0.8	2.9	-1.33	0.93
47	-2.81	-0.09	-2.9	-3.41	-4.64
48	0.69	-0.33	0.36	0.64	2.1

OBS	CRBA_12	OCCFR_12	WITSX_12	DUMH7_12	FPA_D_12
1	1.62	-1	1.51	-0.4	0.47
2	0.37	-1	-2.77	-2.14	-0.73
3	1.89	-1	-1.4	-4.01	0.07
4	0.69	-1	-1.36	-7.11	-1.78
5	1.36	-1	-0.31	1.38	0.11
6	-0.14	-1	-0.8	0.98	-1.48
7	.	-1	0.5	1.82	0.86
8	5.11	-1	0.09	0.07	0.46
9	-0.37	-1	-0.11	-4.02	-2.24
10	0.91	-1	2.03	0.7	0.72
11	-0.35	-1	3.13	-6.25	1.71
12	0.19	-1	-1.11	-2.34	-1.33
13	1.13	-1	3.12	-3.14	0.66
14	-2.15	-1	8.22	-3.59	3.96
15	0.5	-1	-1.34	0.7	-0.47
16	0.89	-1	1.83	2.29	0.11
17	1.06	-1	-1.72	-4.61	-3.84
18	-0.34	-1	2.79	-1.23	2.06
19	0.18	-1	0.34	-1.97	-0.83
20	0.13	-1	0.24	2.04	0.03
21	-6.88	-1	4.42	-0.27	4.04
22	1.63	-1	0.25	1.58	0.56
23	0.99	-1	1.14	2.04	0.03
24	1.86	-1	-1.32	2.33	-1.87
25	2.73	-1	3.24	2.44	0.13
26	-2.18	-1	2.4	-3.17	0.41
27	-0.46	-1	-1.36	2.19	-1.36
28	0.05	-1	2.71	0.97	-0.18
29	-1.62	-1	2	0.58	2.28
30	-1.48	-1	4.1	-2.43	1.69
31	-1.56	-1	-1.27	-1.96	-0.76
32	-2.28	-1	3.77	2.08	0.73
33	0.89	-1	2.25	-0.16	0.53
34	1.7	-1	4.56	-0.8	1.06
35	1.19	-1	1.6	-5.01	-0.55
36	-1.29	-1	2.55	-1.4	-0.84
37	2.09	-1	1.74	-1.8	1.31
38	2.32	-1	3.93	-1	-1.28
39	1.56	-1	4.33	3.78	0.56
40	-0.23	-1	5.06	5.52	2.43
41	-2.08	-1	1.52	4.36	0.32
42	.	-1	5.29	-4.28	1.26
43	-0.39	-1	-1.23	3.39	-2.15
44	-3.04	-1	2.18	-0.46	0.59
45	-0.8	-1	-0.03	-0.91	0.82
46	0.86	-1	-2.69	-5.33	-1.99
47	-3.85	-1	6.94	-1.36	2.9
48	0.34	-1	0.53	-5.36	-0.27

