

Technical Documentation

This technical documentation describes the methodology followed by the APA Center for Workforce Studies (CWS) for processing and coding job ads data from APA psycCareers.

APA psycCareers (<https://www.psyccareers.com/>) is a job advertising and search platform that allows employers to post openings for psychology-based positions for a fee. APA psycCareers offers a variety of packages for job postings (<https://www.psyccareers.com/employer-offers>) through multiple channels. Potential employers fill out a job posting form, detailing information such as company name, position title, work setting, job type, job description, and job requirements. The information on the job posting form was the basis for the analysis contained in the CWS reports on psychology jobs.

Job advertisements posted to APA psycCareers from January 2015 through December 2017 were used for the analysis. In cases where one job ad was posted multiple times, duplicates were removed. From 2015 to 2017, 6,922 unique job advertisements were posted on APA psycCareers, which formed the sample for the analysis.

In July 2016, APA psycCareers underwent changes that may have affected the number and the format of job advertisements. The system changed vendors, which involved changes in payment packages and the job posting form. A new payment package, the "Featured" online job posting package, was made available in July 2016. The job posting form also added additional questions for the first time, such as work setting, position type, minimum education, and minimum experience. Prior to the vendor change, only employer name, job title, job description, and job requirements were included in the job posting form. Approximately 50 percent of job ads were from the old vendor system and 50 percent were from the new vendor system.

The primary data processing methodology adopted in this analysis was text analysis of job posting forms. Based on text provided in the job posting form (including job title, company name, job description, and job requirements), each job ad was coded with different variables (such as "job type") and into a fixed set of values (such as "health service psychologist," or "faculty" job type). In most cases, the variables and the sets of values, or the taxonomy of the variables, were those typically used by the APA Center for Workforce Studies in workforce analysis. All job ads were in English.

The analysis relied heavily on the text of the job ad, rather than on other existing variables filled out in the job posting form, such as work setting and job type. There are a few reasons behind this approach:

- 1) The variables that remained consistent before and after the vendor change were job title, company name, job description and job requirements. As such, using text analysis on those variables ensured consistency in coding variables across job ads.

- 2) For job ads posted by intermediate agencies, the job title, company name, and text of job descriptions and requirements were more likely to have been developed directly by the original employer. They were therefore more reliable and accurate than the specific variables filled in by the agency in the job posting form (such as work setting), which often included incorrect and/or missing information. These existing values from the job posting form were only used when no values could be coded from the text.
- 3) The text analysis was dependent on the job title, company name, job description and requirements variables, and could be adapted to analyze job ads from other data sources. This is useful for future analyses of psychology job ads data.

The text analysis of job advertisements was mainly based on the occurrence and location of particular keywords in the text of the job title, company name, job description, and job requirements sections.

- The analysis started with a manual analysis of a random sample of 50 job posting forms by three coders who worked independently. For every variable, each coder came up with a coding procedure, such as what keywords in the text were used to determine the assignment of a value, and how and why the keywords determined the result. An initial coding protocol for each variable was developed through comparing and resolving the differences in the coding procedures and results among the coders. The coding protocol was then programmed in R and applied to all job posting forms. After that, various adjustments were made to the coding protocol based on extensive manual checking to ensure the accuracy and quality of the coding.
- The coding protocol was essentially a hierarchical system of decision rules based on the occurrence of particular words and phrases and the places in the job posting form where they appeared. For example, in determining job type, words such as "tenure" or "academic" weighed more than words such as "psychologist" or "clinical." Words that appeared in the job title also weighed more than words that appeared in the last sentence of the job description. The [coding protocol](#) for each variable is provided below.
- In some cases, only part of the job description was included for the analysis. This is because some job ads had long descriptions and contained information not directly related to the job (such as introduction of the company). Including the entire job description text often led to incorrect coding. Most job ads described the nature of the position in the first few sentences of the job description. Therefore, where applicable - and depending on the placement of where the keywords are likely to appear - only the title and the first few hundred characters of the description were used for coding certain variables.
- In cases where no values could be coded from the text, existing variables filled out on the job posting form (such as job type and work setting) were used. For the majority of variables, fewer than five percent of job ads were coded based on existing values.

