

HEALTH AND RETIREMENT STUDY

Restricted Data

2017-19 Life History Mail Survey (LHMS)

Job History Imputation and O*NET Data

Data Description

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To the Restricted Data Investigator:

Use of this data product is limited to researchers who have obtained authorization from the Health and Retirement Study and the University of Michigan.

If there are any questions about this data set and its use, refer to the [HRS Restricted Data Website](#) or contact the [HRS Help Desk](#).

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1. Introduction

The Life History Mail Survey (LHMS) is part of the Health and Retirement Study (HRS), which is funded under a cooperative agreement between the National Institute on Aging (NIA) and the Survey Research Center, Institute for Social at the University of Michigan (U01 AG009740), where the study is conducted. Through 2025, the Spring LHMS was funded through a separate NIA grant (R01 AG051142). The HRS is a longitudinal nationally representative study of US adults over age 50 that is designed to provide reliable data on the decisions, choices, and behaviors of people as they age and respond to changes in public policy, the economy, and health.

The LHMS is a mail survey administered once to all HRS participants. It aims to fill in the gaps in information on earlier life experiences of HRS participants (childhood through midlife), including their job history, residential history, education history, and other important childhood and family events. The questions in the LHMS are based on several studies in the HRS international Family of Studies, including the English Longitudinal Study of Aging (ELSA, England), the Survey of Health, Ageing and Retirement in Europe (SHARELIFE), and the China Health and Retirement Longitudinal Study (CHARLS). Visit the Life History page on the HRS website (hrs.isr.umich.edu) for full information on life history data resources in the HRS. Go to Data Products/Life History Data.

The 2017-19 Life History Mail Survey Job History Data described herein is focused on the job history portion of the LHMS.

By receiving the dataset, you agree to use it for research and statistical purposes only and make no effort to identify respondents. In addition, you agree to send us a copy of publications you produce based on the data. See Registration and Downloading the Data (at the end of this document) for additional details.

2. General Information

The HRS core survey contains concurrent longitudinal information on occupational status. The baseline core interview obtains information on the current job and industry (if still working) and up to five previous jobs held by the respondent. The questions in the LHMS expand the content of HRS core information with early-life working histories. In the LHMS, each respondent reported up to 10 jobs they held for more than a year after completing full time education in a grid with one line for each job that includes whether it was full or part-time and the start and end date of each job. Combined with the later-life employment information in the core, this provides comprehensive lifetime job history information. For a detailed discussion of the concordance between these two sources where they overlap, please see:

Sonnega, A., Al-Hinai, M., Chen, Q. Helppie-McFall, B., & Smith, J. (2024). Can retrospective reports provide reliable lifetime occupational histories? A comparison with prospective reports in a national sample of older adults, *Innovation in Aging*, 8(3), igae021.

<https://doi.org/10.1093/geroni/igae021>

There are two datasets in this release. ***Job_History_Imputed_1719*** is a dataset that provides the most comprehensive job history of individuals who participated in the LHMS 2017 and 2019. It covers jobs held more than a year after completion of full-time education up until 2019. For each job, the dataset lists the starting year, ending year, occupation, and full/part-time status. Researchers can easily link these data with other HRS data products using identification variables. In addition, since each job listed in the LHMS job history has been hand-coded with the Census 2010 occupation codes, it is possible to link to other sources of data using these codes. ***Job_History_ONET_1719*** is a dataset that provides a linkage between ***Job_History_Imputed_1719*** and some of the detailed information available in the Department of Labor's Occupational Information Network, or O*NET.

3. Job History Imputation Process and Linkage

In order to create the most complete and reliable job history information, we performed a series of imputation steps to reconcile potential inconsistency between the two sources (HRS Core and LHMS) and to fill in missing information, using the LHMS as the foundational information and filling in missing information with information from the Core interview where possible.