OBS	CONVX_12	ABPLN_12	MPA_D_12	DUMY_12	OCC_D_12
1	4.54	-2.66	0.14	-0.82	-4.37
2	-2.37	-0.17	2.32	-2.62	0.74
3	-1.06	-3.58	0.98	-1.48	-2.8
4	-0.82	-3.07	3.28	-2.79	-0.14
5	1.67	4.2	-0.27	-1.81	5.21
6	1.64	-1.4	1.61	-3.77	2.16
7	3.35	-3.04	1.69	-0.96	-2.59
8	1.27	-2.2	0.76	-0.33	-1.38
9	4.48	2.93	3.48	-4.01	5.93
10	8.2	0.22	-1.93	-2.41	1.03
11	0.08	-1.09	0.24	-1.66	-6.14
12	4.49	-3.66	3.26	-3.76	-3.74
13	8.29	-10.94	0.69	-1.49	-5.21
14	11.9	-9.16	-4.9	2.25	1.27
15	1.14	-2.66	-0.26	-1.94	1.16
16	4.61	-2.87	-0.91	-1.97	-2.45
17	5.42	-8.08	9.01	-7.38	3.53
18	5.11	-9.36	-2.2	1.8	-5.33
19	4.96	-5.4	-0.73	-2.08	-6.17
20	1.06	-2.4	0.3	-1.41	-1.2
21	12.13	-8.8	-3.76	0.25	-3.59
22	8.92	-5.78	-0.67	-1.11	-4.96
23	6.69	-1.09	0.76	-2.37	0.22
24	4.54	-1.06	3.77	-3.82	9.47
25	12.88	-1.45	-0.15	-2.44	2.49
26	8.36	-2.78	-2.94	-2.09	-2.25
27	1.2	-2.19	0.5	-1.08	7.81
28	9.31	-1.39	0.46	-1.8	-2.94
29	4.23	-5.99	-2.33	2.3	-8.23
30	8.31	-4.91	-0.29	-0.28	-2.86
31	1.2	-2.93	1.51	-1.65	-1.3
32	8.68	-1.38	-1.56	-0.88	-5.51
33	4.06	-3.39	0.06	-0.55	-0.58
34	6.28	-6.63	-0.73	-2.21	-6.65
35	4.39	-2.74	1.42	-1.67	0.87
36	9.18	-1.02	0.74	-0.82	-3.95
37	7.91	-8.11	-1.69	-1.28	-4.43
38	16.89	-8.12	1.2	-2.92	3.14
39	11.98	-2.1	-0.31	-1.02	-4.22
40	10.29	-6.12	-1.79	1.8	-4.97
41	9.49	-0.75	0.63	0.76	1.49
42	9.33	-7.47	3.27	-2.45	-11.13
43	2.59	3.35	-0.16	-0.4	0.4
44	7.27	-6.6	-4.76	-2.42	-0.41
45	5.2	-1.13	-0.95	-2.44	-2.56
46	3.7	-6.32	2.9	-3.32	0.5
47	11.5	-6.72	-1.86	1.35	-0.97
48	1.99	-4.27	0.93	-0.71	-3.27

OBS	L1OCC_12	U1APA_12	U1SN_12	U1MAM_12	U1MAA_12
1	-3.7	2.55	5.39	-0.16	7.09
2	-9.36	-0.77	-4.12	-2.9	-3.14
3	-8.04	-2.69	-1.84	-0.17	-3.75
4	0.27	-13.79	-15.92	-5.6	-14.61
5	4.78	-5.45	-4.91	-1.55	-3.78
6	-2.59	4.43	5.16	0.36	6.07
7	-7.2	2.24	4.67	1.29	5.59
8	-0.71	5.78	6.28	0.21	7.05
9	9.61	-0.2	2.92	-1.1	4.28
10	4.4	-6.63	-2.2	2.24	1.57
11	4.98	4.03	4.78	-1.14	4.11
12	-6.53	-1.78	-0.09	1.59	2.71
13	6	-13.1	-6.17	-2.72	-4.8
14	2.3	-3.1	7.1	4.6	8.79
15	-2.98	-2.28	-2.09	-2.73	-1.14
16	7.56	-8.74	-3.95	-5.02	-4.13
17	0.7	-3.6	-2.99	-0.32	1.82
18	3.32	3.36	7.28	-2.65	8.47
19	-1.95	0.14	3.48	-2.08	5.1
20	7.47	-10.2	-9.7	-3.22	-9.14
21	-1.55	-3.45	12.8	0.96	8.68
22	-0.18	-2.06	4.14	-0.27	6.87
23	-1.66	-16.65	-13.44	-5.1	-9.96
24	10.62	-10.85	-8.44	-3.32	-6.31
25	9.58	-4.85	2.6	-0.88	8.02
26	0.55	2.49	7.69	3.05	10.84
27	6.23	-21.33	-21.54	-4.84	-20.13
28	-4.32	8.95	16	2.51	18.26
29	-6.02	7.65	9.15	3.05	11.88
30	3.33	3.68	10.3	3.24	11.99
31	-6.89	-14.56	-13.54	-4.65	-13.36
32	-8.1	10.49	16.17	-1.74	19.17
33	-0.92	3.93	6.34	1.79	7.99
34	2.76	1.89	5.71	-0.07	8.17
35	-2.92	6.31	9.07	0.96	10.7
36	-1.56	9.42	14.25	3.44	18.6
37	-2.17	-8.49	-3.54	-3.2	-0.59
38	-2.56	-8.67	-0.25	4.53	8.22
39	-8.8	15.53	23.93	-4.8	27.51
40	-4.47	-8.03	0.79	-0.95	2.26
41	3.33	-2.35	3.16	-0.83	7.14
42	-1.04	8.31	17.82	4.16	17.65
43	5.44	-8.44	-9.34	-3.05	-5.84
44	-1.34	10.02	18.59	-0.27	17.29
45	-1.82	-3.88	-0.04	-0.4	1.32
46	1.6	-14.87	-14.94	-4.03	-11.17
47	7.95	-8.52	1.12	0.21	2.98
48	0.67	-4.45	-2.97	-0.64	-2.45

