A Comparison of Respondent Perception of Satisfaction by Area Based on PEW Survey Economic Data
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Introduction
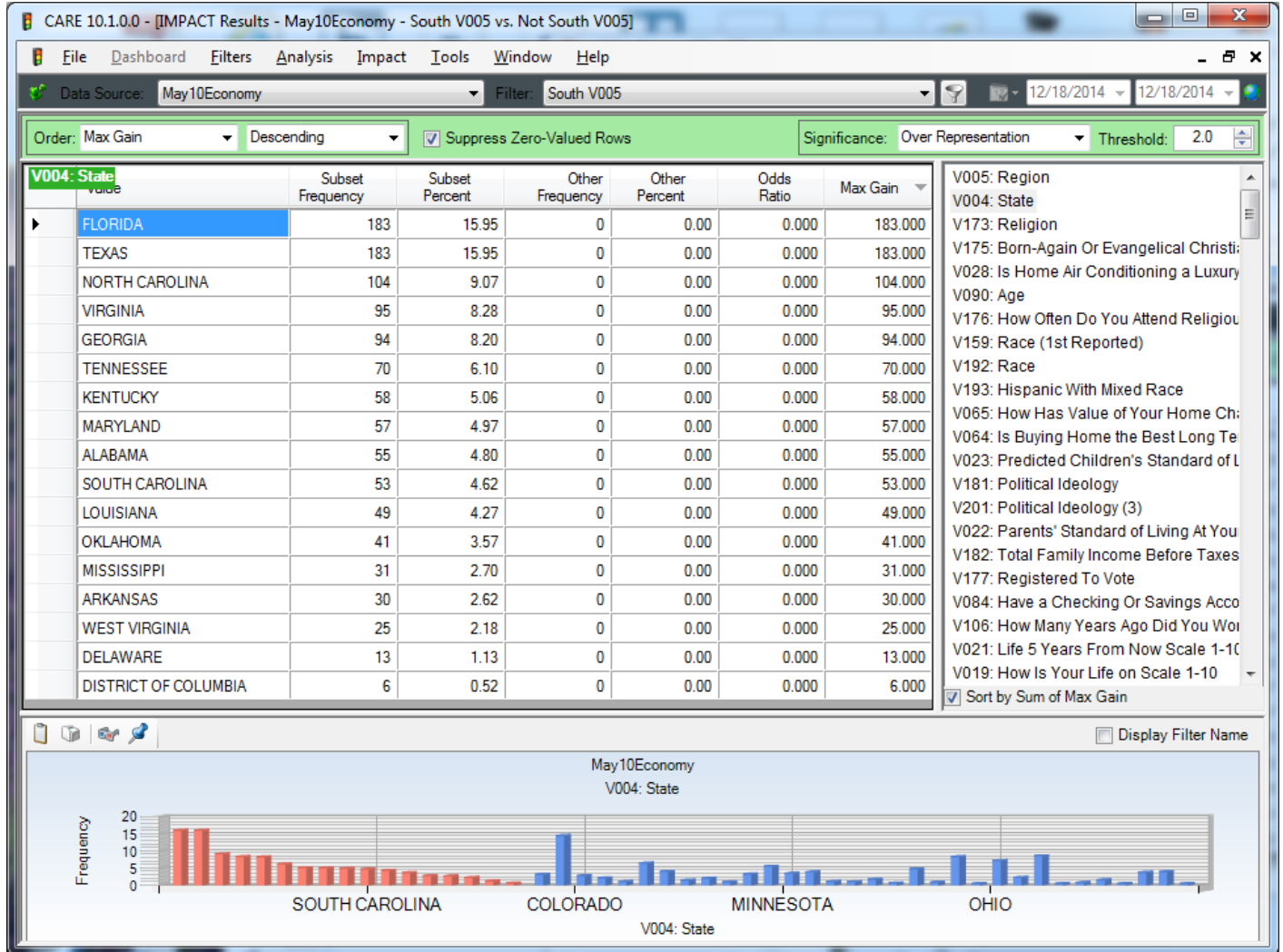
This report focuses on one aspect of some PEW economic survey data that were made available for general analyses from the PEW website (http://www.pewresearch.org/data/download-datasets/). There where hundreds of results that were easily generated once the data were converted through the Technolytix ETL process, which is discussed elsewhere on this site. This summary report will present just one of the results that we found to be the most significant and interesting dealing with personal human satisfaction. When we think of all of the various metrics of economic activity perhaps none is more important that those that related to personal human satisfaction.

Two IMPACT comparison studies were performed to mine out information that would otherwise lay dormant in the database. Since those who performed this study live in the South, a first cut was made to compare the South Region with the three other regions: West, Northeast and Midwest. To determine all significant difference, IMPACT compared the South Region to a combined subset of the other three regions (collectively).

Definition of the Southern Region

Display 1 shows the states that are in the Southern Region according to the number of respondents from each state (ordered by highest number of respondents first). The column on the right of this display gives an idea of some of the other factors that were considered in this survey. There were hundreds of factors and IMPACT handled them in a matter of seconds. The most significant in terms of the over-representation magnitudes are given at the top of the list to enable ease of considering the most significant factors first.