We consider the LHMS job history information to be the foundational source as it is a detailed, self-administered survey where respondents are encouraged to consult personal records for accurate recall. For periods where LHMS and the HRS Core survey overlap, we leverage the HRS Core data to validate and impute missing job start and end dates in the LHMS records.

This imputation follows a prioritized six-step process, reflecting a descending confidence level in the accuracy of the information used for the imputation. Detailed methodology and specific conditions for each step are presented in the Appendix I.

Step 1: Imputation based on Current Job Tenure

This step leverages the longitudinal consistency of the HRS Core data to infer job changes. By tracking the reported current job tenure across successive waves, we can determine if a respondent remained in the same job or transitioned to a new one. The actual job start or end dates inferred from this inter-wave analysis are then used to fill corresponding missing dates in the LHMS job records.

Step 2: Imputation based on Longest Job Tenure

This process uses the reported longest job tenure as a constraint on a job's duration. If the longest tenure increases wave-to-wave, it helps establish a precise date range for the job. If an LHMS job is missing a date, it is imputed based on the existing valid date plus the longest reported tenure.

Step 3: Imputation based on Retirement Status

This step addresses missing end dates by utilizing the respondent's self-reported retirement status in the HRS Core. A confirmed retirement date establishes a definitive work cessation point. This date is then used as the imputed end date for the individual's final reported LHMS job that is still missing an end date.

Step 4: Imputation based on Year Last Worked

This step uses the last year a respondent reported working in the HRS Core to fill remaining missing job end dates in the LHMS. It serves as a boundary condition, that no work can extend beyond this date.

Step 5: Imputation based on Currently Working Status

This uses a general currently working status indicator as a final imputation effort for missing dates in LHMS jobs. The latest year the individual reported being currently working is used for the missing end date. Similar to Step 4, this imputed end date is when currently working status ends.

Step 6: Job Record Creation

This final step ensures complete coverage by identifying job episodes that exist in the HRS Core but are entirely missing from the LHMS. Based on the same robust inter-wave analysis logic from Step 1, if a distinct job episode is confirmed during the HRS Core period, a new job record is created and added to the individual's history.

ONET Measure Construction

Following the imputation process, the comprehensive job history is converted into an individual-year panel, where multiple jobs may be recorded within a single year. For each year, occupational characteristics are merged using ONET measures mapped to 2010 Census occupation codes. We use the [Census 2010 Occupation Code–Occupational Information Network \(ONET\) 26.1 dataset \(version 2\)](#), a joint data product developed by the University of Michigan and Florida State University. These measures are adjusted for work intensity: part-time jobs receive half the weight of full-time jobs. When multiple jobs are held in the same year, the weighted measures are averaged and then normalized to represent the equivalent of a single full-time job. Furthermore, for jobs in the LHMS that report both starting and ending occupations without an explicit transition date, a linear transition weighting scheme is applied. The starting occupation receives 100% of the O*NET weight in the first year, and this weight declines linearly until the final year, where the ending occupation receives 100% of the weight.

4. About the Data

a. Job_History_Imputed_1719: Variable Names and Labels

TABLE 1: VARIABLE NAMES AND DESCRIPTION FOR IMPUTED JOB HISTORY

Variable Name	Description
HHID	HOUSEHOLD IDENTIFICATION NUMBER
PN	RESPONDENT PERSON IDENTIFICATION NUMBER
Job ID	JOB ID THAT INDICATES THE ORDER OF JOBS
JOB START YEAR	JOB START YEAR
JOB END YEAR	JOB END YEAR