OBS	L1NBM_12	L1NBA_12	PGMBM_12	OCCSM_12	GGSMA_12
1	-0.43	-0.61	0.81	-4.07	0.43
2	2.3	8.8	1.35	2.12	3.71
3	0.47	4.65	1.57	-4.11	-0.34
4	-0.61	-2.02	-0.24	-0.21	3.21
5	1.3	-0.08	1.56	5.67	0.19
6	0.66	3.08	-0.35	0.79	0.26
7	1.68	4.75	1.5	-2.35	1.94
8	0.25	-0.64	0.95	-0.72	1.43
9	0.19	-6.38	1.18	2.99	0.54
10	0.48	-4.06	-0.42	1.37	-1.58
11	-0.61	-8.54	-1.49	-5.12	1.26
12	2.04	0.23	0.57	-4.33	2.67
13	-5.07	-11.37	1.91	-7.05	-1.15
14	0.82	2	-1.99	1.37	-4.8
15	0.15	2.95	1.68	1.06	-0.35
16	-6.39	-10.02	0.24	-4.56	-3.03
17	2.05	-1.58	1.33	1.9	7.38
18	-3.15	-7.31	1.48	-4.25	-1.12
19	-2.7	-5.82	1.92	-7.7	-2.26
20	-5.67	-8.64	-0.01	-1.04	0.46
21	-1	-0.56	5.93	-9.04	-9.22
22	-3.35	-6.53	3.03	-5.59	-1.29
23	-3.28	1.06	1.89	0.36	0.89
24	-1.28	-4.35	3.07	7.7	2
25	-2.45	-8.52	3.45	2.28	-0.37
26	1.43	-3.79	2.76	-2.72	-3.42
27	-0.22	-0.28	1.13	7.36	0.04
28	1.87	0.44	1.72	-5.35	-1.96
29	1.82	-0.56	-1.36	-5.34	0.55
30	-0.64	-5.32	1.87	-3.28	-0.71
31	0.25	4.06	1.37	-2.58	0.23
32	0.26	3.04	0.59	-6.12	-2.17
33	0.49	0.84	0.07	-0.25	0.39
34	-2	-7.96	-0.71	-5.89	0.04
35	0.82	2.97	0.8	0	0.54
36	-2.05	-3.98	0.89	-5.11	-0.41
37	-0.45	-2.35	3.19	-3.56	-0.81
38	0.55	2.63	3.92	2.3	0.35
39	0.47	4.58	1.23	-5.29	-1.38
40	-0.62	0.93	0.41	-6.34	-3.16
41	-2.69	-3.31	4.1	1.03	0.18
42	0.08	-9.3	1.95	-14.1	0.3
43	-1.89	-7.64	-0.7	0.29	-0.28
44	-2.77	0.65	2	-4.59	-8.95
45	0.52	-1.48	3.87	-2.8	-1.19
46	0.99	-4.64	3.71	0.5	2.9
47	-1.81	-6.31	0.61	-2.01	-2.9
48	0.46	-4.26	0.19	-3.84	0.36