- In cases where no values were coded from the text and no other existing variables were available, results were manually coded. Two coders manually read all the text from these job posting forms and made judgements about how variables should be coded. Manual coding accounted for less than 10 percent of all job posting forms across all variables. Results from different coders were compared and differences were resolved by consensus among coders.

Some job ads contained multiple openings for one position type (e.g., two openings for clinical psychologist) or multiple position types (e.g., one opening for clinical psychologist and another opening for counseling psychologist in one job ad). While it was possible to identify job ads with multiple positions through text analysis, it was difficult to separate different positions within a job ad through text analysis (which often required manually identifying the breaks between descriptions). Therefore, the level of analysis was the job ad rather than the individual position. Based on text analysis on job title and job description, it is estimated that about 17 percent of job ads posted to APA psycCareers contained multiple positions.

The following sections document examples of text analysis for key variables in the analysis. Not all variables were included in every report. A total of 157 lists of keywords (each containing 10-50 keywords) were developed to code variables. Due to the large volume of keywords, only examples are provided in the documentation below. In some cases, word roots (such as psych-) were used to capture all keywords containing the word roots (such as psychologist, psychology, psychometrics, etc.).

Coding Protocol

Job Ads with Multiple Jobs

Job ads were coded as containing multiple jobs if the job titles or the first three hundred characters of the job description contained plural titles such as “psychologists”, “consultants”, “researchers”, and “directors” or keywords such as “job opportunities”, “job openings”, and “positions available”.

Job Type

Each job ad was categorized as only one of the following five values: Health Service Psychologist, Faculty, Researcher, Applied Psychologist, or Other. A two-tier hierarchical coding system was developed as follows:

First tier – these examples of keywords were used in the first tier of coding:

- Job ads were coded as "Faculty" if the job title included keywords such as "chair", "dean", "prof", "faculty", and "director of clinical training", or the first four hundred characters of the job description included keywords such as "tenured", "rank", and "professor".
- Otherwise, job ads were coded as "Applied Psychologist" if the job title included keywords such as "forensic", "I/O", "industrial organizational", "human factor", or if the job description included keywords such as "forensic services", "HR assessment", "business psychology", and "consumer behavioral".
- Otherwise, job ads were coded as "Researcher" if the job title included keywords such as "analyst", "researcher", "scientist", and "data".
- Otherwise, job ads were coded as "Health Service Psychologist" if the job title included keywords such as "clinician" and "counselor", or the job description included keywords such as "clinical care", "clinical service", "health service", "patient care", "primary care", "therapy", and "treatment".

Second tier - If the job ads were not categorized as any job type in the first-tier, then a second-tier of keywords was used in determining job type:

- Job ads were coded as "Applied Psychologist" if the job description included keywords such as "client facing consultation", "consulting services", "performance evaluation", and "professional development and management".
- Otherwise, job ads were coded as "Researcher" if the job description included keywords such as "analyze", "data collection", "research career", and "scientific research".
- Otherwise, job ads were coded as "Other". All job ads coded as "other" job type were manually checked for accuracy and were recoded as appropriate. Approximately one percent of job ads were coded as "Other".

Leadership Positions

Job ads were coded as "Leadership" positions if the job title or the first three hundred characters of job description included key words such as "administrator", "CEO", "chair", "chief", "dean", "department head", "director", "president", and "provide leadership".

Work Setting

Each job ad was categorized as one of the following seven values: Private Practice, Hospital, Organized Human Service Setting, Educational Setting, Government, and Other Settings. For an entire list of work settings (detailing specific settings within each broad setting), please refer to

Question 19 of the instrument for the APA [2015 Survey of Psychology Health Service Providers](https://www.apa.org/workforce/publications/15-health-service-providers/index.aspx).¹