JOB OCC	FIRST/ONLY JOB OCCUPATION (2010 CENSUS OCCUPATION SCHEME)
JOB LAST OCC	LAST JOB OCCUPATION (2010 CENSUS OCCUPATION SCHEME)
JOB IND	FIRST/ONLY JOB INDUSTRY (2007 CENSUS INDUSTRY SCHEME)
JOB LAST IND	LAST JOB INDUSTRY (2007 CENSUS INDUSTRY SCHEME)
JOB FTPT	JOB FULL-TIME AND PART-TIME STATUS
SOURCE	SOURCE OF THIS RECORD
FIX START FLAG	FLAG WHETHER THE START YEAR IS IMPUTED
FIX END FLAG	FLAG WHETHER THE END YEAR IS IMPUTED
FIX FTPT FLAG	FLAG WHETHER THE FULL-/PART-TIME STATUS IS IMPUTED
LHMS JOB ID	SAME JOB ID AS LHMS ¹
Data Quality Flag	FLAG FOR WHETHER THE RECORD INCLUDES IMPUTED INFORMATION AND HOW IMPUTATION IS PERFORMED
IMP VERSION	VERSION (e.g. v#: YYYY_MM_DD)

b. Job_History_ONET_1719: Variable Names and Labels

TABLE 2: VARIABLE NAMES AND DESCRIPTION FOR JOB HISTORY ONET

Variable Name	Description
HHID	HOUSEHOLD IDENTIFICATION NUMBER
PN	RESPONDENT PERSON IDENTIFICATION NUMBER
YEAR	YEAR
[C][T]#VAL_MEAN	O*NET EXPOSURE FOR CATEGORY C (e.g. K for Knowledge) TYPE T (e.g. I for Importance) OF MEASURE #. ²
JOB HIST CONFIDENCE LVL	FLAG FOR WHETHER THE RECORD INCLUDES IMPUTED INFORMATION AND HOW IMPUTATION IS PERFORMED

¹ There are up to 10 jobs in each LHMS survey. This “LHMS JOB ID” corresponds to the job id in LHMS for reference purposes. For example, when a record has SOURCE = “2017 LHMS Fall” and LHMS JOB ID = 1, then one can find information of the same job in LHMS 2017 Fall survey under LH41_1X_17, where X corresponds to different characters depending on the relevant question.

² For a full list of the categories, types, and measurement numbers see Appendix II.

NOONET VAL FLAG	FLAG FOR OCCUPATION OBSERVED, BUT NO O*NET MEASURE AVAILABLE FROM O*NET RELEASE
IMP VERSION	JOB HISTORY IMPUTATION VERSION (e.g. "v#: YYYY_MM_DD")
ONET VERSION	CORRESPONDING O*NET RELEASE (e.g. "Release 26.1")

c. Data Quality

It is important to note the LHMS job history data that came in from the field underwent a considerable amount of data quality work. Due to the skip patterns in the LHMS questionnaire, all missing answers are treated the same in the dataset and coded as simply "Answer not given/Missing." This is true whether the respondent was "expected" to answer the question or not, based on earlier responses.

While cleaning the data, when extreme, unlikely or conflicting values were encountered, electronic images of the questionnaires were checked directly to determine if errors were introduced during the data entry/scanning process. This includes instances where a start year is greater than an end year, or a start age is greater than an end age. If the respondent reported the extreme or conflicting value, the value appears unchanged in the data. The imputation work described herein took place after this initial quality work had been done.

Occupation and Industry

Occupation is reported in the 2010 census occupation scheme and industry is reported in 2007 census industry scheme.

5. File Structure

The LHMS Job History Data (Version 1) release includes two files. The imputed job history file, ***Job_History_Imputed_1719***, is at the individual job level, and can be uniquely identified by HHID, PN, and JOB_ID. The other dataset ***Job_History_ONET_1719*** is an individual year level data, which should be uniquely identified by HHID, PN, and YEAR.

The primary identification variables (IDs) are:

TABLE 3: PRIMARY ID FOR *Job_History_Imputed_1719*

Variable Name	Description
HHID	HOUSEHOLD IDENTIFIER
PN	PERSON NUMBER
JOB_ID	JOB ID

TABLE 4: PRIMARY ID FOR Job_History_ONET_1719

Variable Name	Description
HHID	HOUSEHOLD IDENTIFIER
PN	PERSON NUMBER
YEAR	YEAR OF O*NET EXPOSURE

6. Distribution Files

The following extensions are used for the 3 different types of distribution files:

.sas7bdat for SAS “ready-to-use” files,

.sav for SPSS “ready-to-use” files,

.dta for Stata “ready-to-use” files.