OBS	FMIA_12	MPA_T_12	ARTA_12	UGOA_12	LGOA_12
1	-0.65	1.45	3.83	-2.9	0.42
2	-8.27	0.49	3.12	-2.95	1.81
3	-4.87	0.59	-1.41	-2.78	1.86
4	3.57	0.12	5.31	-4.5	2.47
5	-8.5	7.8	1.65	-2.12	-0.33
6	0.65	-3.78	1.53	-2.9	0.52
7	-7.18	4.26	3.85	-3.16	2.17
8	-1.56	2.99	-5.9	-0.94	1.52
9	4.34	2.83	-1.29	-1.8	2.18
10	-1.36	2.8	0.42	-3.09	-1.23
11	9.96	1.39	3.19	-5.62	2.07
12	1.55	-1.07	2.4	-2.69	1.97
13	14.35	-2.46	-0.01	-2.65	0.85
14	-0.49	-3.37	1.1	-2.82	-1.64
15	-4.98	0.58	1.83	-2.58	-0.2
16	15.36	-6.26	0.69	-1.75	-1.69
17	-5.72	11.89	12.9	-9.67	6.42
18	7.6	-1.15	2.79	-3.12	0.89
19	2.58	0.9	1.37	-4.35	0.43
20	6.1	2.87	-0.59	-0.1	-0.44
21	-3.56	1.82	0.03	-1.93	-2.37
22	7.22	-3.1	-1.77	-1.59	-0.04
23	-2.55	1.43	6	-4.98	0.68
24	8.76	-3.84	1.81	-3.36	2.12
25	7.43	-0.5	3.73	-4.4	-0.25
26	10.86	-11.01	2.24	-3.35	-2.18
27	-1.62	0.53	3.3	-2.51	0.17
28	-3.87	2.94	-1.07	-2.67	1.06
29	-6.92	6.81	0.08	-4.28	3.01
30	3.73	2.17	4.33	-4.45	1.2
31	-12.42	8.34	5.94	-5.06	1.36
32	-2.01	-2.14	4.38	-4.73	-0.61
33	-3.57	3.29	2.2	-3.49	1.12
34	10.49	-1.8	2.82	-4.05	-0.31
35	-2.1	-0.28	-0.02	-1.91	1.37
36	0.96	2.17	1.32	-2.42	1.46
37	7.89	-7.33	-0.75	-2.52	-0.16
38	-8.29	3.79	-0.43	-2.73	0.23
39	3.8	-8.69	-0.74	-1.91	-0.02
40	0.01	-1.29	-2.53	0.33	0.39
41	0.54	1.95	1.92	-2.33	1.79
42	9.28	4.07	-4.46	-0.52	2.74
43	8	-3.13	0.07	-1.85	0.6
44	1.84	-7.53	-0.01	-4.05	-5.06
45	-3.82	3.63	4.24	-4.86	-0.6
46	1.93	2.07	3.3	-4.29	2.96
47	1.86	5.21	5.15	-3.55	0.13
48	3.71	1.15	-2.38	-0.66	1.3

