HEALTH AND RETIREMENT STUDY

# Health and Retirement Study Core 2004-2010 Linkage to Occupational Information Network 5.0 and 10.0 Data

## Data Description and Usage

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**To the Restricted Data Investigator:** This restricted data set is intended for exclusive use by you and the persons specified in the Agreement for Use of Restricted Data from the Health and Retirement Study and/or the Supplemental Agreement with Research Staff for Use of Restricted Data from the Health and Retirement Study.

If there are any questions about this data set and its use, refer to the HRS Restricted Data page (https://hrs.isr.umich.edu/data-products/restricted-data) or contact the HRS Help Desk (hrsquestions@umich.edu).

## Accessing the Data

- The Health and Retirement Study (HRS) Core 2004-2010 Linkage to Occupational Information Network 5.0 and 10.0 Data (O*NET) is available to registered HRS data users as a restricted data product housed in a secure data enclave at the University of Michigan Institute for Social Research.
- The enclave can be accessed through a virtual desktop infrastructure (VDI).
- All analyses with the data that are requested for export from the enclave undergo a strict disclosure limitation review.
- Visit the HRS website to apply for access.

## Citing the Data

- The research reported herein was performed pursuant to a grant from the U.S. Social Security Administration (SSA) funded as part of the Retirement and Disability Research Consortium through the Michigan Retirement and Disability Research Center Award RDR18000002.
- Please include the following citation in any research reports, papers, or publications based on the HRS Core 2004-2010 Linkage to O*NET 5.0 and 10.0 Data:

  "Carpenter, R., Carr, D., Chen, Q., Hafeez. A., Helppie-McFall, B., & Sonnega, A. Health and Retirement Study Core 2004-2010 Linkage to Occupational Information Network 5.0 and 10.0 Data: Data Description and Usage, Version 1. Ann Arbor, MI (2022)."

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# Data Description and Usage

## 1. Overview of Project

This document describes a dataset that provides a linkage between measures and variables provided in "historical" databases of the Occupational Information Network (O*NET) with detailed 2000 Census occupational codes found in 2004-2010 restricted access Health and Retirement Study (HRS) data releases. Specifically, this project links detailed worker and occupational characteristics data taken from the O*NET 5.0 and 10.0 databases with detailed 2000 Census occupational codes found in restricted access HRS datasets for Core interview years 2004 to 2010.

The *Health and Retirement Study Core 2004-2010 Linkage to Occupational Information Network 5.0 and 10.0 Data* (HRS-O*NET 5.0 and HRS-O*NET 10.0, hereafter) provides occupational data for up to 440 unique 2010 Census occupational codes per HRS wave. The datasets contain several thousand variables related to worker and occupational characteristics. For most research purposes, we expect that users are likely to use the variables containing "mean" in the name, while many other variables are more likely to be used to better understand the quality, reliability and sources of data for each occupation and its characteristics.

The variables are distributed across nine datasets that reflect nine different O*NET dimensions: Knowledge, Skills, Abilities, Interests, Work Values, Work Styles, Work Activities, Work Context, and Job Zones. The constructed variables found in the HRS-O*NET 5.0 and HRS-O*NET 10.0 data are based on data files released by the O*NET 5.0 and 10.0 databases, which were released in April 2003 and June 2006, respectively. For more details concerning O*NET data and measurement, see the sources listed under *The O*NET Database: A Primary Source of Occupational Information* and *Science Behind the O*NET Database* at https://www.onetcenter.org/database.html#overview.

### 1.1 O*NET 5.0 Linkage to 2000 Census Occupational Codes for 2004-2010 HRS

This section of the document describes the dataset that provides a linkage between measures and variables provided in the O*NET 5.0 database (released April 2003) with detailed 2000 Census occupational codes found in the restricted access HRS data from the 2004-2010 HRS Core interviews. Occupational data are available for respondents' jobs held and reported in those years.[1] Using the HRS "hhidpn" respondent identification variable, the HRS-O*NET datasets can be linked with any user-accessible HRS dataset at the respondent level.

[1] This dataset does not link to jobs HRS respondents first reported after 2010. To obtain access to such occupation data, please refer to https://hrs.isr.umich.edu/data-products/restricted-data/available-products/12500. Furthermore, this dataset does not create a linkage to occupational data outside of the HRS, please use data from https://claudepeppercenter.fsu.edu/onet/ to create a linkage to other occupational data.

The HRS-O*NET 5.0 datasets provide occupational data for up to 440[2] unique 2000 Census occupational codes per HRS wave. They contain more than 1700 variables related to worker and occupational characteristics. The variables are distributed across nine datasets that are reflective of nine different O*NET dimensions: Knowledge, Skills, Abilities, Interests, Work Values, Work Styles, Work Activities, Work Context, and Job Zones. These data were released between April 15, 2003 and September 12, 2003, so these data are most representative of jobs in the early 2000s.

The O*NET 5.0 dataset was the first O*NET release to use the current methodology, although not all occupations had data for all variables. This dataset may be most useful for researchers wanting to incorporate the oldest job characteristics measures that are gathered using the current methodology, either because they may be more representative of jobs held in the 1990s and early 2000s or as part of a longitudinal analysis taking into account changes in job characteristics. However, to maximize sample size, it might be best to use the 10.0 dataset or merge in the values from the 10.0 dataset where the values for an occupation are not available in the 5.0 dataset. *Note: O*NET recommends that the Skills data be used for longitudinal research only beginning with the O*NET 15.0 database.*

For more information about the O*NET 5.0 data and measurement, refer to the O*NET Database Releases Archive page: **https://www.onetcenter.org/db_releases.html.**

### 1.2 O*NET 10.0 Linkage to 2000 Census Occupational Codes for 2004-2010 HRS

This section of the document describes the dataset that provides a linkage between measures and variables provided in the O*NET 10.0 database (released June 2006) with detailed 2000 Census occupational codes found in the restricted access HRS data from the 2004-2010 HRS Core interviews. Occupational data are available for respondents' jobs held and reported in those years.[3] Using the HRS "hhidpn" respondent identification variable, the HRS-O*NET datasets can be linked with any user-accessible HRS dataset at the respondent level.

The HRS-O*NET 10.0 data provide occupational data for up to 440[4] unique 2000 Census occupational codes per HRS wave. They contain more than 4,500[5] variables related to worker and occupational characteristics. The variables are distributed across nine datasets that are reflective of nine different

[2] For the 2004 wave of data, there are 402 unique 2000 Census occupational codes. For the 2006 wave of data, there are 425 unique 2000 Census occupational codes. For the 2008 wave of data, there are 408 unique 2000 Census occupational codes. For the 2010 wave of data, there are 440 unique 2000 Census occupational codes.
[3] This dataset does not link to jobs HRS respondents were working in after 2010. To obtain access to such occupation data, please refer to https://hrs.isr.umich.edu/data-products/restricted-data/available-products/12500. Furthermore, this dataset does not create a linkage to occupational data outside of the HRS, please use data from https://claudepeppercenter.fsu.edu/onet/ to create a linkage to other occupational data.
[4] For the 2004 wave of data, there are 402 unique 2000 Census occupational codes. For the 2006 wave of data, there are 425 unique 2000 Census occupational codes. For the 2008 wave of data, there are 408 unique 2000 Census occupational codes. For the 2010 wave of data, there are 440 unique 2000 Census occupational codes.
[5] The larger number of variables available in the 10.0 data is accounted for by having more descriptive information on each of the nine measures (e.g., standard errors, samples size, confidence intervals etc…)

O*NET dimensions: Knowledge, Skills, Abilities, Interests, Work Values, Work Styles, Work Activities, Work Context, and Job Zones. These data were released between June 2006 and December 2006, so are most representative of jobs in the mid-2000s. For more details concerning O*NET 10.0 data and measurement, refer to the O*NET Database Releases Archive page: **https://www.onetcenter.org/db_releases.html.**

## 2. HRS Linkage to O*NET Database through 2000 Census Occupational Codes

Data releases for HRS 2004-2010 utilize the 2000 Census occupational codeframe. The HRS collects detailed respondent information on occupations, resulting in respondent-level occupational information for up to 440 unique 2000 Census level occupations for both the 5.0 and 10.0 O*NET-HRS datasets. In the final Historical HRS-O*NET Linkage, restricted access HRS respondent level data were linked to O*NET data through 2000 Census occupational codes. Military occupational codes do not have O*NET data in the HRS-O*NET datasets because detailed occupational information for military occupations are not included in the O*NET database.

Overall, the final datasets provide worker and occupational characteristics for approximately 1700 measures in the HRS-O*NET 5.0 data release and approximately 4500 measures in the HRS-O*NET 10.0 data release. The O*NET 5.0 dataset was the first to use the "new" O*NET methodology. It did not have all measures available for all occupations. Therefore, the HRS-O*NET 5.0 dataset also has substantial missing data. However, these data may be more representative of jobs held in the early 2000s than the 10.0 or 26.1 datasets, so may be more suitable for some types of analyses than data from later O*NET releases. Differences between HRS-O*NET 5.0 and 10.0 are noted below in each domain subsection of Section 5.

### 2.1 Creation of Crosswalk Linkage

#### Creation of O*NET SOC-Census 2000 Crosswalks

The HRS-O*NET 5.0 data were created by linking occupation-specific data from the O*NET 5.0 database to the respondent data in the HRS, at the 2000 Census occupational code level. The O*NET database provides detailed occupational information at the 2000 O*NET-SOC level. Therefore, a crosswalk linking 2000 O*NET-SOC occupational codes to 2000 Census occupational codes was created to enable linkage of the HRS-O*NET 5.0 dataset. The creation of the 2000 O*NET SOC-2000 Census crosswalk was performed in two steps:

(1) The 2000 O*NET-SOC codes were linked to 2000 SOC codes by using the 2000 SOC Classification and Coding Structure crosswalk found on the U.S. Bureau of Labor Statistics (BLS) website (https://www.bls.gov/soc/2000/socguide.htm), resulting in a 2000 O*NET SOC-2000 SOC crosswalk.
(2) The 2000 O*NET SOC-2000 SOC crosswalk was merged to 2000 Census occupational codes using a crosswalk provided by the U.S. Census Bureau: (https://www2.census.gov/programs-surveys/demo/guidance/industry-occupation/occ2000t.pdf).

The end result was a crosswalk that linked 2000 O*NET-SOC occupational codes to 2000 Census occupational codes. Because the 2000 O*NET-SOC taxonomy is a more detailed occupational coding scheme, the final crosswalk resulted in some cases where multiple 2000 O*NET-SOC codes linked to a single 2000 Census code. In some instances, the project team had to make decisions about the linkage of particular occupations. **Appendix A** *(Table 1)* details the specific decisions we made regarding these crosswalk linkages. The crosswalk was examined in detail for face validity by multiple members of our project team and validated by Pam Frugoli (O*NET and Competency Model Team Lead, Employment and Training Administration, and U.S. Department of Labor).