Display 1. Respondents Per State in the Southern Region

| V004: State Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
FLORIDA	183	15.95	0	0.00	0.000	183.000
TEXAS	183	15.95	0	0.00	0.000	183.000
NORTH CAROLINA	104	9.07	0	0.00	0.000	104.000
VIRGINIA	95	8.28	0	0.00	0.000	95.000
GEORGIA	94	8.20	0	0.00	0.000	94.000
TENNESSEE	70	6.10	0	0.00	0.000	70.000
KENTUCKY	58	5.06	0	0.00	0.000	58.000
MARYLAND	57	4.97	0	0.00	0.000	57.000
ALABAMA	55	4.80	0	0.00	0.000	55.000
SOUTH CAROLINA	53	4.62	0	0.00	0.000	53.000
LOUISIANA	49	4.27	0	0.00	0.000	49.000
OKLAHOMA	41	3.57	0	0.00	0.000	41.000
MISSISSIPPI	31	2.70	0	0.00	0.000	31.000
ARKANSAS	30	2.62	0	0.00	0.000	30.000
WEST VIRGINIA	25	2.18	0	0.00	0.000	25.000
DELAWARE	13	1.13	0	0.00	0.000	13.000
DISTRICT OF COLUMBIA	6	0.52	0	0.00	0.000	6.000

Most Significant Factors

Display 1 above lists the top factors or attributes of the respondents according to significance. The top five in order were:

- V173 – Religion
- V175 – Born-Again Or Evangelical Christian (Yes/No – the two were considered similar indicators)
- V028 – Is Home Air Conditioning a Luxury (Yes/No)
- V090 – Age (of respondent)
- V176 – How Often Do You Attend Religious Services?

Display 2 illustrated the results for the most significant, Religion.

Display 2. Religion
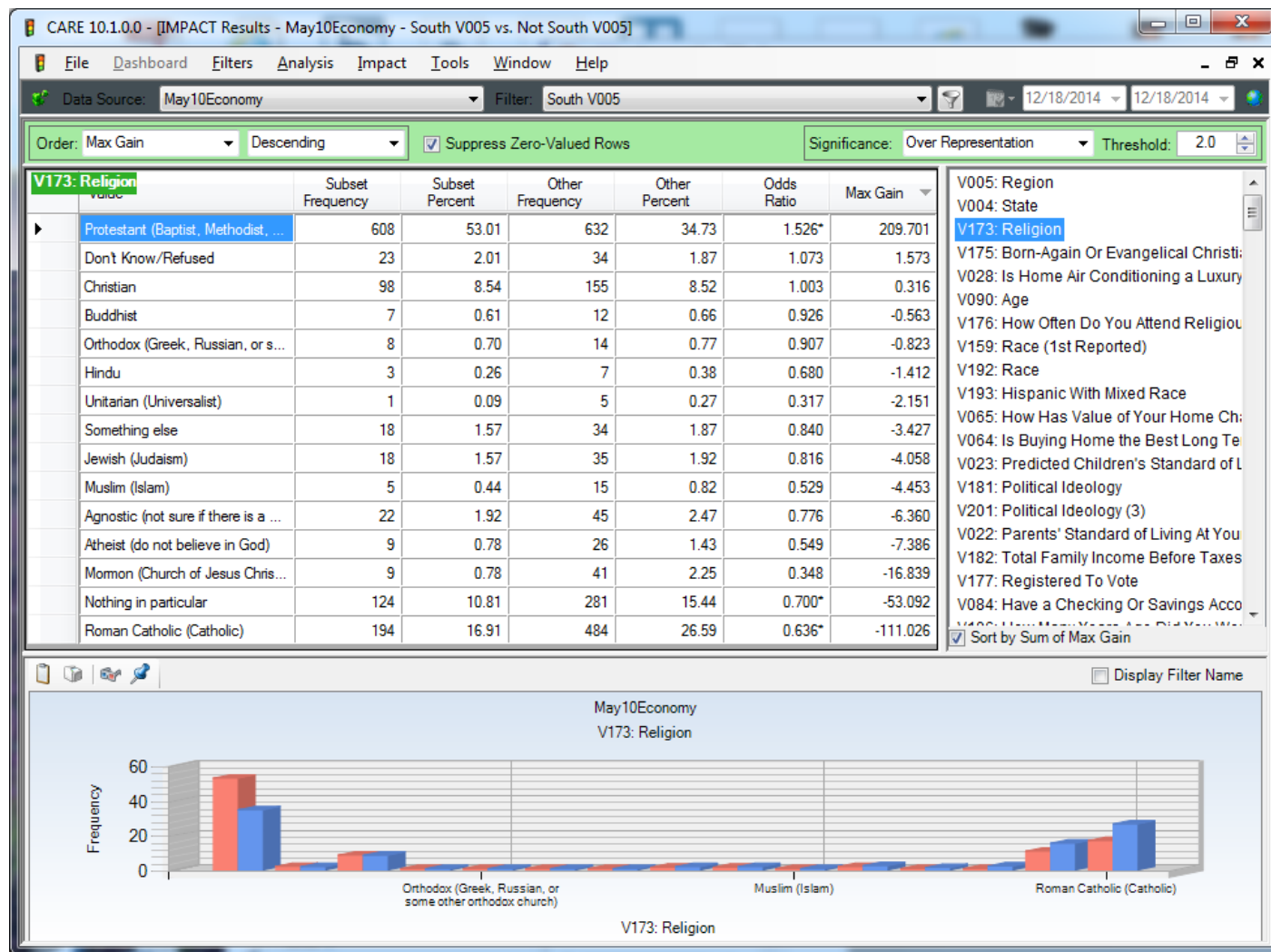
The red bars in the chart indicate the proportion of the South responses to the multiple choice question, while the blue give the comparable responses of the rest of the country. Since the bars represents relative frequency as opposed to a count of respondents, the red and blue bar in each grouping is comparable. The sum of the red bars is 100%, as is the sum of the blue bars. (See the general explanation of IMPACT outputs for a detailed explanation of each column.) The odds ratio compares the odds of the respondents in the south being of a given attribute (e.g., the first attribute is Protestant …) against the odds of the respondents in other parts of the country being of this same attribute. So, for the Protestant response, the respondents in the South Region had an Odds Ratio of 1.526 = 53.01/34.73% = 52.6 more of a likelihood of selecting this religion

(Protestant) than those from other regions. Note that the asterisk (*) on the 1.526 indicates that this is a statistically significant at the very high level of significance (at least 0.99).