OBS	ACBL_12	MNBL_12	PCBL_12	RAMN_12	PFN_12
1	1.52	3.06	0.32	2.47	3.65
2	0.59	2.78	1.09	-0.34	1.48
3	3.99	6.67	2.81	9.09	10.92
4	0.98	0.97	-0.24	2.65	3.68
5	-0.01	4.11	1.53	1	2.83
6	-1.77	0.56	1.93	0.91	3
7	-0.69	2.07	-0.1	1.05	2.04
8	-0.5	0.26	-2.47	5.94	1.68
9	0.27	3	4.38	3.94	7.48
10	1.68	6.22	3.54	4.34	7.48
11	5.68	10.63	4.96	10.23	15.14
12	4.04	8.1	5.21	2.48	7.78
13	3.15	7.33	1.92	7.51	8.94
14	3.28	5.57	1.55	9.55	10.78
15	1.36	3.75	2.88	3.57	6.53
16	-2.25	1.14	-0.27	2.07	1.93
17	4.35	9.35	4.18	5.63	12.23
18	2.24	3.69	1.73	6	8.1
19	3.19	1.88	4.29	9.96	13.98
20	-0.3	2.39	0.54	-0.97	-0.59
21	2.8	11.77	4.84	12.56	16.68
22	2.52	5.24	2.47	6.05	7.41
23	3.43	5.57	1.6	3.63	6.57
24	-0.38	3.1	0.29	2.77	3.39
25	3.63	6.07	2.04	5.82	8.47
26	0.82	1.74	3.61	4.11	7.75
27	2.28	1.04	0.29	3.25	4.24
28	1.16	3.73	3.59	7.55	10.09
29	1.73	-1.01	3.06	9.37	11.76
30	-0.44	4.04	0.55	4.46	6.03
31	-0.18	0.96	-0.89	3.6	4.03
32	-0.49	0.48	-1.52	6.12	5.56
33	-0.14	1.08	-0.83	4.38	4.2
34	0.48	6.97	1.33	2.88	4.8
35	1.6	3.9	2.34	5.25	7.15
36	2.87	2.39	3.01	6.17	9.11
37	4.87	9.16	4.39	6.68	10.26
38	2.77	4.3	1.13	5.6	6.18
39	1.37	4.97	1.13	5.97	6.46
40	1.78	3.38	3.56	6.53	9.06
41	3.41	0.17	-0.26	7.36	7.43
42	4.47	16.11	5.91	10.79	13.85
43	1.01	-2.61	0.68	3.88	4.29
44	6.55	10.14	5.02	15.42	19.28
45	3.84	7.3	2.88	6.88	10.34
46	2.68	2.42	3.65	4.7	8.61
47	3.39	5.48	2.26	6.28	9.49
48	2.56	2.84	2.24	5.73	6.45

OBS	TFN_12	UFN_12	LFN_12	CNPOD_12	CASEALFA
1	5.39	1.72	3.88	6.02	A08
2	7.16	2.29	5.34	0.94	C07
3	13.89	3.52	10.4	14.18	D05
4	8.28	1.92	6.57	6.13	D10
5	4.95	2.11	2.81	4.9	B12
6	3.36	0.5	2.28	1.64	C02
7	4.77	0.01	4.17	4.13	A09
8	3.34	1.26	2.15	3.11	A12
9	9.44	3.72	5.16	8.86	C10
10	9.47	5.01	3.62	5.33	D08
11	20.97	9.58	11.04	17.64	B09
12	15.04	6.7	8.28	9.26	B10
13	11.68	0.77	9.42	8.42	B05
14	7.83	3.95	2.48	10.33	D01
15	7.75	3.83	3.69	6.65	C08
16	-1.87	-1.45	-1.52	3.08	C03
17	24.47	9.06	14.94	9.27	B01
18	8.51	3.99	5.17	2.51	A11
19	13.56	8.27	5.12	10.07	B02
20	1.11	0.78	0.78	-1.98	C09
21	9.87	0.14	8.55	16.06	A04
22	8.37	3.39	4.29	8.18	A06
23	10.92	4.33	5.3	9.11	D12
24	6.91	2.49	4.75	6.56	D06
25	10.48	3.67	5.9	9.44	B11
26	5.41	3.68	0.42	9.35	C04
27	5.39	1.58	3.83	1.37	D09
28	9.18	4.58	3.55	8.25	C01
29	12.63	8.5	4.24	3.6	A03
30	6.33	2.3	3.86	4.34	D07
31	4.52	3.65	0.64	.	C05
32	3.08	1.26	0.72	3.95	B04
33	5.03	1.14	3.4	4.88	A05
34	7.56	1.63	4.92	7.46	D04
35	9.2	2.22	6.89	5.9	A01
36	10.05	4.42	4.37	5.2	B08
37	13.65	5.11	7.46	11.75	B07
38	8.66	4.47	3.08	4.78	C06
39	6.37	2.25	2.87	4.96	A10
40	6.94	2.24	2.62	10.68	D03
41	8.03	1.5	5.99	5.97	A02
42	19.85	6.64	12.69	23.34	B03
43	3.39	1.56	0.97	0.38	B06
44	14.27	3.2	9.82	18.32	A07
45	12.26	5.04	6.94	11.36	D11
46	13.55	4.02	9.21	8.34	C11
47	7.94	4.22	2.82	7.89	D02
48	7.72	1.96	4.43	7.32	C12