Similarly, the HRS-O*NET 10.0 data were created by linking occupation-specific data from the O*NET 10.0 database to the respondent data in the HRS, at the 2000 Census occupational code level. The O*NET 10.0 database provides detailed occupational information at the 2006 O*NET-SOC level. Therefore, a crosswalk linking 2006 O*NET-SOC occupational codes to 2000 Census occupational codes was created to enable linkage of the HRS-O*NET 10.0 dataset. The creation of the 2006 O*NET SOC-2000 Census crosswalk was performed in three steps:

(1) The 2006 O*NET-SOC codes were linked to 2000 O*NET-SOC codes using a crosswalk provided on the O*NET website (https://www.onetcenter.org/taxonomy/2006/walk.html), resulting in a 2006 O*NET SOC-2000 O*NET SOC crosswalk.
(2) The 2006 O*NET SOC-2000 O*NET SOC crosswalk was merged to 2000 SOC codes by using the 2000 SOC Classification and Coding Structure crosswalk found on the U.S. Bureau of Labor Statistics (BLS) website (https://www.bls.gov/soc/2000/socguide.htm), resulting in a 2006 O*NET SOC-2000 SOC crosswalk.
(3) The 2006 O*NET SOC-2000 SOC crosswalk was merged to 2000 Census occupational codes using a crosswalk provided by the U.S. Census Bureau: (https://www2.census.gov/programs-surveys/demo/guidance/industry-occupation/occ2000t.pdf).

The end result was a crosswalk that linked 2006 O*NET-SOC occupational codes to 2000 Census occupational codes. Because the 2006 O*NET-SOC taxonomy is a more detailed occupational coding scheme, the final crosswalk resulted in some cases where multiple 2006 O*NET-SOC codes linked to a single 2000 Census code. In some instances, the project team had to make decisions about the linkage of particular occupations. **Appendix A** *(Table 2)* details the specific decisions we made regarding these crosswalk linkages. The crosswalk was examined in detail for face validity by multiple members of our project team and validated by Pam Frugoli (O*NET and Competency Model Team Lead, Employment and Training Administration, and U.S. Department of Labor).

## 2.2 Linkage to HRS Data

To merge O*NET 5.0-Census 2000 and O*NET 10.0-Census 2000 datasets with the HRS, we started with the HRS Cross-Wave Occupation and Industry Dataset. Starting with occupation codes from 2004 through 2010, we first forward- and backfilled J168_2000 occupation codes for respondents who indicated they were in the same jobs and occupations as a wave in which their occupation code was available. We also filled with corrected occupation codes from the J062_2000 items where relevant. We

then merged the O*NET dataset to each non-missing occupation observation from 2004-2010[6]. The HRS-O*NET 5.0 and HRS-O*NET 10.0 files contain the HRS "hhidpn" respondent identification variable; therefore, these data may be linked with any user-accessible HRS dataset at the respondent level.

## 3. Overview of the Occupational Information Network (O*NET) Database

The O*NET database is a high-quality, detailed source of occupational information that is useful for understanding the changing nature of work and how it impacts the U.S. workforce and economy. The O*NET 5.0 database provides standardized, occupation-specific measures related to approximately 1,166 occupations. The O*NET 10.0 database provides standardized, occupation-specific measures related to approximately 949 occupations. Both databases include measures that describe work and worker characteristics. Details about these O*NET databases can be found on the O*NET Database Releases Archive webpage: https://www.onetcenter.org/db_releases.html.

O*NET measures are derived from the O*NET Content Model, which is a framework that identifies the most important information needed for understanding the rapidly changing context of work. Measures are broken down into six major domains: Worker Characteristics, Worker Requirements, Experience Requirements, Occupational Requirements, Workforce Characteristics, and Occupation-Specific Information. For more information about the O*NET Content Model, please refer to their website: https://www.onetcenter.org/content.html. For more information detailing a historical summary of database content changes, please refer to their website: https://www.onetcenter.org/dictionary/27.0/excel/appendix_changes.html.

### 3.1 O*NET 5.0 Data

The April 2003 release of the O*NET 5.0 Database represented the first database release to incorporate data from the data collection program, which included surveys of individuals in each occupation ("incumbent") rather than data only from occupational analysts. It was the first of planned semiannual updates of the database to update all O*NET-SOC occupations. It uses the O*NET-SOC 2000 taxonomy. Information about the creation of the O*NET 5.0 Database can be found here: https://www.onetcenter.org/dl_files/DataDictionary5_1.pdf

### 3.2 O*NET 10.0 Data

The O*NET 10.0 Database includes updates to many more occupations based on surveys of incumbents, relative to the 5.0 data. This dataset uses the O*NET-SOC 2006 taxonomy. For information about the changes to the taxonomy between O*NET 5.0 and 10.0, please visit https://onetcenter.org/dl_files/UpdatingTaxonomy_Summary.pdf.

### 3.3 Comparability of HRS-O*NET 5.0/10.0 and HRS-O*NET 26.1 Data Releases

[6] As part of this process, it emerged that there are some entries in the 2000 Census occupations in the HRS data that don't exist in the 2000 Census taxonomy. These "wild codes" do not have O*NET data linked to them and can therefore be excluded from analysis.

In June 2022, the HRS released HRS-O*NET data that provide a linkage between measures and variables in the O*NET 26.1 with the detailed 2010 Census occupational codes found in the restricted access Health and Retirement Study (HRS) occupation data from 2010 forward. The HRS-O*NET 5.0, 10.0 and 26.1 data releases were designed to be comparable. They each contain datasets for the same 9 dimensions, the same measures within each dimension, and each variable with the same name is on the same scale across datasets.

Comparable measures correlate as expected, mostly strong, across data releases 5.0 and 10.0. When the 2000 Census occupation crosswalks 1:1 with a Census 2010 occupation and the HRS respondent's occupation codes match the crosswalk for the 2000 and 2010 Census codes, we also see correlations as expected, mostly strong, between the 10.0 and 26.1 measures. As expected, given the changing nature of work, we see slightly weaker correlations between 5.0 and 26.1 measures. The project team examined the correlations and determined that the weaker correlations appear to be in keeping with changes in different occupations over time. For example, "Selective Attention" (work abilities 37), which is the ability to concentrate on a task over a period of time without being distracted. This is a variable that has one of the lowest correlations between O*Net 5.0, 10.0 and 26.1. It seems reasonable that this has become more important over time as cell phones and other new technologies lead to more distraction, and/or many previously routine jobs become more complex. This is also likely true to different extents for different occupations, leading to a weaker correlation between O*Net 10 and 26.1. As another example, the correlation for "Face-to-face conversations" (work context 20) has declined, again possibly related to the increased use of cellular phones, email and other electronic means of communication.

A few variables do change between O*NET 5.0, 10.0 and 26.1. These are variables related to the source of the data and the dates at which the data for a particular occupation-measure combination was last released. With respect to the source of the data, the each HRS-O*NET dataset contains a only a subset of the possible domain source flags, based on the methods in use at the time the data were collected. Additionally, only the job zones dimension in the HRS-O*NET 5.0 dataset lacks date variables. Additionally, the "count_onet20XX" variables differ in the last 2 characters of the variable name but all indicate the number of O*NET SOC codes (2000, 2006 or 2019 taxonomies for 5.0, 10.0 and 26.1, respectively) were combined into a particular Census code (2000 or 2010 taxonomies for 5.0 and 10.0 or 26.1, respectively).

## 4. What measures from the O*NET databases are included in this dataset?

The HRS-O*NET 5.0 and HRS-O*NET 10.0 databases include measures that describe work and worker characteristics. Our HRS-O*NET datasets provide data on nine different O*NET dimensions which the team and a group of researchers we consulted thought would be useful to analysts in analyses of HRS data. For more information about O*NET dimensions, please refer to this website for 5.0: https://www.onetcenter.org/dl_files/DataDictionary5_0.pdf, and refer to this website for 10.0: https://www.onetcenter.org/dl_files/DataDictionary10_0.pdf. The nine dimensions are outlined and briefly discussed below.

(1) **Knowledge**: Worker requirements defined as organized sets of principles and facts applied in general domains. The knowledge dimension consists of two types of attributes:

a. How important is this knowledge for the current job [on a scale from 1 (not important to 5 (extremely important)]?

b. What level of this knowledge is needed for the current job [on a scale from 0 (lowest) to 7 (highest)]?

(2) **Skills**: Worker requirements defined as developed capacities that facilitate learning or the more rapid acquisition of knowledge and performance including (1) basic skills, (2) complex problem-solving skills, (3) resource management skills, (4) social skills, (5) systems skills, and (6) technical skills. The skills dimension consists of two types of attributes:

a. How important is this skill for the current job [on a scale from 1 (not important to 5 (extremely important)]?

b. What level of this skill is needed for the current job [on a scale from 0 (lowest) to 7 (highest)]?

(3) **Abilities:** Worker characteristics defined as enduring attributes of the individual that influence performance, including (1) cognitive abilities, (2) physical abilities, (3) psychomotor abilities, and (4) sensory abilities. The abilities dimension consists of two types of attributes:

a. How important is this ability for the current job [on a scale from 1 (not important to 5 (extremely important)]?

b. What level of this ability is needed for the current job [on a scale from 0 (lowest) to 7 (highest)]?

(4) **Interests:** Worker characteristics defined as preferences for work environments and outcomes. There are six dimensions of occupational interests: (1) Realistic, (2) Investigative, (3) Artistic, (4) Social, (5) Enterprising, and (6) Conventional.

(5) **Work Values:** Worker characteristics defined as the occupational reinforcer patterns (ORPs) that indicate which work values and needs are likely to be reinforced or satisfied by a particular O*NET-SOC occupation. There are six dimensions of work values: (1) Achievement, (2) Working Conditions, (3) Recognition, (4) Relationships, (5) Support, and (6) Independence.

(6) **Work Styles:** Worker characteristics defined as personal characteristics that can affect how well someone performs a job. The work styles dimension consists of one attribute, "how important are the work style characteristics for the performance of the current job [on a scale from 1 (not important) to 5 (extremely important)]?"

(7) **Work Context:** Occupational requirements that relate to the physical and social factors that influence the nature of work including (1) interpersonal relationships, (2) physical work conditions, and (3) structural job characteristics.

(8) **Job Zones:** Refers to the occupational preparation level (education, experience, and on-the job training) generally required for specific O*NET-SOC occupations. There are five job zones: (1) Little or No Preparation Needed; (2) Some Preparation Needed; (3) Medium Preparation Needed; (4) Considerable Preparation Needed; and (5) Extensive Preparation Needed.

(9) **Work Activities:** Occupational requirements that refer to work behaviors that typically occur across a very large number of occupations, including (1) information inputs, (2)

interactions with others, (3) mental processes, and (4) work output. These are performed in almost all job families and industries. The work activities dimension consists of two types of attributes:

a. How important is the activity for the current job [on a scale from 1 (not important) to 5 (extremely important)]?

b. What level of activity is needed to perform the current job [on a scale from 0 (lowest) to 7 (highest)]?