The Job History Imputation data (Version 1) and Job History ONET data (Version 1) are provided as SAS (.sas7bdat), SPSS (.sav) and Stata (.dta) “ready-to-use” files.

7. Obtaining the Data

a. Conditions of Use

By using HRS data, you agree to our [Conditions of Use](#).

b. Access to Restricted Data

Although most HRS data sets are available to the public without restriction, certain HRS data sets contain sensitive respondent information and are only available under terms of a formal agreement negotiated between the researcher and HRS. Prospective users of HRS restricted data may obtain access through the [Michigan Center on the Demography of Aging \(MiCDA\) Virtual Desktop Infrastructure](#). For instructions on how to proceed, visit the [HRS Restricted Data Website](#). If you have questions, contact the [HRS Restricted Data Applications](#) team.

c. Restricted Data Agreement

This restricted data set is intended for exclusive use by you and the persons (if any) specified in your restricted data agreement. Access to this data set is limited to users who have been approved for the MiCDA VDI by the Health and Retirement Study and the University of Michigan.

d. Publications Based on Data

Your restricted data agreement requires you to inform HRS of any papers, publications, or presentations based on the data set. Send a bibliographical reference (including a URL link whenever possible) for each published item to the HRS Restricted Data Applications Processing Team with “Attn: Papers and Publications” in the subject line. Whenever possible, a PDF-formatted copy of the publication should be included. As an alternative, publications may be transmitted in paper format by postal mail:

Health and Retirement Study
Attn: Papers and Publications
The Institute for Social Research
P.O. Box 1248
Ann Arbor, MI 48106-1248

8. If You Need to Know More

This document is intended to serve as a brief overview and to provide guidelines to using the LHMS Job History data. Additional information about the HRS can be obtained from the HRS web site (hrs.isr.umich.edu). If you have questions or concerns that are not adequately covered here or on our web site, please contact us at hrsquestions@umich.edu.

a. Contact Information

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

E-mail: hrsquestions@umich.edu

Postal service:

Health and Retirement Study
The Institute for Social Research
The University of Michigan
P.O. Box 1248
Ann Arbor, MI 48106-1248

FAX: (734) 647-1186

Appendix I Technical Note (Data Construction)

In this section, we document the data construction process, discuss limitations of the imputation process and potential ways to further improve. When constructing the dataset, we first performed a pre-imputation cleaning operation and then used five different variables in the RAND HRS to do the imputation.

1.1 Pre-Imputation Cleaning

LH41_#E_17 and LH41_#EL_17 (LH41_#E_19 and LH41_#EL_19) are the first/only and last job industry in 2017 (2019) LHMS survey³ for up to 10 jobs ($1 \leq x \leq 10$). LH41_#F_17 and LH41_#FL_17 (LH41_#F_19 and LH41_#FL_19) are the first/only and last job occupation in 2017 (2019) LHMS survey⁴ for up to 10 jobs ($1 \leq x \leq 10$). LH41_#A_17 and LH41_#B_17 (LH41_#A_19 and LH41_#B_19) are the corresponding start and end years of these jobs. The job history is reorganized so that the first/only job title and last job title are viewed as two different jobs. The original job start year is assigned to the new job based on the first/only job title as its start year. The original job end year is assigned to the new job based on the last job title as its end year. However, the two new jobs have either a missing end year or a missing start year since we do not have information on when the job title changed. These missing years would be imputed in a similar fashion as other jobs with missing start and end years which are described in section 1.2 below. Besides, the two new jobs share the same characteristics for all other fields (full/part-time status, industry, etc.)