OBS	CASECHK	GIBBSNUM	GIBBSXXX	GPATTERN	SUMM_XNX
1	108	87132	0	99.99	0
2	307	86167	0	99.99	0
3	405	84192	0	99.99	0
4	410	87110	0	99.99	0
5	212	87175	0	99.99	0
6	302	83114	0	99.99	1
7	109	87178	0	99.99	0
8	112	88827	0	99.99	0
9	310	88573	0	99.99	1
10	408	86150	0	99.99	4
11	209	86157	0	99.99	0
12	210	86184	0	99.99	2
13	205	85174	1	44.44	5
14	401	82149	1	44.55	5
15	308	87192	1	44.55	3
16	303	83154	1	44.44	5
17	201	79186	1	44.44	4
18	111	88565	1	44.44	1
19	202	81136	1	44.44	4
20	309	88507	1	44.66	2
21	104	84191	1	44.44	5
22	106	85118	1	44.55	2
23	412	87169	1	44.55	4
24	406	85119	1	44.55	4
25	211	86207	0	99.99	0
26	304	83175	0	99.99	1
27	409	86205	0	99.99	0
28	301	82108	0	99.99	0
29	103	84143	1	44.99	3
30	407	86125	0	99.99	0
31	305	85122	0	99.99	0
32	204	83143	0	99.99	1
33	105	85109	0	99.99	0
34	404	84153	0	99.99	0
35	101	82187	0	99.99	0
36	208	86145	0	99.99	2
37	207	86105	1	44.55	5
38	306	85170	1	44.44	2
39	110	88136	1	55.99	0
40	403	83236	1	44.55	2
41	102	84115	1	49.44	5
42	203	81184	1	44.99	0
43	206	85221	1	44.99	4
44	107	86129	1	44.44	3
45	411	87140	1	44.99	0
46	311	88814	1	59.99	1
47	402	82154	1	44.45	1
48	312	88819	0	99.99	0

OBS	SC_GOOD	SC_SOSO	SC_POOR	PHO_GOOD	PHO_SOSO
1	2	3	0	3	2
2	1	4	0	2	3
3	1	4	0	4	1
4	0	0	5	1	4
5	5	0	0	1	4
6	5	0	0	4	1
7	1	4	0	4	1
8	3	2	0	0	5
9	0	2	3	0	4
10	1	4	0	0	3
11	0	2	3	2	3
12	1	4	0	4	1
13	1	4	0	0	3
14	1	2	2	0	4
15	0	4	1	3	2
16	1	4	0	4	1
17	1	4	0	0	1
18	3	2	0	2	3
19	0	2	3	1	3
20	0	5	0	0	5
21	0	2	3	0	0
22	3	2	0	3	2
23	2	3	0	0	5
24	0	1	4	0	3
25	1	3	1	0	5
26	4	1	0	0	0
27	3	2	0	0	4
28	4	1	0	1	4
29	0	1	4	0	0
30	2	3	0	3	2
31	0	5	0	0	0
32	0	5	0	2	3
33	0	5	0	0	3
34	0	5	0	3	2
35	0	0	5	0	5
36	1	4	0	0	2
37	5	0	0	4	1
38	0	4	1	1	4
39	0	4	1	1	1
40	2	3	0	0	0
41	2	2	1	2	3
42	0	1	4	1	1
43	0	1	4	0	3
44	1	3	1	0	5
45	3	2	0	0	1
46	0	0	5	0	5
47	0	1	4	4	1
48	0	0	5	0	1