## 5. Variables in the HRS-O*NET Dataset: Creation and Meaning

The HRS-O*NET data product contains variables related to nine O*NET dimensions: knowledge, skills, abilities, interests, work styles, work values, work activities, work context, and job zones. To reduce dataset size, nine separate datasets have been created, one for each of the nine O*NET dimensions. Any or all of these datasets may be combined by merging the datasets using the HRS "hhidpn" respondent identification variable. The nine datasets are named descriptively for each O*NET version as follows:

**For O*NET 5.0-HRS 2004-2010 linkage**

1) Knowledge: **hrs_onet5_knowledge_2004-2010v1.dta**
2) Skills: **hrs_onet5_skills_2004-2010v1.dta**
3) Abilities: **hrs_onet5_abilities_2004-2010v1.dta**
4) Interests: **hrs_onet5_interests_2004-2010v1.dta**
5) Work Values: **hrs_onet5_workvalues_2004-2010v1.dta**
6) Work Styles: **hrs_onet5_workstyles_2004-2010v1.dta**
7) Work Context: **hrs_onet5_workcontext_2004-2010v1.dta**
8) Job Zones: **hrs_onet5_jobzones_2004-2010v1.dta**
9) Work Activities: **hrs_onet5_workactivities_2004-2010v1.dta**

**For O*NET 10.0-HRS 2004-2010 linkage**

1) Knowledge: **hrs_onet10_knowledge_2004-2010v1.dta**
2) Skills: **hrs_onet10_skills_2004-2010v1.dta**
3) Abilities: **hrs_onet10_abilities_2004-2010v1.dta**
4) Interests: **hrs_onet10_interests_2004-2010v1.dta**
5) Work Values: **hrs_onet10_workvalues_2004-2010v1.dta**
6) Work Styles: **hrs_onet10_workstyles_2004-2010v1.dta**
7) Work Context: **hrs_onet10_workcontext_2004-2010v1.dta**
8) Job Zones: **hrs_onet10_jobzones_2004-2010v1.dta**
9) Work Activities: **hrs_onet10_workactivities_2004-2010v1.dta**

For some dimensions, two types of values are calculated. One is the importance (IM) value of a job characteristic for a given occupation, and one is the level (LV). Importance is defined as the degree to which particular forms of knowledge are important to each occupation. This is measured on a scale ranging from "Not Important" (1) to "Extremely Important" (5). Level is defined as the degree to which a particular form of knowledge is required or needed to perform each occupation. This is measured on a continuum ranging from 0 to 7. An O*NET expert we consulted suggested using the "importance"

measure in research, if there is not a theoretical reason to prefer "level." Variables for other dimensions, such as job zones or interests, do not depend upon data calculated from importance or level values.

We discuss the creation of variables for each dimension in sections 5.1-5.9, below. For most analyses, we expect that users are likely to use the variables containing "mean" in the name, while many other variables are more likely to be used to better understand the quality, reliability and sources of data for each occupation and its characteristics.

## 5.1 Dimension 1: Knowledge (IM and LV)

The knowledge dimension has variables indicating, for the respondent's 2000 Census occupation code, the mean data value (for both the importance or level rating of each knowledge element), median data value (for both the importance and level rating of each knowledge element), the sample size (total, max and min), the standard error (min and max), the lower bound of the confidence interval (min), and the upper bound of the confidence interval (max).

The knowledge dimension also has variables relating to 33 different knowledge elements, including: Administration and Management; Clerical; Economics and Accounting; Sales and Marketing; Customers and Personal Service; Personnel and Human Resources; Production and Processing; Food Production; Computers and Electronics; Engineering and Technology; Design; Building and Construction; Mechanical; Mathematics; Physics; Chemistry; Biology; Psychology; Sociology and Anthropology; Geography; Medicine and Dentistry; Therapy and Counseling; Education and Training; English Language; Foreign Language; Fine Arts; History and Archeology; Philosophy and Theology; Public Safety and Security; Law and Government; Telecommunications; Communications and Media; and Transportation.

Below are the naming convention and content description for each variable associated with the knowledge dimension in the HRS-O*NET 5.0 and/or 10.0 datasets. Note that some variables are only in the 5.0 or 10.0 data. Specifically, the O*NET 5.0 raw knowledge data only has data values, but O*NET 10.0 also has N, Standard Error, lower bound, and upper bound. As a result, we have 7 additional variables for each of the 33 measures in O*NET 10.0 than O*NET 5.0. O*NET 10.0 has two additional domain sources that are not available in O*NET 5.0. Therefore, O*NET 10.0 has 33*7 + 2 = 233 more variables than O*NET 5.0.

***Variable Naming and Description for Knowledge Dimension***

| Naming Convention | Content Description |
|---|---|
| Measure type | |
| ki | Scale ID of importance for knowledge dimension |
| kl (lowercase "L") | Scale ID of level for knowledge dimension |
| Knowledge element | |
| 1 | "Administration and Management" |
| 2 | "Biology" |

| | |
|---|---|
| 3 | "Building and Construction" |
| 4 | "Chemistry" |
| 5 | "Clerical" |
| 6 | "Communications and Media" |
| 7 | "Computers and Electronics" |
| 8 | "Customer and Personal Service" |
| 9 | "Design" |
| 10 | "Economics and Accounting" |
| 11 | "Education and Training" |
| 12 | "Engineering and Technology" |
| 13 | "English Language" |
| 14 | "Fine Arts" |
| 15 | "Food Production" |
| 16 | "Foreign Language" |
| 17 | "Geography" |
| 18 | "History and Archeology" |
| 19 | "Law and Government" |
| 20 | "Mathematics" |
| 21 | "Mechanical" |
| 22 | "Medicine and Dentistry" |
| 23 | "Personnel and Human Resources" |
| 24 | "Philosophy and Theology" |
| 25 | "Physics" |
| 26 | "Production and Processing" |
| 27 | "Psychology" |
| 28 | "Public Safety and Security" |
| 29 | "Sales and Marketing" |
| 30 | "Sociology and Anthropology" |
| 31 | "Telecommunications" |
| 32 | "Therapy and Counseling" |
| 33 | "Transportation" |

Statistic or measure

| | |
|---|---|
| val | Data value statistic |
| n | Sample size statistic |
| ub | Upper bound confidence interval statistic |
| lb | Lower bound confidence interval statistic |
| se | Standard error statistic |

Statistic or measure type: In cases where more than one O*NET-SOC code mapped to one Census 2000 or 2006 code, measures were created by collapsing to the Census 2000 or 2006 code level respectively*

| | |
|---|---|
| mean | "Mean" data value |
| median | "Median" data value |
| total | "Total" sample size |
| max | "Max" sample size, standard error, or upper bound CI |
| min | "Min" sample size, standard error, or lower bound CI |

**Note: Some 2000 Census codes may have multiple O*NET-SOC codes collapsed into them. Therefore, max (or min) sample size, standard error, and upper (or lower) bound C.I. refer to the largest (or smallest) sample size, standard error or upper (or lower) bound C.I. amongst the collapsed O*NET-SOC codes.*

***Variable Naming and Description of Additional/Special Variables for Knowledge Dimension***

| Variable Name | Content |
|---|---|
| *count_onet2000* | Count of 2000 ONET codes in 2000 Census code |
| *count_onet2006* | Count of 2006 ONET codes in 2006 Census code |
| *flag_onet* | Flag created to indicate that this particular case is one that relates to a O*NET-SOC 2000 code that maps to more than one 2000 Census code (1=Flag applies, 0=Flag does not apply) – found in the HRS-O*NET 5.0 data |
| *flag_onet* | Flag created to indicate that this particular case is one that relates to a O*NET-SOC 2006 code that maps to more than one 2000 Census code (1=Flag applies, 0=Flag does not apply) – found in the HRS-O*NET 10.0 data |
| *incumb* | Flag for the domain source of job incumbent (1=Domain source is job incumbent, 0=Domain source is not job incumbent) found in the HRS-O*NET 5.0 data and HRS-O*NET 10.0 data |
| *occ_expert* | Flag for the domain source of occupational expert (1=Domain source is occupational expert, 0=Domain source is not occupational expert) found in the HRS-O*NET 10.0 data |
| analyst | Flag for the domain source of legacy analyst (1= Domain source is legacy analyst, 0 = Domain source is not legacy analyst) found in the HRS-O*NET 10.0 data |
| le_analyst | Flag for the domain source of legacy analyst (1= Domain source is legacy analyst, 0 = Domain source is not legacy analyst) found in the HRS-O*NET 5.0 data and HRS-O*NET 10.0 data |
| *date* | Date when data was last updated (*Note:* Some Census codes may ave more than one O*NET-SOC collapsed into them; this variable refers to the earliest date when relevant) found in the HRS-O*NET 5.0 data and HRS-O*NET 10.0 data |

**Note: Some 2000 Census codes have multiple O*NET-SOC codes collapsed into them; therefore, some Census codes have flags for multiple domain sources. Multiple flags indicate that at least one O*NET-SOC code (in the collapsed Census code) has values that come from that domain source.*

Variables constructed from the knowledge dimension are named beginning with "k", for "knowledge," followed by either a "i" or "l", which refers to scale ID ratings (e.g., "importance" or "level"). An integer (ranging from 1 to 33) signifies the knowledge element (e.g., "Administration and Management") follows. Next follows a series of up to three letters designating the statistical values (e.g., n (sample size) or se (standard error)). After the statistical value descriptor, a separator "_", and then up to six letters are included to indicate the statistic or measure type. For example, *ki1val_mean* is the variable that refers to the mean importance data value for the "Administration and Management" knowledge element.

For additional/special variables constructed from the knowledge dimension, variables are named beginning with "k", for knowledge measure, followed by either a "i" or "l", which refers to scale ID ratings (e.g., importance or level). A separator "_" and a variable descriptor (e.g., incumb or an_trans) then completes the variable name. For example, *ki_incumb* is the variable that refers to the flag for the domain source of the job incumbent for the important knowledge element.

## 5.2 Dimension 2: Skills (IM and LV)

*Note: O*NET recommends that the Skills data be used for longitudinal research only beginning with the O*NET 15.0 database.*

The skills dimension has variables related to the mean data value (for both the importance or level rating of each skills element), median data value (for both the importance and level rating of each skills element), the sample size (total, max and min), the standard error (min and max), the lower bound of the confidence interval (min), and the upper bound of the confidence interval (max). The dimension is derived from (analyst or analyst transition), and the date for when the data (taken from the O*NET database) was last updated.

The skills dimension also has variables relating to 35 different skills elements, including: Reading Comprehension; Active Listening; Writing; Speaking; Mathematics; Science; Critical Thinking; Active Learning; Learning Strategies; Monitoring; Social Perceptiveness; Coordination; Persuasion; Negotiation; Instructing; Service Orientation; Complex Problem Solving; Operations Analysis; Technology Design; Equipment Selection; Installation; Programming; Operations Monitoring; Operation and Control; Equipment Maintenance; Troubleshooting; Repairing; Quality Control Analysis; Judgment and Decision Making; Systems Analysis; Systems Evaluation; Time Management; Management of Financial Resources; Management of Material Resources; and Management of Personnel Resources.

Below are the naming convention and content description for each variable associated with the skills dimension. Note that some variables are only in the 5.0 or 10.0 data. Specifically, the O*NET 5.0 raw skills data only has data values, but O*NET 10.0 also has N, Standard Error, lower bound, and upper bound. As a result, we have 7 additional variables for each of the 35 measures in O*NET 10.0 than O*NET 5.0. O*NET 10.0 has two additional domain sources that are not available in O*NET 5.0. Therefore, O*NET 10.0 has 35*7 + 2 = 247 more variables than O*NET 5.0.