The other most significant variables are easy to explain. V175 and V176 would intuitively correlate heavily with V173, and a cross-tabulation of V173 by V176 is given in Display 3. V090 is just a manifestation of the random sampling, which found a larger number of older persons willing to respond to the survey in the South Region. V028 (Is Home Air Conditioning a Luxury?) is expectedly higher from the South respondents where temperatures in the summer almost mandate air conditioning.
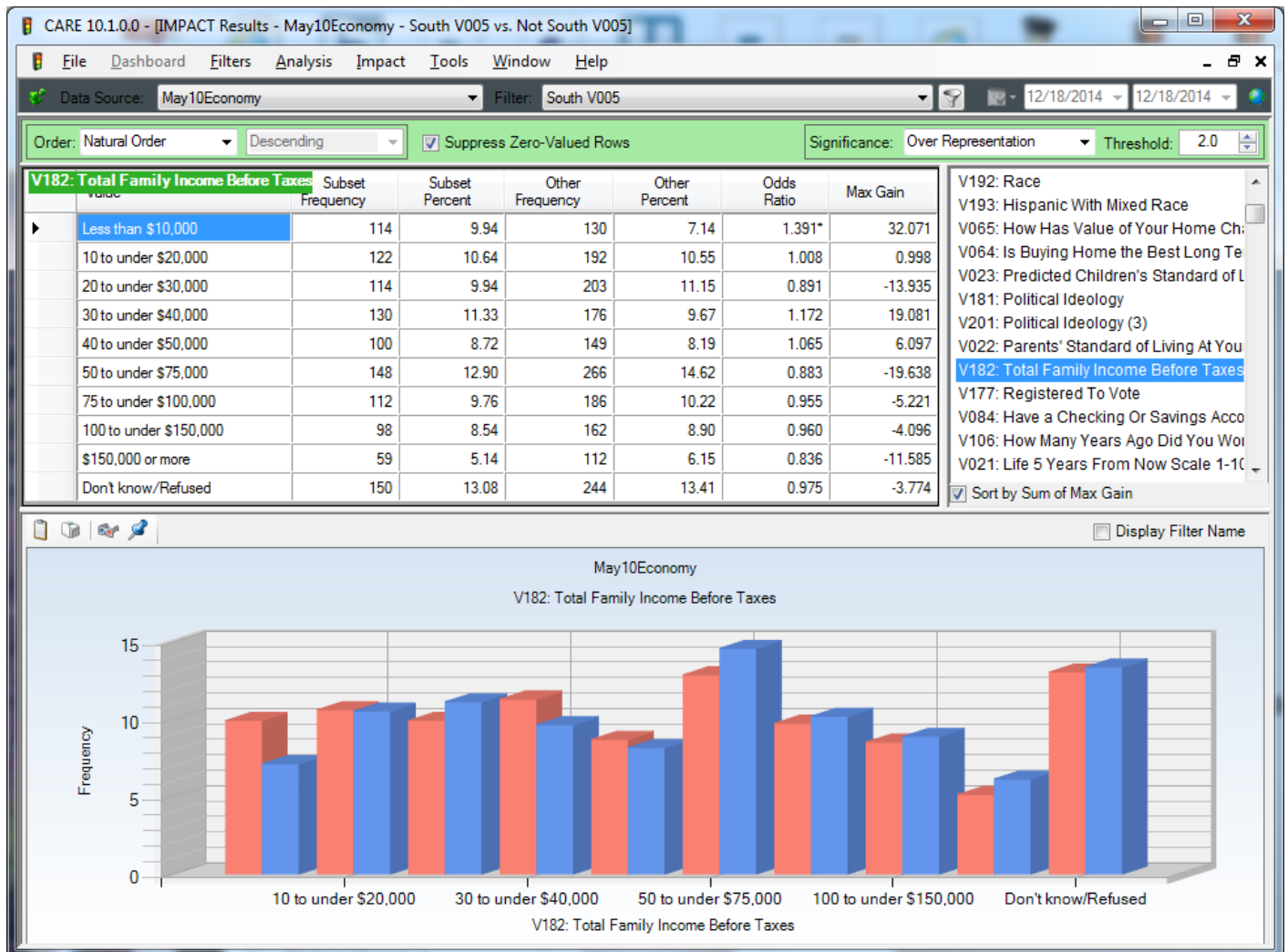
Display 3. Religion by Formal Religious Participation