- Job ads were categorized as a "Hospital" setting if the company name or the first three hundred characters of job description included keywords such as "hospital", "VA hospital", and "Veteran's hospital".
- Otherwise, job ads were categorized as a "Private Practice" setting if the company name or the first three hundred characters of job description included keywords such as "group practice", "private practice", and "psychology practice".
- Otherwise, job ads were categorized as an "Educational" setting if the company name or the first three hundred characters of job description included keywords such as "college", "school", and "university".
- Otherwise, job ads were categorized as a "Government" setting if the company name or the first three hundred characters of job description included keywords such as "army", "correctional", "government", "jail", "military", "police", and "prison".
- Otherwise, job ads were categorized as a "Organized Human Service" setting if the company name or the first three hundred characters of job description included keywords such as "accountable care organization", "care center", "health maintenance organization", "guidance center", "medical center", and "medical group".
- Otherwise, job ads were categorized as a "Business" setting if the company name or the job description included keywords such as "consulting firm", "research group", "research organization", and "independent consultant".
- Otherwise, job ads were categorized as "Other" settings. All job ads coded within "Other" settings were then manually checked for accuracy and were recoded where applies. Approximately three percent of job ads were coded as "Other" settings.

Work Activity

Each job ad was coded with at least one of the following six types of work activities: Education, Research, Health Services, Applied Psychology, Management, and Other.

- Job ads were coded as "Education" if the job ad was coded as "Faculty" job type, or if the job title or job description included keywords such as: "course evaluation", "curricular development", "educate", "mentor", "student supervision", and "teach".
- Job ads were coded as "Research" if the job ad was coded as "Researcher" or "Faculty" job type, or the job description included keywords such as: "academic research", "analysis of data", "data collection", "data management", "reads literature", "report writing", and "supervise research".

¹ American Psychological Association. (2016). 2015 survey of psychology health service providers. Retrieved from <https://www.apa.org/workforce/publications/15-health-service-providers/index.aspx>

- Job ads were coded as "Health Services" if the job ad was coded as "Health Service Psychologist" job type, or if the job title or job description included keywords such as: "client care", "clinical service", "clinical supervision", "diagnosis", "inpatient care", "outpatient care", "psychological assessment", "therapeutic services".
- Job ads were coded as "Applied Psychology" if the job ad was coded as "Applied Psychologist" job type, or if the job title or job description included keywords such as: "forensic evaluation", "forensic service", "business analysis", "employee development", "industrial organizational consult", "human resource consult", and "organizational development".
- Job ads were coded as "Management" if the job title or job description included keywords such as: "administration", "provide leadership", "budget management", "financial planning", "HR assessment", "personnel assessment", "policy review", "program evaluation", and "system evaluation".
- Job ads were coded as "Other" if the job title or job description included keywords such as "marketing", "publishing", and "sales".
- Job ads not coded in any of the above work activity categories were then manually re-coded. After manual recoding, job ads still not coded in any of the above categories were coded as "Not Specified". Less than one percent of job ads were coded as "Not Specified" activity.

Employment Status

Job ads that included the phrase "part time" in the description or indicated "part-time" in the job posting form were coded as part-time.

Job ads that included the phrase "full time" in the description or indicated "full-time" in the job posting form were coded as full-time.

Job ads that included both phrases, "full time" and "part time", in the job posting form were coded as full-time.

Job ads that included phrases such as "applications for a temporary", "job type temporary", "temporary appointment", or "temporary with benefits" in the position title or job description were coded as a temporary position.

Job ads that included the word "temp" in the job posting form were coded as a temporary position.

All other ads were considered non-temporary positions.

Geographic Location

The analysis focused on job ads within the United States. The geographic analysis focused on state and location (based on zip codes) of the company that posted the job ads.

For job ads that listed multiple jobs (approximately 17 percent of job ads) and also multiple locations, only the first location filled out in the job posting form was used in the analysis.

Zip codes were not available before July 2016 (prior to system vendor change). Zip code information for job ads posted during or after July 2016 were used to fill data for some job ads before July 2016 based on employer names. A Google Maps API was also utilized for filling missing states and zip codes based on company name, which essentially searched each company name on Google Maps and returned the state and zip code information.

After data processing, state information was retrieved for 94 percent of job ads, and zip code information was retrieved for 81 percent of job ads.

Tenure Status

Each job ad coded as "faculty positions" was then coded into one of the following tenure status categories: non-tenure, tenure-track, tenured, and tenured or tenure-track, based on the following conditions:

Condition 1: The job title or the first three hundred characters of the job description included keywords such as "non-tenure-track" or "not-tenure."

Condition 2: The job title or the first three hundred characters of the job description included keywords such as "tenure-track."

Condition 3: The job title or the first three hundred characters of the job description included the keyword "tenured."