***Variable Naming and Description for Skills Dimension***

| Naming Convention | Content Description |
|---|---|
| Measure type | |
| si | Scale ID of importance for skills dimension |
| sl (lowercase “L”) | Scale ID of level for skills dimension |
| Skills element | |
| 1 | "Active Learning" |
| 2 | “Active Listening” |
| 3 | "Complex Problem Solving” |
| 4 | "Coordination” |
| 5 | "Critical Thinking” |
| 6 | "Equipment Maintenance” |
| 7 | "Equipment Selection” |
| 8 | "Installation” |
| 9 | "Instructing” |
| 10 | "Judgment and Decision Making” |
| 11 | "Learning Strategies” |
| 12 | "Management of Financial Resources” |
| 13 | "Management of Material Resources” |
| 14 | "Management of Personnel Resources” |
| 15 | "Mathematics” |
| 16 | "Monitoring” |
| 17 | "Negotiation” |
| 18 | "Operation and Control” |
| 19 | "Operations Analysis” |
| 20 | "Operations Monitoring” |
| 21 | "Persuasion” |
| 22 | "Programming” |
| 23 | "Quality Control Analysis” |
| 24 | "Reading Comprehension” |
| 25 | "Repairing” |
| 26 | "Science” |
| 27 | "Service Orientation” |
| 28 | "Social Perceptiveness” |
| 29 | "Speaking” |
| 30 | "Systems Analysis” |
| 31 | "Systems Evaluation” |
| 32 | "Technology Design” |
| 33 | "Time Management” |
| 34 | "Troubleshooting” |
| 35 | "Writing” |
| Statistic or measure | |
| val | Data value statistic |
| n | Sample size statistic |
| ub | Upper bound confidence interval statistic |
| lb | Lower bound confidence interval statistic |
| se | Standard error statistic |

Statistic or measure type (These are computed over all O*NET SOC codes that are collapsed to create the Census 2000/2006-level data)*

| | |
|---|---|
| mean | "Mean" data value |
| median | "Median" data value |
| total | "Total" sample size |
| max | "Max" sample size, standard error, or upper bound CI |
| min | "Min" sample size, standard error, or lower bound CI |

**Note: Some 2000 Census codes may have multiple O*NET-SOC codes collapsed into them; therefore, the max (or min) sample size, standard error, and upper (or lower) bound C.I. refer to the largest (or smallest) sample size, standard error and upper (or lower) bound C.I. amongst the collapsed O*NET-SOC codes.*

***Variable Naming and Description of Additional/Special Variables for Skills Dimension***

| **Variable Name** | **Content** |
|---|---|
| *count_onet2000* | Count of 2000 ONET codes in 2000 Census code |
| *count_onet2006* | Count of 2006 ONET codes in 2006 Census code |
| *flag_onet* | Flag created to indicate that this particular case is one that relates to a O*NET-SOC 2000 code that maps to more than one 2000 Census code (1=Flag applies, 0=Flag does not apply) – HRS-O*NET 5.0 definition |
| *flag_onet* | Flag created to indicate that this particular case is one that relates to a O*NET-SOC 2006 code that maps to more than one 2000 Census code (1=Flag applies, 0=Flag does not apply) – HRS-O*NET 10.0 definition |
| *Incumb* | Flag for the domain source of job incumbent (1=Domain source is job incumbent, 0=Domain source is not job incumbent) found in the HRS-O*NET 5.0 and HRS-O*NET 10.0 data |
| analyst | Flag for the domain source of legacy analyst (1= Domain source is legacy analyst, 0 = Domain source is not legacy analyst) found in the HRS-O*NET 10.0 data |
| le_analyst | Flag for the domain source of legacy analyst (1= Domain source is legacy analyst, 0 = Domain source is not legacy analyst) found in the HRS-O*NET 5.0 data and HRS-O*NET 10.0 data |
| *date* | Date when data was last updated (*Note:* Some Census codes may have more than one O*NET-SOC collapsed into them; this variable refers to the earliest date when relevant in the HRS-O*NET 5.0 data and HRS-O*NET 10.0 data |

**Note: Some 2000 Census codes have multiple O*NET-SOC codes collapsed into them; therefore, some Census codes have flags for multiple domain sources. Multiple flags indicate that at least one O*NET-SOC code (in the collapsed Census code) has values that come from that domain source.*

Variables constructed from the skills dimension are named beginning with "s", for "skills" measure, followed by either a "i" or "l", which refers to scale ID ratings (e.g., "importance" or "level"). An integer (ranging from 1 to 35) signifies the skills element (e.g., "Reading Comprehension"). Next follows a series of up to three letters indicating the statistical values (e.g., n (sample size) or se (standard error)), then follows the identifier for the skills element. Last, a separator "_", and then up to six letters are included to indicate the statistic or measure type completes the variable name. For example, si24val_mean is the variable that refers to the mean importance data value for the "Reading Comprehension" skills element.

For additional/special variables constructed from the skills dimension, variables are named beginning with "s", for skills measure, followed by either a "i" or "l", which refers to scale ID ratings (e.g., "importance" or "level"). A separator "_" and a variable descriptor (e.g., analyst or an_trans) then complete the variable name. For example, si_analyst is the variable that refers to the flag for the domain source of analyst for the important skills element.

### 5.3 Dimension 3: Abilities (IM and LV)

The abilities dimension has variables related to the mean data value (for both the importance or level rating of each abilities element), median data value (for both the importance and level rating of each abilities element), the sample size (total, max and min), the standard error (min and max), the lower bound of the confidence interval (min), and the upper bound of the confidence interval (max). In some cases, these measures are based on data from only one O*NET-SOC code; in others, they reflect the full range of O*NET SOC codes that have been mapped to the relevant 2000 Census occupation code. The abilities dimension also has variables that detail the number of O*NET-SOC codes collapsed down into a single Census code, detail whether the Census code is one that relates to a 2000 O*NET-SOC code that aggregates to more than one Census code, detail the type of domain source the data for that dimension is derived from (analyst or analyst transition), and detail the date for when the data (taken from the O*NET database) was last updated.

The abilities dimension also has variables relating to 52 different abilities elements including: Oral Comprehension; Written Comprehension; Oral Expression; Written Expression; Fluency of Ideas; Originality; Problem Sensitivity; Deductive Reasoning; Inductive Reasoning; Information Ordering; Category Flexibility; Mathematical Reasoning; Number Facility; Memorization; Speed of Closure; Flexibility of Closure; Perceptual Speed; Spatial Orientation; Visualization; Selective Attention; Time Sharing; Arm-Hand Steadiness; Manual Dexterity; Finger Dexterity; Control Precision; Multilimb Coordination; Response Orientation; Rate Control; Reaction Time; Wrist-Finger Speed; Speed of Limb Movement; Static Strength; Explosive Strength; Dynamic Strength; Trunk Strength; Stamina; Extent Flexibility; Dynamic Flexibility; Gross Body Coordination; Gross Body Equilibrium; Near Vision; Far Vision; Visual Color Discrimination; Night Vision; Peripheral Vision; Depth Perception; Glare Sensitivity; Hearing Sensitivity; Auditory Attention; Sound Localization; Speech Recognition; and Speech Clarity.

Below are the naming convention and content description for each variable associated with the abilities dimension. Note that some variables are only in the 5.0 or 10.0 data. Specifically, O*NET 5.0 raw data

only has data values, but O*NET 10.0 also has N, Standard Error, lower bound, and upper bound. As a result, we have 7 additional variables for each of the 52 measures in O*NET 10.0 than O*NET 5.0. Therefore, O*NET 10.0 has 52*7=364 more variables than O*NET 5.0.

***Variable Naming and Description for Abilities Dimension***

| Naming Convention | Content Description |
|---|---|
| Measure type | |
| ai | Scale ID of importance for abilities dimension |
| al (lowercase “L”) | Scale ID of level for abilities dimension |
| Abilities element | |
| 1 | "Arm-Hand Steadiness” |
| 2 | "Auditory Attention” |
| 3 | "Category Flexibility” |
| 4 | "Control Precision” |
| 5 | "Deductive Reasoning” |
| 6 | "Depth Perception” |
| 7 | "Dynamic Flexibility” |
| 8 | "Dynamic Strength” |
| 9 | "Explosive Strength” |
| 10 | "Extent Flexibility” |
| 11 | "Far Vision” |
| 12 | "Finger Dexterity” |
| 13 | "Flexibility of Closure” |
| 14 | "Fluency of Ideas” |
| 15 | "Glare Sensitivity” |
| 16 | "Gross Body Coordination” |
| 17 | "Gross Body Equilibrium” |
| 18 | "Hearing Sensitivity” |
| 19 | "Inductive Reasoning” |
| 20 | "Information Ordering” |
| 21 | "Manual Dexterity” |
| 22 | "Mathematical Reasoning |
| 23 | "Memorization” |
| 24 | "Multilimb Coordination” |
| 25 | "Near Vision” |
| 26 | "Night Vision” |
| 27 | "Number Facility” |
| 28 | "Oral Comprehension” |
| 29 | "Oral Expression” |
| 30 | "Originality” |
| 31 | "Perceptual Speed” |
| 32 | "Peripheral Vision” |
| 33 | "Problem Sensitivity” |
| 34 | "Rate Control” |
| 35 | "Reaction Time” |

| | |
|---|---|
| 36 | "Response Orientation” |
| 37 | "Selective Attention” |
| 38 | "Sound Localization” |
| 39 | "Spatial Orientation” |
| 40 | "Speech Clarity” |
| 41 | "Speech Recognition” |
| 42 | "Speed of Closure” |
| 43 | "Speed of Limb Movement” |
| 44 | "Stamina” |
| 45 | "Static Strength” |
| 46 | "Time Sharing” |
| 47 | "Trunk Strength” |
| 48 | "Visual Color Discrimination” |
| 49 | "Visualization” |
| 50 | "Wrist-Finger Speed” |
| 51 | "Written Comprehension” |
| 52 | "Written Expression” |

Statistic or measure

| | |
|---|---|
| val | Data value statistic |
| n | Sample size statistic |
| ub | Upper bound confidence interval statistic |
| lb | Lower bound confidence interval statistic |
| se | Standard error statistic |

Statistic or measure type (These are computed over all O*NET SOC codes that are collapsed to create the Census 2000/2006-level data)

| | |
|---|---|
| mean | “Mean” data value |
| median | “Median” data value |
| total | “Total” sample size |
| max | “Max” sample size, standard error, or upper bound CI |
| min | “Min” sample size, standard error, or lower bound CI |

**Note: Some 2000 Census codes may have multiple O*NET-SOC codes collapsed into it; therefore, the max (or min) sample size, standard error, or upper (or lower) bound C.I. refers to the largest (or smallest) sample size, standard error or upper (or lower) bound C.I. amongst the collapsed O*NET-SOC codes.*

***Variable Naming and Description of Additional/Special Variables for Abilities Dimension***

| **Variable Name** | **Content** |
|---|---|
| *count_onet2000* | Count of 2000 ONET codes in 2000 Census code |
| *count_onet2006* | Count of 2006 ONET codes in 2006 Census code |
| *flag_onet* | Flag created to indicate that this particular case is one that |

| | |
|---|---|
| | relates to a O*NET-SOC 2000 code that maps to more than one 2000 Census code (1=Flag applies, 0=Flag does not apply) – in HRS-O*NET 5.0 |
| *flag_onet* | Flag created to indicate that this particular case is one that relates to a O*NET-SOC 2006 code that maps to more than one 2000 Census code (1=Flag applies, 0=Flag does not apply) – in HRS-O*NET 10.0 |
| *analyst* | Flag for the domain source of analyst (1=Domain source is analyst, 0=Domain source is not analyst) found in the HRS-O*NET 5.0 data and HRS-O*NET 10.0 data |
| le_analyst | Flag for the domain source of legacy analyst (1= Domain source is legacy analyst, 0 = Domain source is not legacy analyst) found in the HRS-O*NET 5.0 data and HRS-O*NET 10.0 data |
| *date* | Date when data was last updated (*Note:* Some Census codes may have more than one O*NET-SOC collapsed into them; this variable refers to the earliest date when relevant) found in the HRS-O*NET 5.0 data and HRS-O*NET 10.0 data |

**Note: Some 2000 Census codes have multiple O*NET-SOC codes collapsed into it; therefore, some Census codes have flags for multiple domain sources. Multiple flags indicate that at least one O*NET-SOC code (in the collapsed Census code) has values that come from that domain source.*

Variables constructed from the abilities dimension are named beginning with “a”, for “abilities” measure, followed by either a “i” or “l”, which refers to scale ID ratings (e.g., “importance” or “level”). A number (ranging from 1 to 52) signifying the abilities element (e.g., “Oral Comprehension”) follows the scale ID designator. Next follows a series of up to three letters designating the statistical values (e.g., n (sample size) or se (standard error)), then follows the identifier for the “abilities” element. After the statistical value descriptor, a separator “_”, and then up to six letters are included to indicate the statistic or measure type completes the variable name.