	More than once a week	Once a week	Once or twice a month	A few times a year	Seldom	Never	Don't know/Refused	TOTAL
Protestant (Baptist, Methodis	254 / 64.96%	351 / 46.06%	199 / 47.61%	200 / 40.40%	168 / 35.82%	60 / 15.38%	8 / 19.05%	1240 / 41.79%
Roman Catholic (Catholic)	49 / 12.53%	257 / 33.73%	121 / 28.95%	126 / 25.45%	86 / 18.34%	36 / 9.23%	3 / 7.14%	678 / 22.85%
Mormon (Church of Jesus Christ of	9 / 2.30%	31 / 4.07%	3 / 0.72%	1 / 0.20%	3 / 0.64%	3 / 0.77%	0 / 0.00%	50 / 1.69%
Orthodox (Greek, Russian, or some	3 / 0.77%	6 / 0.79%	2 / 0.48%	3 / 0.61%	3 / 0.64%	5 / 1.28%	0 / 0.00%	22 / 0.74%
Jewish (Judaism)	2 / 0.51%	5 / 0.66%	11 / 2.63%	16 / 3.23%	10 / 2.13%	8 / 2.05%	1 / 2.38%	53 / 1.79%
Muslim (Islam)	1 / 0.26%	7 / 0.92%	1 / 0.24%	2 / 0.40%	4 / 0.85%	5 / 1.28%	0 / 0.00%	20 / 0.67%
Buddhist	1 / 0.26%	2 / 0.26%	2 / 0.48%	3 / 0.61%	7 / 1.49%	4 / 1.03%	0 / 0.00%	19 / 0.64%
Hindu	1 / 0.26%	0 / 0.00%	0 / 0.00%	4 / 0.81%	1 / 0.21%	3 / 0.77%	1 / 2.38%	10 / 0.34%
Atheist (do not believe in God)	0 / 0.00%	1 / 0.13%	1 / 0.24%	3 / 0.61%	6 / 1.28%	24 / 6.15%	0 / 0.00%	35 / 1.18%
Agnostic (not sure if there is a God)	1 / 0.26%	1 / 0.13%	1 / 0.24%	12 / 2.42%	25 / 5.33%	27 / 6.92%	0 / 0.00%	67 / 2.26%
Something else	5 / 1.28%	9 / 1.18%	6 / 1.44%	10 / 2.02%	5 / 1.07%	17 / 4.36%	0 / 0.00%	52 / 1.75%
Nothing in particular	11 / 2.81%	19 / 2.49%	20 / 4.78%	71 / 14.34%	111 / 23.67%	166 / 42.56%	7 / 16.67%	405 / 13.65%
Christian	47 / 12.02%	67 / 8.79%	47 / 11.24%	36 / 7.27%	32 / 6.82%	21 / 5.38%	3 / 7.14%	253 / 8.53%
Unitarian (Universalist)	0 / 0.00%	2 / 0.26%	0 / 0.00%	2 / 0.40%	2 / 0.43%	0 / 0.00%	0 / 0.00%	6 / 0.20%
Don't Know/Refused	7 / 1.79%	4 / 0.52%	4 / 0.96%	6 / 1.21%	6 / 1.28%	11 / 2.82%	19 / 45.24%	57 / 1.92%
TOTAL	391 / 13.18%	762 / 25.68%	418 / 14.09%	495 / 16.68%	469 / 15.81%	390 / 13.14%	42 / 1.42%	**2967 / 100.00%**

Personal Satisfaction

Family income is often considered as a mitigating factor in personal satisfaction.   Display 4 shows that the personal incomes were only significant in the lowest level (Less than $10,000), which was over-represented in the South Region.

Display 4. Family Income by Region

V182: Total Family Income Before Taxes Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Less than $10,000	114	9.94	130	7.14	1.391*	32.071
10 to under $20,000	122	10.64	192	10.55	1.008	0.998
20 to under $30,000	114	9.94	203	11.15	0.891	-13.935
30 to under $40,000	130	11.33	176	9.67	1.172	19.081
40 to under $50,000	100	8.72	149	8.19	1.065	6.097
50 to under $75,000	148	12.90	266	14.62	0.883	-19.638
75 to under $100,000	112	9.76	186	10.22	0.955	-5.221
100 to under $150,000	98	8.54	162	8.90	0.960	-4.096
$150,000 or more	59	5.14	112	6.15	0.836	-11.585
Don't know/Refused	150	13.08	244	13.41	0.975	-3.774

The most direct measure of perception of personal satisfaction is given by the question of V019, which is given in Display 5. This shows that the respondents in the South Region generally has a more positive feeling about their current situation than those in other regions, especially in the highest category, which was significant.

Display 5. How is Your Live (on a scale from 1 to 10)

V019: How Is Your Life on Scale 1-10 Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
1	12	1.07	15	0.85	1.260	2.475
2	19	1.69	39	2.20	0.767	-5.766
3	51	4.54	78	4.41	1.030	1.468
4	69	6.14	114	6.44	0.953	-3.393
5	198	17.62	337	19.04	0.925	-16.005
6	137	12.19	210	11.86	1.027	3.644
7	228	20.28	381	21.53	0.942	-13.946
8	223	19.84	371	20.96	0.947	-12.595
9	86	7.65	110	6.21	1.231	16.147
10	101	8.99	115	6.50	1.383*	27.972

Future Expectations

Display 6 shows that the satisfaction is not just considered for the present, but that there is a general optimism in the South Region for the future.