1.2 Imputation with RAND HRS

Current Job Tenure

RwJCTEN is the job tenure for a current job. RwSAMEJOB is a flag variable tracking whether an individual is working for the employer or holding the same job. Tenure of current job is expected to increase by 2 every wave if an individual holds the same job as last wave, because HRS is a biennial survey. When the tenure of the current job deviates from the expected pattern, we can infer a job has ended and a new job has started. When combined with the survey dates, we can infer the start and end years for all the jobs an individual holds during the years covered by HRS. The missing start/end years are filled if the year of the other end (either end or start) matches with the record in LHMS.

Longest Job Tenure

RwJLTEN is the tenure of the job held longest up to the current wave. An increase in longest job tenure indicates the job a respondent currently holding is the job associated with the longest tenure. When the longest job tenure stops increasing, then it indicates the job has ended. Based on the tenure and survey dates, we can infer the start and end years of the job. This information will be used to impute the end year when a job has a matched start year or vice versa.

³ LHMS 2017 (2019) Fall and Spring Surveys. The corresponding variables in LHMS 2017 Fall Supplement Survey are LH6_xF_17FS and LH5_xFL_17FS. The corresponding variables in

⁴ LHMS 2017 (2019) Fall and Spring Surveys. The corresponding variables in LHMS 2017 Fall Supplement Survey are LH6_xF_17FS and LH5_xFL_17FS. The corresponding variables in

Retirement Year

RwRETYR is the year that an individual retired. We expect individuals to stop working when they are retired. We search backward from the last wave available in the RAND HRS and fill in the end year for jobs that are missing. This imputation is only applied to the last jobs people held before their retirement.

Year Last Worked

RwJLASTY is the last year that an individual worked. The end years of jobs should be no later than the last year an individual worked. Thus, we fill in the missing year based on the year a person last worked. Given the possibility that a person could switch back and forth between working and not working due to employment fluctuations. The imputation of missing end years is completed in sequential order from the first wave to the last wave. The first year after a job starts that an individual claims not working is used.

Meanwhile the start years of jobs should be no earlier than the year that an individual reported a specific year they worked. Correspondingly, we can impute job start years based on the first wave an individual did not report the last year they worked. The first year that an individual no longer reports the specific year they last worked is used as the imputed job start year.

Currently Working

RwWORK is the working status of an individual in wave w . If a job has a missing start year. We impute it by selecting the last year the individual is not working or the end year of the previous job, whichever comes first when searching in the reverse chronological order. If a job's end year is missing, we impute it by selecting the earliest between the start year of the next job and the first year the individual is no longer working.

Current Job Tenure (Again)

Similar to the first step, we can construct job history based on how current job tenure changes. Then any job that has a start year later than the last job reported in LHMS is added to the job history. This specifically solves cases where one had more than 10 jobs, which appears in HRS Core but not recorded in LHMS.

Current Working Hours

RwJHOURS is the hours for the current job held by an individual. For years when the survey overlaps with the working period, we impute the full- and part-time status by the more frequent of the two in the overlapping waves. The cutoff for full time is 32 hours per week. When there is a tie between full-time and part-time, then we view it as a full-time job.

1.3 Limitations and Future Directions

The imputed dataset has some limitations. We used the Core data to fill in the missing information in the LHMS, but there could be some inaccuracy in recall even in the Core since the interview takes place every two years. The imputed information is more reliable for jobs that are more recent. Finally, it is important to note that it was not possible to impute missing jobs that had both begin and end dates missing.

There are some strategies for improving the data that could be undertaken in the future. Researchers could utilize the link to Social Security Administration (SSA) data to further confirm individuals' job histories. In addition, one could use the information collected in the LHMS that asks what the respondents did after leaving each job.