For example, *ai28val_mean* is the variable that refers to the mean importance data value for the “Oral Comprehension” abilities element.

For additional/special variables constructed from the abilities dimension, variables are named beginning with “a”, for abilities measure, followed by either a “i” or “l”, which refers to scale ID ratings (e.g., “importance” or “level”). A separator “_” and a variable descriptor (e.g., analyst or an_trans) then completes the variable name.

For example, *ai_analyst* is the variable that refers to the flag for the domain source of analyst for the importance abilities element.

## 5.4 Dimension 4: Interests

The interest dimension has variables related to the mean, median, min, and max data value for each interest element. In some cases, these measures are based on data from only one O*NET-SOC code; in others, they reflect the full range of O*NET SOC codes that have been mapped to the relevant 2000 Census occupation code. Therefore, the interests dataset includes variables that detail the number of O*NET-SOC codes collapsed down into a single Census code, whether the Census code is one that relates to a 2000 O*NET-SOC code that aggregates to more than one Census code, the type of domain source the data for that dimension is derived from (analyst or analyst transition), and the date for when the data (taken from the O*NET database) was last updated.

The interest dimension has variables relating to 6 different occupational interest elements, including: Artistic; Conventional; Enterprising; Investigative; Realistic; and Social.

Below are the naming conventions and content descriptions for each variable associated with the interests dimension. Note that some variables are only in the 5.0 or 10.0 data. Specifically, O*NET 10.0 has one additional domain source that is not available in O*NET 5.0. Therefore, O*NET 10.0 has 1 additional variable compared to O*NET 5.0.

***Variable Naming and Description for Interest Dimension***

| Naming Convention | Content Description |
|---|---|
| Measure type | |
| in | Interest dimension |
| Interest element | |
| 1 | "Artistic" Interest Measure |
| 2 | "Conventional" Interest Measure |
| 3 | "Enterprising" Interest Measure |
| 4 | "Investigative" Interest Measure |
| 5 | "Realistic" Interest Measure |
| 6 | "Social" Interest Measure |
| Statistic or measure | |
| val | Data value statistic |
| Statistic or measure type (These are computed over all O*NET SOC codes that are collapsed to create the Census 2000 or 2006-level data) | |
| mean | "Mean" data value |
| median | "Median" data value |
| max | "Max" data value |
| min | "Min" data value |

**Note: Some 2000 Census codes may have multiple O*NET-SOC codes collapsed into it; therefore, the max (or min) data value refers to the largest (or smallest) data value amongst the collapsed O*NET-SOC codes.*

***Variable Naming and Description of Additional/Special Variables for Interest Dimension***

| Variable Name | Content |
|---|---|
| *count_onet2000* | Count of 2000 ONET codes in 2000 Census code |
| *count_onet2006* | Count of 2006 ONET codes in 2006 Census code |
| *flag_onet* | Flag created to indicate that this particular case is one that relates to a O*NET-SOC 2000 code that maps to more than one 2000 Census code (1=Flag applies, 0=Flag does not apply) – HRS-O*NET 5.0 definition |
| *flag_onet* | Flag created to indicate that this particular case is one that relates to a O*NET-SOC 2006 code that maps to more than one 2000 Census code (1=Flag applies, 0=Flag does not apply) – HRS-O*NET 10.0 definition |
| *analyst* | Flag for the domain source of analyst (1=Domain source is analyst, 0=Domain source is not analyst) found in the HRS-O*NET 10.0 data |
| le_analyst | Flag for the domain source of legacy analyst (1= Domain source is legacy analyst, 0 = Domain source is not legacy analyst) found in the HRS-O*NET 5.0 data and HRS-O*NET 10.0 data |
| *date* | Date when data was last updated (*Note:* Some Census codes may have more than one O*NET-SOC collapsed into them; this variable refers to the earliest date when relevant) found in the HRS-O*NET 5.0 data and HRS-O*NET 10.0 data |

**Note: Some 2000 Census codes have multiple 2000 O*NET-SOC codes collapsed into it; therefore, some Census codes have flags for multiple domain sources. Multiple flags indicate that at least one O*NET-SOC code (in the collapsed 2000 or 2006 Census code) has values that come from that domain source.*

Variables constructed from the interest dimension are named beginning with "in", for interest measure, followed by a number (ranging from 1 to 6) signifying the interests element (e.g., "Artistic"), then a series of up to three letters designating the statistical values (e.g., val (data value)), a separator "_", and then the statistic or measure type completes the variable name (e.g., mean or median).

For example, *in1val_mean* refers to the mean data value for the artistic interest element.

For additional/special variables constructed from the interest dimension, variables are named beginning with "in", for interest measure, followed by a separator "_" and a variable descriptor (e.g., analyst or

an_trans). For example, *in_analyst* is the variable that refers to the flag for the domain source of analyst for the interest element.

### 5.5 Dimension 5: Work Values

The work values dataset contains variables for the mean, median, min, and max data value of each work value element. In some cases, these measures are based on data from only one O*NET-SOC code; in others, they reflect the full range of O*NET SOC codes that have been mapped to the relevant 2000Census occupation code. The work values dimension has variables that detail the number of O*NET-SOC codes collapsed down into a single Census code, whether the Census code is one that relates to a 2000 O*NET-SOC code that aggregates to more than one Census code, the type of domain source the data for that dimension is derived from (analyst or analyst transition), and the date for when the data (taken from the O*NET database) was last updated.

The work values dimension has variables relating to 6 different occupational work values elements including: Achievement; Working Conditions; Recognition; Relationships; Support; and Independence.

Below is the naming convention and content description for each variable associated with the work values dimension. Note that some variables are only in the 5.0 or 10.0 data. Specifically, O*NET 10.0 has one additional domain source that is not available in O*NET 5.0. Therefore, O*NET 10.0 has 1 additional variable compared to O*NET 5.0.

***Variable Naming and Description for Work Values Dimension***

| Naming Convention | Content Description |
|---|---|
| Measure type | |
| wv | Work values dimension |
| Work values element | |
| 1 | "Achievement" Work Values Measure |
| 2 | "Independence" Work Values Measure |
| 3 | "Recognition" Work Values Measure |
| 4 | "Relationships" Work Values Measure |
| 5 | "Support" Work Values Measure |
| 6 | "Working Conditions" Work Values Measure |
| Statistic or measure | |
| val | Data value statistic |
| Statistic or measure type (These are computed over all O*NET SOC codes that are collapsed to create the Census 2000 or 2006-level data) | |
| mean | "Mean" data value |
| median | "Median" data value |
| max | "Max" data value |
| min | "Min" data value |

**Note: Some 2000 Census codes may have multiple O*NET-SOC codes collapsed into it; therefore, the max (or min) data value refers to the largest (or smallest) data value amongst the collapsed O*NET-SOC codes.*

***Variable Naming and Description of Additional/Special Variables for Work values Dimension***

| Variable Name | Content |
|---|---|
| *count_onet2000* | Count of 2000 ONET codes in 2000 Census code |
| *count_onet2006* | Count of 2006 ONET codes in 2006 Census code |
| *flag_onet* | Flag created to indicate that this particular case is one that relates to a O*NET-SOC 2000 code that maps to more than one 2000 Census code (1=Flag applies, 0=Flag does not apply) – HRS-O*NET 5.0 definition |
| *flag_onet* | Flag created to indicate that this particular case is one that relates to a O*NET-SOC 2006 code that maps to more than one 2000 Census code (1=Flag applies, 0=Flag does not apply) – HRS-O*NET 10.0 definition |
| *analyst* | Flag for the domain source of analyst (1=Domain source is analyst, 0=Domain source is not analyst) found in the HRS-O*NET 10.0 data |
| le_analyst | Flag for the domain source of legacy analyst (1= Domain source is legacy analyst, 0 = Domain source is not legacy analyst) found in the HRS-O*NET 5.0 data and HRS-O*NET 10.0 data |
| *date* | Date when data was last updated (*Note:* Some Census codes may have more than one O*NET-SOC collapsed into them; this variable refers to the earliest date when relevant) found in the HRS-O*NET 5.0 data and HRS-O*NET 10.0 data |

**Note: Some 2000 Census codes have multiple O*NET-SOC codes collapsed into it; therefore, some 2000 Census codes have flags for multiple domain sources. Multiple flags indicate that at least one O*NET-SOC code (in the collapsed Census code) has values that come from that domain source.*

Variables constructed from the work values dimension, variables are named beginning with "wv", for work values measure, followed by a number (ranging from 1 to 6) signifies the work values element (e.g., "Independence"), then a series of up to three letters designating the statistical values (e.g., val (data value)), a separator "_", and then the statistic or measure type completes the variable name (e.g., mean or median).

For example, *wv1val_mean* refers to the mean data value for the achievement work values element.

For additional/special variables constructed from the work values dimension, variables are named beginning with "wv", for work values measure, followed by a separator "_" and a variable descriptor (e.g., analyst or an_trans). For example, *wv_analyst* is the variable that refers to the flag for the domain source of analyst for the work values element.

## 5.6 Dimension 6: Work Styles (IM)

The work styles dataset contains variables related to the mean and median data values for the importance rating of each work styles element, the sample size (total, max and min), the standard error (min and max), the lower bound of the confidence interval (min), and the upper bound of the confidence interval (max). In some cases, these measures are based on data from only one O*NET-SOC code; in others, they reflect the full range of O*NET SOC codes that have been mapped to the relevant 2000 Census occupation code. Therefore, the work styles dataset contains variables that detail the number of O*NET-SOC codes collapsed down into a single Census code, whether the Census code is one that relates to a O*NET-SOC code that aggregates to more than one Census code, the type of domain source the data for that dimension is derived from (incumbent, occupational expert, analyst, or analyst transition), and the date for when the data (taken from the O*NET database) were last updated.