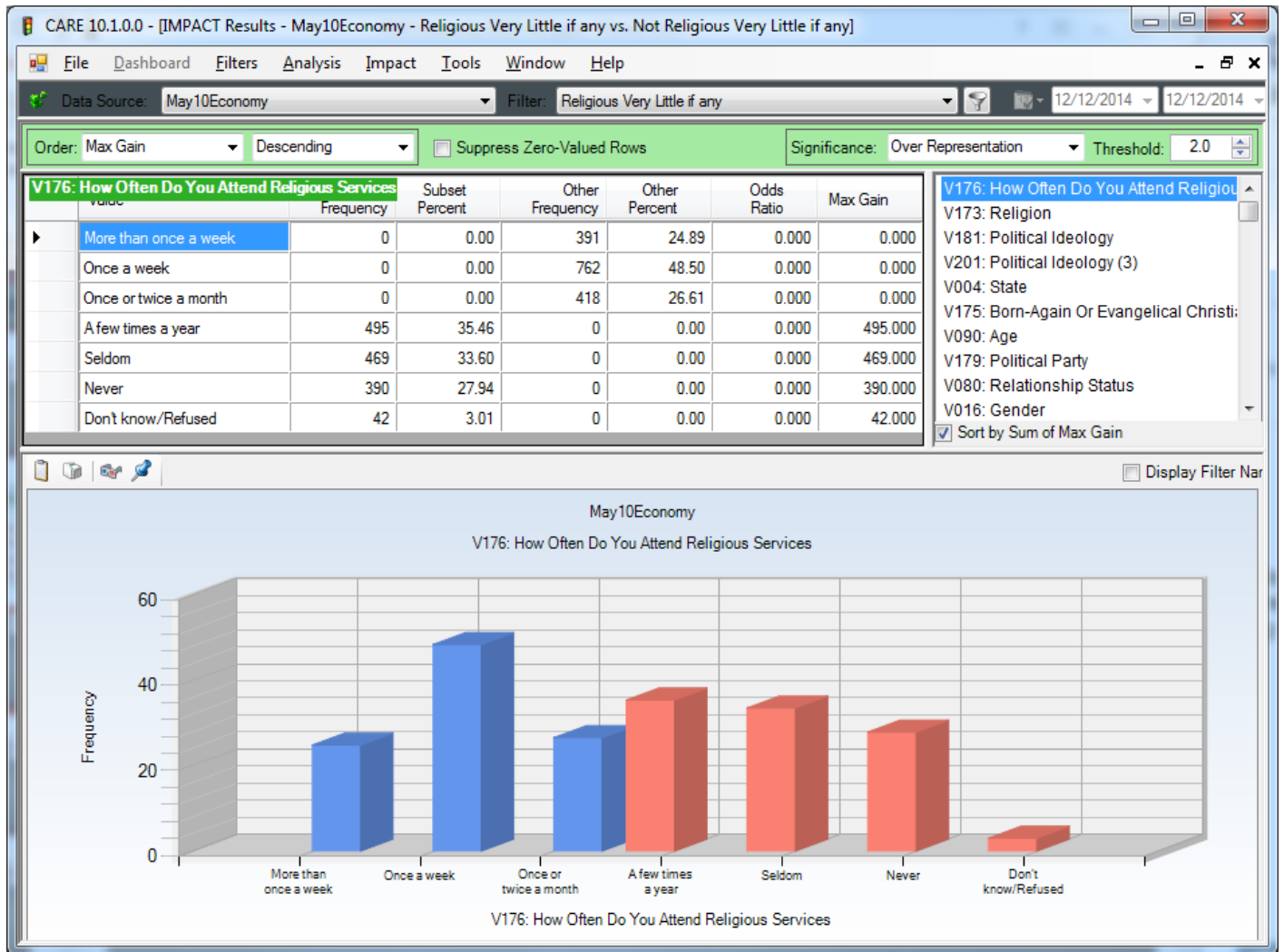### Display 6. Predicted Children's Standard of Living