OBS	PHO_POOR	OUT_GOOD	OUT_SOSO	OUT_POOR	SC_WTED
1	0	1	2	2	2
2	0	0	5	0	1
3	0	0	4	1	1
4	0	0	3	2	-5
5	0	2	2	1	5
6	0	2	3	0	5
7	0	0	3	2	1
8	0	1	1	3	3
9	1	0	1	4	-3
10	2	1	4	0	1
11	0	0	1	4	-3
12	0	0	2	3	1
13	2	1	3	1	1
14	1	4	1	0	-1
15	0	1	3	1	-1
16	0	2	3	0	1
17	4	4	1	0	1
18	0	0	5	0	3
19	1	0	3	2	-3
20	0	0	5	0	0
21	5	1	4	0	-3
22	0	4	1	0	3
23	0	2	2	1	2
24	2	1	2	2	-4
25	0	2	3	0	0
26	5	3	1	1	4
27	1	0	2	3	3
28	0	4	1	0	4
29	5	0	3	2	-4
30	0	0	2	3	2
31	5	1	3	1	0
32	0	1	3	1	0
33	2	1	3	1	0
34	0	0	5	0	0
35	0	0	0	5	-5
36	3	2	3	0	1
37	0	1	4	0	5
38	0	1	3	1	-1
39	3	4	1	0	-1
40	5	5	0	0	2
41	0	3	2	0	1
42	3	1	2	2	-4
43	2	1	3	1	-4
44	0	0	5	0	0
45	4	0	4	1	3
46	0	1	2	2	-5
47	0	2	1	2	-4
48	4	0	0	5	-5

OBS	PHO_WTED	OUT_WTED	GIBBSANG	AAGREE	AGREE
1	3	-1	1	U_NONX	0
2	2	0	1	U_NONX	0
3	4	-1	1	U_NONX	0
4	1	-2	1	U_NONX	0
5	1	1	1	U_NONX	0
6	4	2	1	BORDER	0.5
7	4	-2	1	U_NONX	0
8	0	-2	1	U_NONX	0
9	-1	-4	1	BORDER	0.5
10	-2	1	1	BORDER	0.5
11	2	-4	1	U_NONX	0
12	4	-3	1	BORDER	0.5
13	-2	0	1	U_EXT	1
14	-1	4	1	U_EXT	1
15	3	0	1	BORDER	0.5
16	4	2	1	U_EXT	1
17	-4	4	1	BORDER	0.5
18	2	0	1	BORDER	0.5
19	0	-2	1	BORDER	0.5
20	0	0	1	BORDER	0.5
21	-5	1	1	U_EXT	1
22	3	4	1	BORDER	0.5
23	0	1	1	BORDER	0.5
24	-2	-1	1	BORDER	0.5
25	0	2	2	U_NONX	0
26	-5	2	2	BORDER	0.5
27	-1	-3	2	U_NONX	0
28	1	4	2	U_NONX	0
29	-5	-2	2	BORDER	0.5
30	3	-3	2	U_NONX	0
31	-5	0	2	U_NONX	0
32	2	0	2	BORDER	0.5
33	-2	0	2	U_NONX	0
34	3	0	2	U_NONX	0
35	0	-5	2	U_NONX	0
36	-3	2	2	BORDER	0.5
37	4	1	2	U_EXT	1
38	1	0	2	BORDER	0.5
39	-2	4	2	U_NONX	0
40	-5	5	2	BORDER	0.5
41	2	3	2	U_EXT	1
42	-2	-1	2	U_NONX	0
43	-2	0	2	BORDER	0.5
44	0	0	2	BORDER	0.5
45	-4	-1	2	U_NONX	0
46	0	-1	2	BORDER	0.5
47	4	0	2	BORDER	0.5
48	-4	-5	2	U_NONX	0

For reference

Not to be taken from the room.

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