The work styles dataset has variables relating to the 16 different work styles elements, including: Achievement/Effort; Persistence; Initiative; Leadership; Cooperation; Concern for Others; Social Orientation; Self-Control; Stress Tolerance; Adaptability/Flexibility; Dependability; Attention to Detail; Integrity; Independence; Innovation; and Analytic Thinking.

Below are the naming conventions and content descriptions for each variable associated with the work styles dataset. Note that some variables are only in the 5.0 or 10.0 data. Specifically, O*NET 5.0 raw data only has data values, but O*NET 10.0 also has N, Standard Error, lower bound, and upper bound. As a result, we have 7 additional variables for each of the 16 measures in O*NET 10.0 than O*NET 5.0. O*NET 10.0 has one additional domain source that is not available in O*NET 5.0. Therefore, O*NET 10.0 has 16*7 + 1 = 401 additional variables than O*NET 5.0.

***Variable Naming and Description for Work Styles Dimension***

| Naming Convention | Content Description |
|---|---|
| Measure type | |
| wsi | Scale ID of importance for Work Styles dimension |
| Work Styles element | |
| 1 | "Achievement/Effort" |
| 2 | "Adaptability/Flexibility" |
| 3 | "Analytical Thinking" |
| 4 | "Attention to Detail" |
| 5 | "Concern for Others" |
| 6 | "Cooperation" |
| 7 | "Dependability" |
| 8 | "Independence" |
| 9 | "Initiative" |
| 10 | "Innovation" |

| | |
|---|---|
| 11 | "Integrity" |
| 12 | "Leadership" |
| 13 | "Persistence" |
| 14 | "Self-Control" |
| 15 | "Social Orientation" |
| 16 | "Stress Tolerance" |

Statistic or measure

| | |
|---|---|
| val | Data value statistic |
| n | Sample size statistic |
| ub | Upper bound confidence interval statistic |
| lb | Lower bound confidence interval statistic |
| se | Standard error statistic |

Statistic or measure type (These are computed over all O*NET SOC codes that are collapsed to create the Census 2000 or 2006-level data)

| | |
|---|---|
| mean | "Mean" data value |
| median | "Median" data value |
| total | "Total" sample size |
| max | "Max" sample size, standard error, or upper bound CI |
| min | "Min" sample size, standard error, or lower bound CI |

**Note: Some 2000 Census codes may have multiple O*NET-SOC codes collapsed into it; therefore, the max (or min) sample size, standard error, or upper (or lower) bound C.I. refers to the largest (or smallest) sample size, standard error or upper (or lower) bound C.I. amongst the collapsed O*NET-SOC codes.*

**Note: The O*NET 5.0 Work Styles data is gathered for fewer occupations in 2003 compared to the other dimensions across the 5.0 database, 10.0 database, and the 26.1 database. The O*NET 5.0 database was the first database that began reflecting data obtained through the newly developed data collection program, where additional Content Model descriptors were added to the database (e.g., work styles). Therefore, work styles data in the O*NET 5.0 database represents data as it was collected from the data source, either job incumbent or occupational expert and not from analyst ratings, resulting in overall fewer occupations that had valid (non-missing) data for this dimension. More information can be found at https://www.onetcenter.org/dictionary/27.0/excel/appendix_changes.html.*

***Variable Naming and Description of Additional/Special Variables for Work Styles Dimension***

| **Variable Name** | **Content** |
|---|---|
| *count_onet2000* | Count of 2000 ONET codes in 2000 Census code |
| *count_onet2006* | Count of 2006 ONET codes in 2006 Census code |
| *flag_onet* | Flag created to indicate that this particular case is one that relates to a O*NET-SOC 2000 code that maps to more than one 2000 Census code (1=Flag applies, 0=Flag does not apply) – HRS-O*NET 5.0 definition |

| | |
|---|---|
| *flag_onet* | Flag created to indicate that this particular case is one that relates to a O*NET-SOC 2006 code that maps to more than one 2000 Census code (1=Flag applies, 0=Flag does not apply) – HRS-O*NET 10.0 definition |
| *Incumb* | Flag for the domain source of job incumbent (1=Domain source is job incumbent, 0=Domain source is not job incumbent) found in the HRS-O*NET 5.0 data and HRS-O*NET 10.0 data |
| *occ_expert* | Flag for the domain source of occupational expert (1=Domain source is occupational expert, 0=Domain source is not occupational expert) found in the HRS-O*NET 10.0 data |
| *date* | Date when data was last updated (*Note:* Some Census codes may have more than one O*NET-SOC collapsed into them; this variable refers to the earliest date when relevant) found in the HRS-O*NET 5.0 data and HRS-O*NET 10.0 data |

**Note: Some 2000 Census codes have multiple O*NET-SOC codes collapsed into it; therefore, some Census codes have flags for multiple domain sources. Multiple flags indicate that at least one O*NET-SOC code (in the collapsed Census code) has values that come from that domain source.*

Variables constructed from the work styles dimension are named beginning with "ws", for work styles measure, followed by an "i", which refers to the scale ID ratings of "importance." A number (ranging from 1 to 16) signifying the work styles element (e.g. "Leadership") follows the scale ID designator. Next follow a series of up to three letters designating the statistical values (e.g., n (sample size) or se (standard error)), then follows the identifier for the work styles element. After the statistical value descriptor, a separator "_", and then up to six letters are included to indicate the statistic or measure type completes the variable name.

For example, *wsi12val_mean* is the variable that refers to the mean importance data value for the "Leadership" work styles element.

For additional/special variables constructed from the work styles dimension, variables are named beginning with "ws", for work styles measure, followed by an "i", which refers to scale ID rating of importance. A separator "_" and a variable descriptor (e.g., incumb or an_trans) then completes the variable name. For example, *wsi_incumb* is the variable that refers to the flag for the domain source of the job incumbent for the important work styles element.

## 5.7 Dimension 7: Work Context

The work context dataset contains variables related to the mean and median data values for each work context element, the sample size (total, max and min), the standard error (min and max), the lower bound of the confidence interval (min), and the upper bound of the confidence interval (max). In some

cases, these measures are based on data from only one O*NET-SOC code; in others, they reflect the full range of O*NET SOC codes that have been mapped to the relevant 2000 Census occupation code. The work context dataset also contains variables that detail the number of O*NET-SOC codes collapsed down into a single Census code, whether the Census code is one that relates to a O*NET-SOC code that aggregates to more than one Census code, the type of domain source the data for that dimension is derived from (incumbent, occupational expert, analyst, or analyst transition), and when the data (taken from the O*NET database) were last updated.

The work context dimension has variables relating to 57 different work context elements including: Public Speaking; Telephone; Electronic Mail; Letters and Memos; Face-to-Face Discussions; Contact With Others; Work With Work Group or Team; Deal With External Customers; Coordinate or Lead Others; Responsible for Other's Health and Safety; Responsibility for Outcomes and Results; Frequency of Conflict Situations; Deal With Unpleasant or Angry People; Deal With Physically Aggressive People; Indoors, Environmentally Controlled; Indoors, Not Environmentally Controlled; Outdoors, Exposed to Weather; Outdoors, Under Cover; In an Open Vehicle or Equipment; In an Enclosed Vehicle or Equipment; Physical Proximity; Sounds, Noise Levels Are Distracting or Uncomfortable; Very Hot or Cold Temperatures; Extremely Bright or Inadequate Lighting; Exposed to Contaminants; Cramped Work Space, Awkward Positions; Exposed to Whole Body Vibration; Exposed to Radiation; Exposed to Disease or Infections; Exposed to High Places; Exposed to Hazardous Conditions; Exposed to Hazardous Equipment; Exposed to Minor Burns, Cuts, Bites, or Stings; Spend Time Sitting; Spend Time Standing; Spend Time Climbing Ladders, Scaffolds, or Poles; Spend Time Walking or Running; Spend Time Kneeling, Crouching, Stooping, or Crawling; Spend Time Keeping or Regaining Balance; Spend Time Using Your Hands to Handle, Control, or Feel Objects, Tools, or Controls, Spend Time Bending or Twisting the Body; Spend Time Making Repetitive Motions; Wear Common Protective or Safety Equipment such as Safety Shoes, Glasses, Gloves, Hearing Protection, Hard Hats, or Life Jackets; Wear Specialized Protective or Safety Equipment such as Breathing Apparatus, Safety Harness, Full Protection Suits, or Radiation Protection; Consequence of Error; Impact of Decisions on Co-workers or Company Results, Frequency of Decision Making; Freedom to Make Decisions; Degree of Automation; Importance of Being Exact or Accurate; Importance of Repeating Same Tasks; Structured versus Unstructured Work; Level of Competition; Time Pressure; Pace Determined by Speed of Equipment; Work Schedules; and Duration of Typical Work Week.

Below are the naming conventions and content descriptions for each variable associated with the work context dimension. Note that some variables are only in the 5.0 or 10.0 data. Specifically, O*NET 5.0 raw data only has data values, but O*NET 10.0 also has N, Standard Error, lower bound, and upper bound. As a result, we have 7 additional variables for each of the 57 measures in O*NET 10.0 than O*NET 5.0. O*NET 10.0 has two additional domain sources that are not available in O*NET 5.0. Therefore, O*NET 10.0 has 57*7 + 2 = 401 additional variables than O*NET 5.0.

***Variable Naming and Description for Work Context Dimension***

| Naming Convention | Content Description |
|---|---|
| Measure type | |
| wc | Scale ID of importance for Work Context dimension |
| Work context element | |

| | |
|---|---|
| 1 | "Consequence of Error" |
| 2 | "Contact With Others" |
| 3 | "Coordinate or Lead Others" |
| 4 | "Cramped Work Space, Awkward Positions" |
| 5 | "Deal with External Customers" |
| 6 | "Deal With Physically Aggressive People" |
| 7 | "Deal With Unpleasant or Angry People" |
| 8 | "Degree of Automation" |
| 9 | "Duration of Typical Work Week" |
| 10 | "Electronic Mail" |
| 11 | "Exposed to Contaminants" |
| 12 | "Exposed to Disease or Infections" |
| 13 | "Exposed to Hazardous Conditions" |
| 14 | "Exposed to Hazardous Equipment" |
| 15 | "Exposed to High Places" |
| 16 | "Exposed to Minor Burns, Cuts, Bites, or Stings" |
| 17 | "Exposed to Radiation" |
| 18 | "Exposed to Whole Body Vibration" |
| 19 | "Extremely Bright or Inadequate Lighting" |
| 20 | "Face-to-Face Discussions" |
| 21 | "Freedom to Make Decisions" |
| 22 | "Frequency of Conflict Decisions" |
| 23 | "Frequency of Decision Making" |
| 24 | "Impact of Decisions on Co-workers or Company Results" |
| 25 | "Importance of Being Exact or Accurate" |
| 26 | "Importance of Repeating Same Tasks" |
| 27 | "In an Enclosed Vehicle or Equipment" |
| 28 | "In an Open Vehicle or Equipment" |
| 29 | "Indoors, Environmentally Controlled" |
| 30 | "Indoors, Not Environmentally Controlled" |
| 31 | "Letters and Memos" |
| 32 | "Level of Competition" |
| 33 | "Outdoors, Exposed to Weather" |
| 34 | "Outdoors, Under Cover" |
| 35 | "Pace Determined by Speed of Equipment" |
| 36 | "Physical Proximity" |
| 37 | "Public Speaking" |
| 38 | "Responsibility for Outcomes and Results" |
| 39 | "Responsible for Others' Health and Safety" |
| 40 | "Sounds, Noise Levels Are Distracting or Uncomfortable" |
| 41 | "Spend Time Bending or Twisting the Body" |
| 42 | "Spend Time Climbing Ladders, Scaffolds, or Poles" |
| 43 | "Spend Time Keeping or Regaining Balance" |
| 44 | "Spend Time Kneeling, Crouching, Stooping, or Crawling" |
| 45 | "Spend Time Making Repetitive Motions" |
| 46 | "Spend Time Sitting" |
| 47 | "Spend Time Standing" |
| 48 | "Spend Time Using Your Hands to Handle, Control, or Feel Objects, Tools, or Controls" |