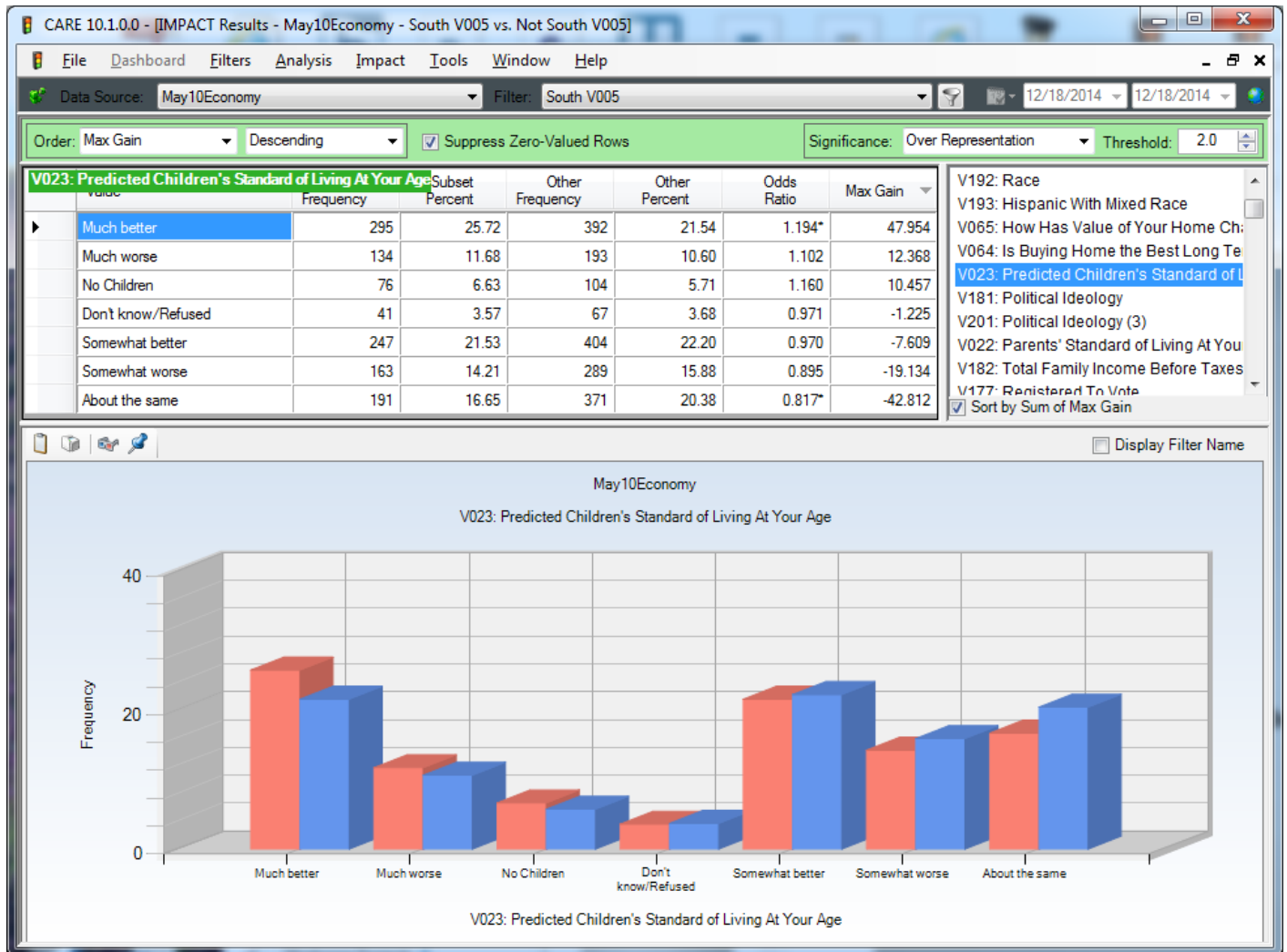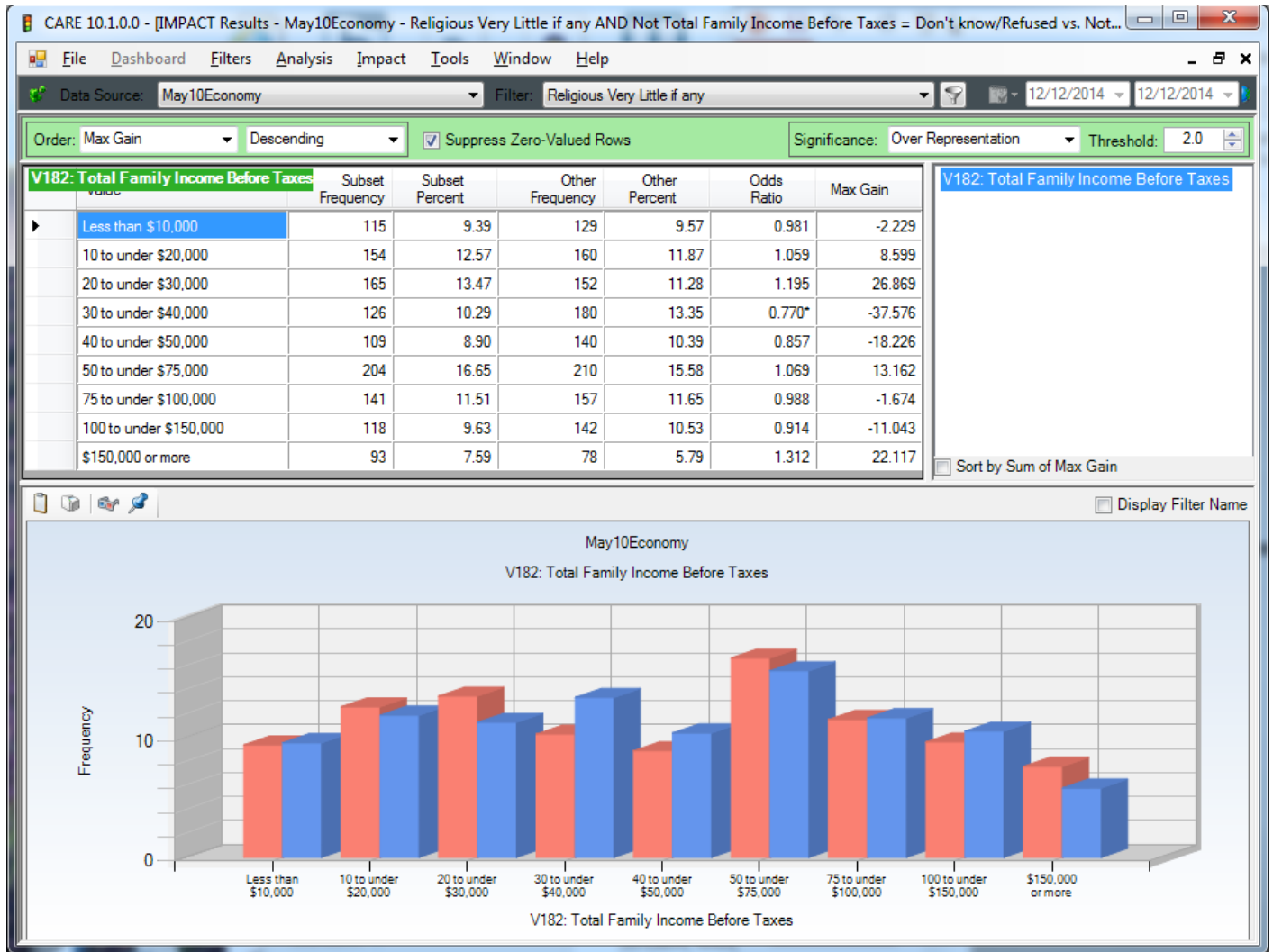