Appendix II O*NET Information

TABLE A1: O*NET MEASURES, CATEGORY AND TYPE ABBREVIATIONS

O*NET	Category	Type
Knowledge (Importance)	K	I
Knowledge (Level)	K	L
Skills (Importance)	S	I
Skills (Level)	S	L
Abilities (Importance)	A	I
Abilities (Level)	A	L
Work Context	WC	
Job Zones	JZ	
Interests	IN	
Work Values	WV	
Work Styles (Importance)	WS	I
Work Activities (Importance)	WA	I
Work Activities (Level)	WA	L

TABLE A2: DETAILED ID FOR ALL AVAILABLE O*NET MEASURES

Knowledge	ID
Administration and Management	1
Biology	2
Building and Construction	3
Chemistry	4
Clerical	5
Communications and Media	6
Computers and Electronics	7
Customer and Personal Service	8
Design	9
Economics and Accounting	10
Education and Training	11
Engineering and Technology	12
English Language	13
Fine Arts	14
Food Production	15
Foreign Language	16
Geography	17

History and Archeology	18
Law and Government	19
Mathematics	20
Mechanical	21
Medicine and Dentistry	22
Personnel and Human Resources	23
Philosophy and Theology	24
Physics	25
Production and Processing	26
Psychology	27
Public Safety and Security	28
Sales and Marketing	29
Sociology and Anthropology	30
Telecommunications	31
Therapy and Counseling	32
Transportation	33
Skill	ID
Active Learning	1
Active Listening	2
Complex Problem Solving	3
Coordination	4
Critical Thinking	5
Equipment Maintenance	6
Equipment Selection	7
Installation	8
Instructing	9
Judgment and Decision Making	10
Learning Strategies	11
Management of Financial Resources	12
Management of Material Resources	13
Management of Personnel Resources	14
Mathematics	15
Monitoring	16
Negotiation	17

Operation and Control	18
Operations Analysis	19
Operations Monitoring	20
Persuasion	21
Programming	22
Quality Control Analysis	23
Reading Comprehension	24
Repairing	25
Science	26
Service Orientation	27
Social Perceptiveness	28
Speaking	29
Systems Analysis	30
Systems Evaluation	31
Technology Design	32
Time Management	33
Troubleshooting	34
Writing	35
Abilities	ID
Arm-Hand Steadiness	1
Auditory Attention	2
Category Flexibility	3
Control Precision	4
Deductive Reasoning	5
Depth Perception	6
Dynamic Flexibility	7
Dynamic Strength	8
Explosive Strength	9
Extent Flexibility	10
Far Vision	11
Finger Dexterity	12
Flexibility of Closure	13
Fluency of Ideas	14
Glare Sensitivity	15

Gross Body Coordination	16
Gross Body Equilibrium	17
Hearing Sensitivity	18
Inductive Reasoning	19
Information Ordering	20
Manual Dexterity	21
Mathematical Reasoning	22
Memorization	23
Multilimb Coordination	24
Near Vision	25
Night Vision	26
Number Facility	27
Oral Comprehension	28
Oral Expression	29
Originality	30
Perceptual Speed	31
Peripheral Vision	32
Problem Sensitivity	33
Rate Control	34
Reaction Time	35
Response Orientation	36
Selective Attention	37
Sound Localization	38
Spatial Orientation	39
Speech Clarity	40
Speech Recognition	41
Speed of Closure	42
Speed of Limb Movement	43
Stamina	44
Static Strength	45
Time Sharing	46
Trunk Strength	47
Visual Color Discrimination	48
Visualization	49