| | |
|---|---|
| 49 | "Spend Time Walking or Running" |
| 50 | "Structured Versus Unstructured Work" |
| 51 | "Telephone" |
| . 52 | "Time Pressure" |
| 53 | "Very Hot or Cold Temperatures" |
| 54 | "Wear Common Protective or Safety Equipment such as Safety Shoes, Glasses, Gloves, Hearing Protection, Hard Hats, or Life Jackets" |
| 55 | "Wear Specialized Protective or Safety Equipment such as Breathing Apparatus, Safety Harness, Full Protection Suits, or Radiation Protection" |
| 56 | "Work Schedules" |
| 57 | "Work With Work Group or Team" |

Statistic or measure

| | |
|---|---|
| val | Data value statistic |
| n | Sample size statistic |
| ub | Upper bound confidence interval statistic |
| lb | Lower bound confidence interval statistic |
| se | Standard error statistic |

Statistic or measure type (These are computed over all O*NET SOC codes that are collapsed to create the Census 2010-level data)

| | |
|---|---|
| mean | “Mean” data value |
| median | “Median” data value |
| total | “Total” sample size |
| max | “Max” sample size, standard error, or upper bound CI |
| min | “Min” sample size, standard error, or lower bound CI |

**Note: Some 2000 Census codes may have multiple O*NET-SOC codes collapsed into them; therefore, the max (or min) sample size refers to the largest (or smallest) sample size amongst the collapsed O*NET-SOC codes.*

***<u>Variable Naming and Description of Additional/Special Variables for Work Context Dimension</u>***

| **Variable Name** | **Content** |
|---|---|
| *count_onet2000* | Count of 2000 ONET codes in 2000 Census code |
| *count_onet2006* | Count of 2006 ONET codes in 2006 Census code |
| *flag_onet* | Flag created to indicate that this particular case is one that relates to a O*NET-SOC 2000 code that maps to more than one 2000 Census code (1=Flag applies, 0=Flag does not apply) – HRS-O*NET 5.0 definition |
| *flag_onet* | Flag created to indicate that this particular case is one that |

| | |
|---|---|
| | relates to a O*NET-SOC 2006 code that maps to more than one 2000 Census code (1=Flag applies, 0=Flag does not apply) – HRS-O*NET 10.0 definition |
| *incumb* | Flag for the domain source of job incumbent (1=Domain source is job incumbent, 0=Domain source is not job incumbent) found in the historical O*NET 5.0-HRS 2004-2010 data release and HRS-O*NET 10.0 data |
| *occ_expert* | Flag for the domain source of occupational expert (1=Domain source is occupational expert, 0=Domain source is not occupational expert) found in the HRS-O*NET 10.0 data |
| *analyst* | Flag for the domain source of analyst (1=Domain source is analyst, 0=Domain source is not analyst) found in the HRS-O*NET 10.0 data |
| le_analyst | Flag for the domain source of legacy analyst (1= Domain source is legacy analyst, 0 = Domain source is not legacy analyst) found in the HRS-O*NET 5.0 data and HRS-O*NET 10.0 data |
| *date* | Date when data was last updated (*Note:* Some Census codes may have more than one O*NET-SOC collapsed into them; this variable refers to the earliest date when relevant) found in the HRS-O*NET 5.0 data and HRS-O*NET 10.0 data |

**Note: Some 2000 Census codes have multiple O*NET-SOC codes collapsed into them; therefore, some Census codes have flags for multiple domain sources. Multiple flags indicate that at least one O*NET-SOC code (in the collapsed Census code) has values that come from that domain source.*

Variables constructed from the work context dimension are named beginning with "wc", for work context measure, a number (ranging from 1 to 57) signifying the work context element (e.g., "Public Speaking") follows the scale ID designator. Next follows a series of up to three letters designating the statistical values (e.g., n (sample size) or se (standard error)) then follows the identifier for the work context element. After the statistical value descriptor, a separator "_", and then up to six letters are included to indicate the statistic or measure type completes the variable name. For example, *wc37_n_total* is the variable that refers to the total sample size for the "Public Speaking" work context element.

For additional/special variables constructed from the work context dimension, variables are named beginning with "wc", for work context measure, followed by a separator "_" and a variable descriptor (e.g., incumb or an_trans). For example, *wc_incumb* is the variable that refers to the flag for the domain source of job incumbent for the work context element.

### 5.8 Dimension 8: Job Zones

The job zones dataset contains variables related to the percentage of O*NET codes within a Census code that relate to five distinct job zones, as well as a variable that relates to the mean job zone for each Census occupational code. In addition, the job zones dataset contains variables that detail the number of O*NET-SOC codes collapsed down into a single Census code, whether the Census code is one that relates to a O*NET-SOC code that aggregates to more than one Census code, the type of domain source the data for that dimension is derived from (analyst or analyst transition), and when the data (in the O*NET database) were last updated.

The job zones dataset has variables relating to 6 different job zones elements including: Job Zone 1 (Little or No Preparation Needed); Job Zone 2 (Some Preparation Needed); Job Zone 3 (Medium Preparation Needed); Job Zone 4 (Considerable Preparation Needed); and Job Zone 5 (Extensive Preparation Needed).

Below are the naming conventions and content descriptions for each variable associated with the job zones dimension. Note that some variables are only in the 5.0 or 10.0 data. Specifically, O*NET 10.0 has domain source and date information, which are not available in O*NET 5.0. Therefore, O*NET 10.0 has 3 additional variables compared to O*NET 5.0.

***Variable Naming and Description for Job Zones Dimension***

| Naming Convention | Content Description |
|---|---|
| Measure type | |
| jz | Job Zones dimension |
| Job zones element | |
| 1 | "Job Zone 1: Little or No Preparation Needed" |
| 2 | "Job Zone 2: Some Preparation Needed" |
| 3 | "Job Zone 3: Medium Preparation Needed" |
| 4 | "Job Zone 4: Considerable Preparation Needed" |
| 5 | "Job Zone 5: Extensive Preparation Needed" |
| Statistic or measure type (These are computed over all O*NET SOC codes that are collapsed to create the Census 2010-level data) | |
| per | Percent of O*NET codes in each Census code that report corresponding job zone |
| mean | Average job zone for each Census code* |
| median | Median job zone for each Census code |
| min | Lowest job zone for each Census code |
| max | Highest job zone for each Census code |

**Note: Occupational job zone averages represent the mean of ordinal categorical variables. These may not best represent the preparation level for any particular job category. As such, we recommend that analysts choose variables appropriate to their project goals. For example, some analysts might use the modal category identified by the "per" variables rather than the mean to indicate level of preparation.*

***Variable Naming and Description of Additional/Special Variables for Job Zones Dimension***

| Variable Name | Content |
|---|---|

| | |
|---|---|
| *count_onet2000* | Count of 2000 ONET codes in 2000 Census code |
| *count_onet2006* | Count of 2006 ONET codes in 2006 Census code |
| *flag_onet* | Flag created to indicate that this particular case is one that relates to a O*NET-SOC 2000 code that maps to more than one 2000 Census code (1=Flag applies, 0=Flag does not apply) |
| *flag_onet* | Flag created to indicate that this particular 2000 Census code is one that relates to a O*NET-SOC 2006 code that maps to more than one 2000 Census code (1=Flag applies, 0=Flag does not apply) |
| *analyst* | Flag for the domain source of analyst (1=Domain source is analyst, 0=Domain source is not analyst) found in the HRS-O*NET 10.0 data |
| le_analyst | Flag for the domain source of legacy analyst (1= Domain source is legacy analyst, 0 = Domain source is not legacy analyst) found in the HRS-O*NET 10.0 data |
| *date* | Date when data was last updated (*Note:* Some Census codes may have more than one O*NET-SOC collapsed into them; this variable refers to the earliest date when relevant) found in the HRS-O*NET 10.0 data |

**Note: Some 2000 Census codes have multiple O*NET-SOC codes collapsed into it; therefore, some Census codes have flags for multiple domain sources. Multiple flags indicate that at least one O*NET-SOC code (in the collapsed Census code) has values that come from that domain source.*

In the job zones dataset, variables are named beginning with "jz", for job zones measure, followed by a separator "_", the job zones statistic type (e.g., mean or per). If applicable, another separator "_", and then the job zone element designator (e.g., 1 for job zone 1) completes the variable name.

For example, *jz_per_1* refers to the percentage of O*NET codes in each Census code that relate to job zone 1. Additionally, *jz_mean* refers to the average job zone for each Census code.

For additional/special variables constructed from the job zones dimension, variables are named beginning with "jz", for job zones measure, followed by a separator "_" and a variable descriptor (e.g., analyst or an_trans). For example, *jz_analyst* is the variable that refers to the flag for the domain source of analyst for the job zones element.

### 5.9 Dimension 9: Work Activities (IM and LV)

The work activities dataset has variables related to the mean data value (for both the importance and level rating of each work activities element), median data value (for both the importance and level

rating of each work activities element), the sample size (total, max and min), the standard error (min and max), the lower bound of the confidence interval (min), and the upper bound of the confidence interval (max). In some cases, these measures are based on data from only one O*NET-SOC code; in others, they reflect the full range of O*NET SOC codes that have been mapped to the relevant 2000 Census occupation code. The work activities dimension has variables that detail the number of O*NET-SOC codes collapsed down into a single Census code, detail whether the Census code is one that relates to a O*NET-SOC code that aggregates to more than one Census code, detail the type of domain source the data for that dimension is derived from (incumbent, occupational expert, analyst, or analyst transition), and detail when the data (in the O*NET database) were last updated.