The Religion Factor

While the above shows that those in the South Region tend to be both more religiously active and have a higher sense of optimism both in the present and with regard to the future, these examples do not show a positive linkage between religious activity and these outlooks. The question could be asked: is it the South,

or is it their religious beliefs. This was an easy problem to solve. Two subsets of the data were established as given in Display 7. Please note that the red bars in the remainder of the displays are not "South Region." Both subsets contain respondents from all regions. In this case the red bars are for those who are considered to be NOT Religiously Active based on their reported participation in formal religion.

Display 7. Definition of "Religious" and "Non-Religious" Subsets of Respondents
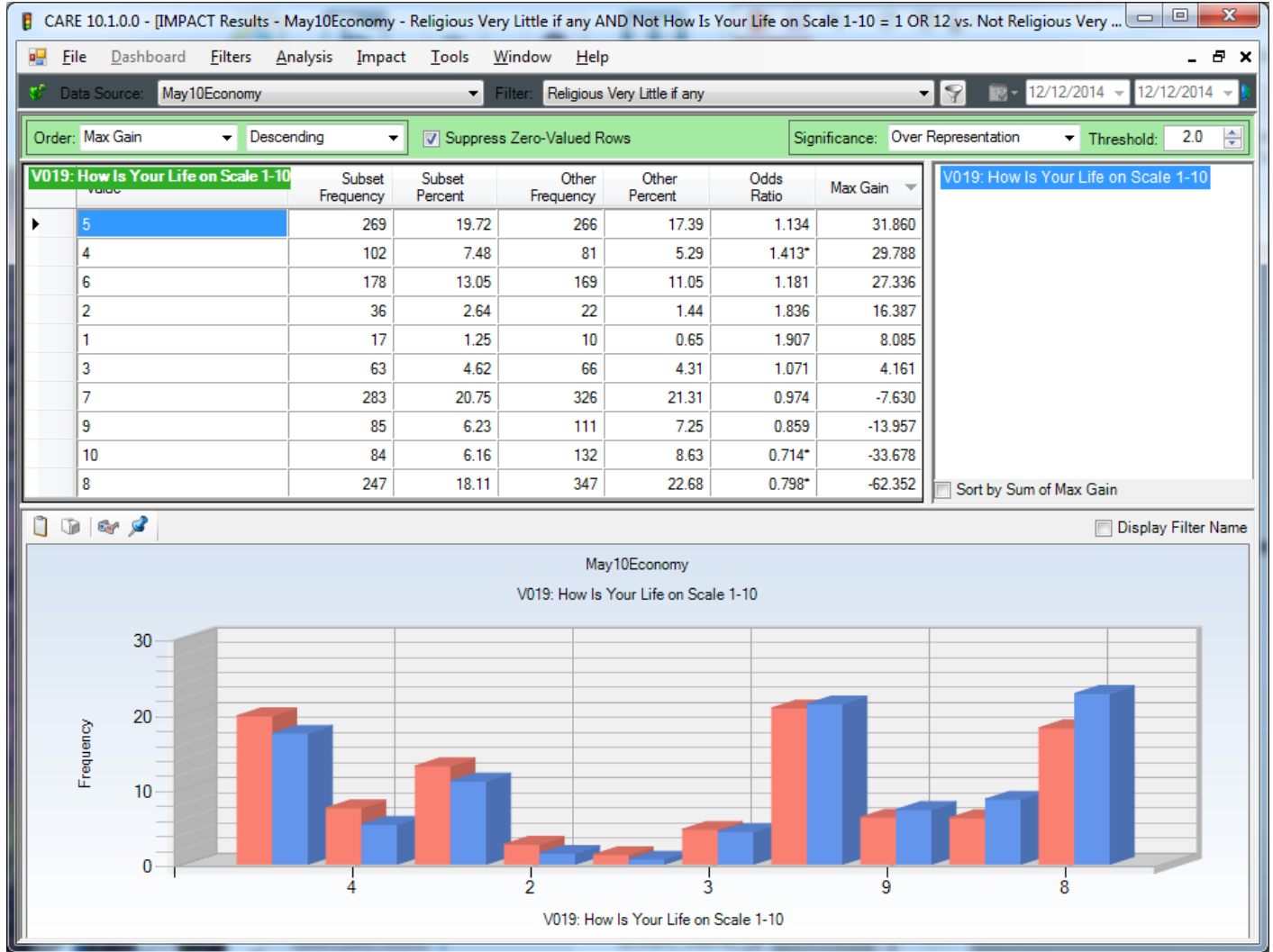
Display 8. Comparison of Incomes

V182: Total Family Income Before Taxes Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
Less than $10,000	115	9.39	129	9.57	0.981	-2.229
10 to under $20,000	154	12.57	160	11.87	1.059	8.599
20 to under $30,000	165	13.47	152	11.28	1.195	26.869
30 to under $40,000	126	10.29	180	13.35	0.770*	-37.576
40 to under $50,000	109	8.90	140	10.39	0.857	-18.226
50 to under $75,000	204	16.65	210	15.58	1.069	13.162
75 to under $100,000	141	11.51	157	11.65	0.988	-1.674
100 to under $150,000	118	9.63	142	10.53	0.914	-11.043
$150,000 or more	93	7.59	78	5.79	1.312	22.117