Wrist-Finger Speed	50
Written Comprehension	51
Written Expression	52
Work Activities	ID
Analyzing Data or Information	1
Assisting and Caring for Others	2
Coaching and Developing Others	3
Communicating with People Outside the Organization	4
Communicating with Supervisors, Peers, or Subordinates	5
Controlling Machines and Processes	6
Coordinating the Work and Activities of Others	7
Developing and Building Teams	8
Developing Objectives and Strategies	9
Documenting/Recording Information	10
Drafting, Laying Out, and Specifying Technical Devices, Parts, and Equipment	11
Establishing and Maintaining Interpersonal Relationships	12
Estimating the Quantifiable Characteristics of Products, Events, or Information	13
Evaluating Information to Determine Compliance with Standards	14
Getting Information	15
Guiding, Directing, and Motivating Subordinates	16
Handling and Moving Objects	17
Identifying Objects, Actions, and Events	18
Inspecting Equipment, Structures, or Materials	19
Interacting with Computers	20
Interpreting the Meaning of Information for Others	21
Judging the Qualities of Things, Services, or People	22
Making Decisions and Solving Problems	23
Monitor Processes, Materials, or Surroundings	24
Monitoring and Controlling Resources	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 Organizational Units	38
Thinking Creatively	39
Training and Teaching Others	40
Updating and Using Relevant Knowledge	41
Work Styles	ID
Achievement/Effort	1
Adaptability/Flexibility	2
Analytical Thinking	3
Attention to Detail	4
Concern for Others	5
Cooperation	6
Dependability	7
Independence	8
Initiative	9
Innovation	10
Integrity	11
Leadership	12
Persistence	13
Self-Control	14
Social Orientation	15
Stress Tolerance	16
Interest	ID
Artistic	1
Conventional	2
Enterprising	3

Investigative	4
Realistic	5
Social	6
Work Values	ID
Achievement	1
Independence	2
Recognition	3
Relationships	4
Support	5
Working Conditions	6
Work Context	ID
Consequence of Error	1
Contact With Others	2
Coordinate or Lead Others	3
Cramped Work Space, Awkward Positions	4
Deal With External Customers	5
Deal With Physically Aggressive People	6
Deal With Unpleasant or Angry People	7
Degree of Automation	8
Duration of Typical Work Week	9
Electronic Mail	10
Exposed to Contaminants	11
Exposed to Disease or Infections	12
Exposed to Hazardous Conditions	13
Exposed to Hazardous Equipment	14
Exposed to High Places	15
Exposed to Minor Burns, Cuts, Bites, or Stings	16
Exposed to Radiation	17
Exposed to Whole Body Vibration	18
Extremely Bright or Inadequate Lighting	19
Face-to-Face Discussions	20
Freedom to Make Decisions	21
Frequency of Conflict Situations	22
Frequency of Decision Making	23

Impact of Decisions on Co-workers or Company Results	24
Importance of Being Exact or Accurate	25
Importance of Repeating Same Tasks	26
In an Enclosed Vehicle or Equipment	27
In an Open Vehicle or Equipment	28
Indoors, Environmentally Controlled	29
Indoors, Not Environmentally Controlled	30
Letters and Memos	31
Level of Competition	32
Outdoors, Exposed to Weather	33
Outdoors, Under Cover	34
Pace Determined by Speed of Equipment	35
Physical Proximity	36
Public Speaking	37
Responsibility for Outcomes and Results	38
Responsible for Others' Health and Safety	39
Sounds, Noise Levels Are Distracting or Uncomfortable	40
Spend Time Bending or Twisting the Body	41
Spend Time Climbing Ladders, Scaffolds, or Poles	42
Spend Time Keeping or Regaining Balance	43
Spend Time Kneeling, Crouching, Stooping, or Crawling	44
Spend Time Making Repetitive Motions	45
Spend Time Sitting	46
Spend Time Standing	47
Spend Time Using Your Hands to Handle, Control, or Feel Objects, Tools, or Controls	48
Spend Time Walking and Running	49
Structured versus Unstructured Work	50
Telephone	51
Time Pressure	52
Very Hot or Cold Temperatures	53
Wear Common Protective or Safety Equipment such as Safety Shoes, Glasses, Gloves, Hearing Protection, Hard Hats, or Life Jackets	54
Wear Specialized Protective or Safety Equipment such as	55

Breathing Apparatus, Safety Harness, Full Protection Suits, or Radiation Protection	
Work Schedules	56
Work With Work Group or Team	57