The work activities dataset also has variables relating to 41 different work activities elements, including: Getting Information; Monitoring Processes, Materials, or Surroundings; Identifying Objects, Actions, and Events; Inspecting Equipment, Structures, or Materials; Estimating the Quantifiable Characteristics of Products, Events, or Information; Judging the Qualities of Objects, Services, or People; Processing Information ; Evaluating Information to Determine Compliance with Standards; Analyzing Data or Information; Making Decisions and Solving Problems; Thinking Creatively; Updating and Using Relevant Knowledge; Developing Objectives and Strategies; Scheduling Work and Activities; Organizing, Planning, and Prioritizing Work; Performing General Physical Activities; Handling and Moving Objects; Controlling Machines and Processes; Operating Vehicles, Mechanized devices, or Equipment; Working with Computers; Drafting, Laying Out, and Specifying Technical Devices, Parts, and Equipment; Repairing and Maintaining Mechanical Equipment; Repairing and Maintaining Electronic Equipment; Documenting/Recording Information; Interpreting the Meaning of Information for Others; Communicating with Supervisors, Peers, or Subordinates; Communicating with People Outside the Organization; Establishing and Maintaining Interpersonal Relationships; Assisting and Caring for Others; Selling or Influencing Others; Resolving Conflicts and Negotiating with Others; Performing for or Working Directly with the Public; Coordinating the Work and Activities of Others; Developing and Building Teams; Training and Teaching Others; Guiding, Directing, and Motivating Subordinates; Coaching and Developing Others; Providing Consultation and Advice to Others; Performing Administrative Activities; Staffing Organization Units; and Monitoring and Controlling Resources.

Below are the naming conventions and content descriptions for each variable associated with the work activities dimension. Note that some variables are only in the 5.0 or 10.0 data. Specifically, O*NET 5.0 raw data only has data values, but O*NET 10.0 also has N, Standard Error, lower bound, and upper bound. As a result, we have 7 additional variables for each of the 41 measures in O*NET 10.0 than O*NET 5.0. O*NET 10.0 has two additional domain sources that are not available in O*NET 5.0. Therefore, O*NET 10.0 has 41*7 + 2 = 289 additional variables than O*NET 5.0.

***Variable Naming and Description for Work activities Dimension***

| **Naming Convention** | **Content Description** |
|---|---|
| Measure type | |
| wai | Scale ID of importance for work activities dimension |
| wal (lowercase “L”) | Scale ID of level for work activities dimension |
| Work activities element | |
| 1 | "Analyzing Data or Information" |

| | |
|---|---|
| 2 | "Assisting and Caring for Others" |
| 3 | "Coaching and Developing Others" |
| 4 | "Communicating with People Outside the Organization " |
| 5 | "Communicating with Supervisors, Peers, or Subordinates" |
| 6 | "Controlling Machines and Processes" |
| 7 | "Coordinating the Work and Activities of Others" |
| 8 | "Developing and Building Teams" |
| 9 | "Developing Objectives and Strategies" |
| 10 | "Documenting/Recording Information" |
| 11 | "Drafting, Laying Out, and Specifying Technical Devices, Parts, and Equipment" |
| 12 | "Establishing and Maintaining Interpersonal Relationships" |
| 13 | "Estimating the Quantifiable Characteristics of Products, Events, or Information" |
| 14 | "Evaluating Information to Determine Compliance with Standards" |
| 15 | "Getting Information" |
| 16 | "Guiding, Directing, and Motivating Subordinates" |
| 17 | "Handling and Moving Objects" |
| 18 | "Identifying Objects, Actions, and Events" |
| 19 | "Inspecting Equipment, Structures, or Materials" |
| 20 | "Interpreting the Meaning of Information for Others" |
| 21 | "Judging the Qualities of Objects, Actions, and Events" |
| 22 | "Making Decisions and Solving Problems" |
| 23 | "Monitoring and Controlling Resources" |
| 24 | "Monitoring Processes, Materials, or Surroundings" |
| 25 | "Operating Vehicles, Mechanized Devices, or Equipment" |
| 26 | "Organizing, Planning, and Prioritizing Work" |
| 27 | "Performing Administrative Activities" |
| 28 | "Performing for or Working Directly with the Public" |
| 29 | "Performing General Physical Activities" |
| 30 | "Processing Information" |
| 31 | "Providing Consultation and Advice to Others" |
| 32 | "Repairing and Maintaining Electronic Equipment" |
| 33 | "Repairing and Maintaining Mechanical Equipment" |
| 34 | "Resolving Conflicts and Negotiating with Others" |
| 35 | "Scheduling Work and Activities" |
| 36 | "Selling or Influencing Others" |
| 37 | "Staffing Organization Units" |
| 38 | "Thinking Creatively" |
| 39 | "Training and Teaching Others" |
| 40 | "Updating and Using Relevant Knowledge" |
| 41 | "Working with Computers" |

Statistic or measure

| | |
|---|---|
| val | Data value statistic |
| n | Sample size statistic |
| ub | Upper bound confidence interval statistic |
| lb | Lower bound confidence interval statistic |

| | |
|---|---|
| se | Standard error statistic |

Statistic or measure type (These are computed over all O*NET SOC codes that are collapsed to create the Census 2000 or 2006 level data)

| | |
|---|---|
| mean | “Mean” data value |
| median | “Median” data value |
| total | “Total” sample size |
| max | “Max” sample size, standard error, or upper bound CI |
| min | “Min” sample size, standard error, or lower bound CI |

**Note: Some 2000 Census codes may have multiple O*NET-SOC codes collapsed into it; therefore, the max (or min) sample size, standard error, or upper (or lower) bound C.I. refers to the largest (or smallest) sample size, standard error or upper (or lower) bound C.I. amongst the collapsed O*NET-SOC codes.*

***Variable Naming and Description of Additional/Special Variables for Work activities Dimension***

| **Variable Name** | **Content** |
|---|---|
| *count_onet2000* | Count of 2000 ONET codes in 2000 Census code |
| *count_onet2006* | Count of 2006 ONET codes in 2006 Census code |
| *flag_onet* | Flag created to indicate that this particular case is one that relates to a O*NET-SOC 2000 code that maps to more than one 2000 Census code (1=Flag applies, 0=Flag does not apply) |
| *flag_onet* | Flag created to indicate that this particular case is one that relates to a O*NET-SOC 2006 code that maps to more than one 2000 Census code (1=Flag applies, 0=Flag does not apply) |
| *incumb* | Flag for the domain source of job incumbent (1=Domain source is job incumbent, 0=Domain source is not job incumbent) found in the historical O*NET 5.0-HRS 2004-2010 data release and O*NET 10.0-HRS 2004-2010 data release |
| *occ_expert* | Flag for the domain source of occupational expert (1=Domain source is occupational expert, 0=Domain source is not occupational expert) found in the HRS-O*NET 10.0 data |
| *analyst* | Flag for the domain source of analyst (1=Domain source is analyst, 0=Domain source is not analyst) found in the historical HRS-O*NET 10.0 data |
| le_analyst | Flag for the domain source of legacy analyst (1= Domain source is legacy analyst, 0 = Domain source is not legacy analyst) found in the HRS-O*NET 5.0 data and O*NET 10.0-HRS 2004-2010 data release |

| | |
|---|---|
| *date* | Date when data was last updated (*Note:* Some Census codes may have more than one O*NET-SOC collapsed into them; this variable refers to the earliest date when relevant) found in the HRS-O*NET 5.0 data and HRS-O*NET 10.0 data |

**Note: Some 2000 Census codes have multiple O*NET-SOC codes collapsed into it; therefore, some Census codes have flags for multiple domain sources. Multiple flags indicate that at least one O*NET-SOC code (in the collapsed Census code) has values that come from that domain source.*

Variables constructed from the work activities dimension are named beginning with "wa", for work activities measure, followed by either a "i" or "l", which refers to scale ID ratings (e.g., "importance" or "level"). A number (ranging from 1 to 41) signifies the work activities element (e.g., "Getting Information") follows the scale ID designator. Next follows a series of up to three letters designating the statistical values (e.g., n (sample size) or se (standard error)), then follows the identifier for the work activities element. After the statistical value descriptor, a separator "_", and then up to six letters are included to indicate the statistic or measure type completes the variable name.

For example, w*ai15val_mean* is the variable that refers to the mean importance data value for the "Getting Information" work activities element.

For additional/special variables constructed from the work activities dimension, variables are named beginning with "wa", for work activities measure, followed by either a "i" or "l", which refers to scale ID ratings (e.g., "importance" or "level"). A separator "_" and a variable descriptor (e.g., incumb or an_trans) then completes the variable name. For example, w*ai_incumb* is the variable that refers to the flag for the domain source of the job incumbent for the important work activities element.

# 6. If You Need to Know More

This document is intended to serve as a brief overview that provides guidelines for using this data product. If you have questions or concerns that are not adequately covered here or on our website, or if you have any comments, please contact us. We will do our best to provide answers.

### *HRS Internet Site*

Health and Retirement Study public release data and additional information about the study are available on the Internet. To access public data or to find out more about restricted data products and procedures, visit the HRS Web site.

### *Contact Information*

If you need to contact us, you may do so by one of the methods listed below.

Internet: Help Desk at the HRS Web site (https://hrs.isr.umich.edu/help) E-mail: hrsquestions@umich.edu
Postal Service:

Health and Retirement Study
The Institute for Social Research
426 Thompson Street, 3450 ISR
Ann Arbor, Michigan 48104

# Appendix A

The following tables shows all cases in which the project team made specific linkage decisions regarding our crosswalks[7]:

***Table 1. Crosswalk Linkage Decisions (Historical O*NET 5.0)***

| O*NET-SOC 2000 Code | O*NET-SOC 2000 Title | 2000 Census Code | 2000 Census Title | Linkage Decision |
|---|---|---|---|---|
| 27-3043.03 | Caption Writers | 285 | Writers and Authors | Linked to 582, Word Processors and Typists |

***Table 2. Crosswalk Linkage Decisions (Historical O*NET 10.0)***

| O*NET-SOC 2006 Code | O*NET-SOC 2006 Title | 2000 Census Code | 2000 Census Title | Linkage Decision |
|---|---|---|---|---|
| 23-2091.00 | Court Reporters | 215 | Miscellaneous Legal Support Workers | Linked to 215, Miscellaneous |

[7] Recommended by Pam Frugoli (O*NET and Competency Model Team Lead, Employment and Training Administration, and U.S. Department of Labor) on 8/19/2022

| | | | | |
|---|---|---|---|---|
| | | 285 | Writers and Authors | Legal Support Workers |
| 35-1011.00 | Chefs and Head Cooks | 400 | Chefs and Head Cooks | Linked only to 400, Chefs and Head Cooks |
| | | 780 | Bakers | |
| 47-4011.00 | Construction and Building Inspectors | 056 | Compliance Officers, Except Agriculture, Construction, Health and Safety, and Transportation | Linked only to 666, Construction and Building Inspectors |
| | | 666 | Construction and Building Inspectors | |
| 49-9031.00 | Home Appliance Repairers | 704 | Electric Motor, Power Tool, and Related Repairers | Linked only to 732, Home Appliance Repairers |
| | | 732 | Home Appliance Repairers | |
| 49-9091.00 | Coin, Vending, and Amusement Machine Servicers and Repairers | 701 | Computer, Automated Teller, and Office Machine Repairers | Linked only to 751, Coin, Vending, and Amusement Machine Servicers and Repairers |
| | | 751 | Coin, Vending, and Amusement Machine Servicers and Repairers | |

| | | | | |
|---|---|---|---|---|
| 51-4072.00 | Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic | 810 | Molders and Molding Machine Setters, Operators, and Tenders, Metal and Plastic | Linked only to 810, Molders and Molding Machine Setters, Operators, and Tenders, Metal and Plastic |
| | | 892 | Molders, Shapers, and Casters, Except Metal and Plastic | |