Display 8 above shows that any differences found in subsequent displays will not be attributable to differences in income levels. The only value that showed a significant difference was in the $30-40,000 interval, which favored the religious group. Being almost in the center of the distribution this cannot really be interpreted as either a positive of a negative.
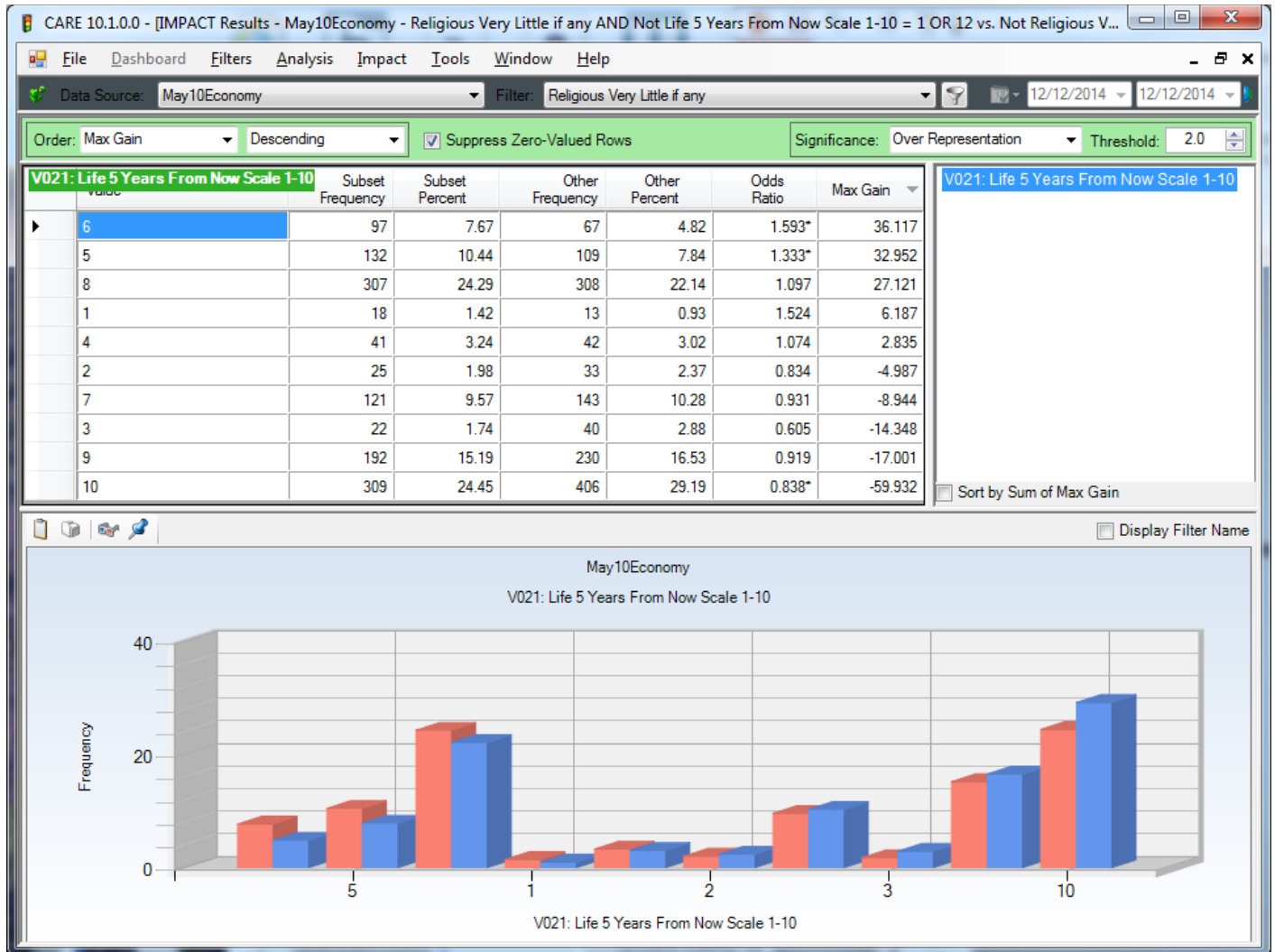
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Display 9. How is Your Life? On a Scale from 1-10

V019: How Is Your Life on Scale 1-10	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
5	269	19.72	266	17.39	1.134	31.860
4	102	7.48	81	5.29	1.413*	29.788
6	178	13.05	169	11.05	1.181	27.336
2	36	2.64	22	1.44	1.836	16.387
1	17	1.25	10	0.65	1.907	8.085
3	63	4.62	66	4.31	1.071	4.161
7	283	20.75	326	21.31	0.974	-7.630
9	85	6.23	111	7.25	0.859	-13.957
10	84	6.16	132	8.63	0.714*	-33.678
8	247	18.11	347	22.68	0.798*	-62.352

For this display we used the "Max Gain" indicator to arrange the results. A high Max Gain is indicative of a large representation from the non-religious subset, and it correlates heavily with a large Odds Ratio. Thus, we see the non-religious tending to be somewhat in the middle (4, 5 and 6). They are over-represented almost by a factor of 2 in the lowest satisfaction responses (1 and 2). At the other end are the religious participants who show over-representation in the greatest satisfaction indications (8, 9 and 10), cells 8 and 10 of which are statistically significant.

Optimism for the future is highly correlated with current satisfaction indicators, as illustrated in Display 10.

Display 10. Life Five Years from Now on a Scale from 1-10

V021: Life 5 Years From Now Scale 1-10 Value	Subset Frequency	Subset Percent	Other Frequency	Other Percent	Odds Ratio	Max Gain
6	97	7.67	67	4.82	1.593*	36.117
5	132	10.44	109	7.84	1.333*	32.952
8	307	24.29	308	22.14	1.097	27.121
1	18	1.42	13	0.93	1.524	6.187
4	41	3.24	42	3.02	1.074	2.835
2	25	1.98	33	2.37	0.834	-4.987
7	121	9.57	143	10.28	0.931	-8.944
3	22	1.74	40	2.88	0.605	-14.348
9	192	15.19	230	16.53	0.919	-17.001
10	309	24.45	406	29.19	0.838*	-59.932

Conclusion

The displays above were intended to demonstrate how survey data can be processed using the techniques of Technolytix. The results obtained came as a complete surprise to those performing the analysis in that literally hundreds of other factors were included in the survey. However, when it came to the satisfaction metrics, all demographics were highly correlated to the religion indicators.

We are sure that those who created the survey were not expecting such results either, and this surfaces one thing about the IMPACT capabilities of Technolytix. You do not have to anticipate ahead of time what to look for, as is true in most analytic tools. IMPACT popped out the most significant variable essentially "at first look," and all subsequent analytics were effectively to gather more information as to the reasons for this first over-arching finding.