- Job ads for faculty positions were coded as "Non-tenure" if they satisfied condition 1.
- Otherwise,
 - Job ads for faculty positions were coded as "Tenure or Tenure-Track" if they satisfy both conditions 2 and 3.
 - Otherwise, job ads for faculty positions were coded as "Tenure-Track" if the position satisfy condition 2.
 - Otherwise, job ads for faculty positions were coded as "Tenured" if the position satisfy condition 3.

- Otherwise, job ads for faculty positions were coded as "Non-specified" tenure status. Approximately 42 percent of job ads for faculty positions did not specify tenure status.

Faculty Rank

Each job ad coded as "faculty positions" were then coded into one of the following faculty rank categories: assistant professor, associate professor, full professor, and open-rank, based on the following conditions:

Condition 1: The position title and the first 300 characters of the job description included the word "assistant"

Condition 2: The position title and the first 300 characters of the job description included the words "associate" or "assoc"

Condition 3: The position title and the first 300 characters of the job description included the words "full professor" or "full prof"

Condition 4: The position title and the first 300 characters of the job description included the words "open rank"

- Job ads for faculty positions were coded as "Open Rank" if they satisfied condition 4 and satisfy more than one from conditions 1, 2, or 3.
- Otherwise, job ads for faculty positions were coded as "Assistant Professor" if the position satisfied condition 1.
- Otherwise, job ads for faculty positions were coded as "Associate Professor" if the position satisfied condition 2.
- Otherwise, job ads for faculty positions were coded as "Full Professor" if the position satisfied condition 3.
- Otherwise, job ads for faculty positions were coded as "Non-specified" rank. Approximately 17 percent of job ads for faculty positions did not specify a rank.

Degrees

Job ads typically specified a required or desired degree level – doctoral, master's, bachelor's, and high school or GED. For job ads that specified multiple degree levels, the minimum degree level specified was used in coding degrees. Approximately 16 percent of job ads did not specify a degree.

Experience

Job ads often specified number of years of experience required or desired. The minimum number of years of experience specified was used in coding this variable. Approximately 69 percent of job ads did not specify years of experience.

Skills

Job ads often requested or indicated a preference for specific skills from potential applicants. One job ad may specify multiple skills. Approximately 49 percent of job ads specified at least one skill.

Categories of skills were developed by coders through text analysis. First, a frequency analysis of all words and phrases that were used to specify required or desired skills was conducted. Words and phrases that described same or similar skills were combined into one category. The analysis resulted in nine categories of skills.

The skills fell into nine categories: Analytical Skills, Communication Skills, Computer Skills, Critical Thinking and Problem Solving, Cultural Awareness, Leadership Skills, Multi-lingual Skills, Organizational Skills, and Teamwork Skills.

- Job ads were coded as "Analytical Skills" if the job description or title included keywords such as “analytic skills”, “computational methods”, “data collection and analysis”, “knowledge of research design and statistics”, and “quantitative skills”.
- Job ads were coded as "Communication Skills" if the job description or title included keywords such as “ability to communicate”, “listening skills”, “writing skills”, “presentation skills”, “professional writing”, and “negotiation ability”.
- Job ads were coded as "Computer Skills" if the job description or title included keywords such as: “ability to use personal computer”, “basic computer knowledge”, “computer programming”, “Microsoft office”, “communication technology”, and “Python”.
- Job ads were coded as "Critical Thinking/Problem Solving" if the job description or title included keywords such as “ability to think critically”, “facilitate problem solving”, “strategic decision making”, “think logically”, and “troubleshooting skills”.
- Job ads were coded as "Cultural Awareness" if the job description or title included keywords such as “ability to advance diversity”, “cross cultural skills”, “commitment to diversity”, “experience in equity and diversity”, “cultural sensitivity”, and “working with ethnically diverse populations”.

- Job ads were coded as "Leadership Skills" if the job description or title included keywords such as “administrative skills”, “demonstrated leadership”, “leadership capacity”, and “management experience”.
- Job ads were coded as “Multilingual” if the job description or title included keywords such as “bilingual fluent”, “clinical services in Spanish”, “spoken and written Arabic”, “Spanish and English proficiency”, “spoken and written Chinese”, and “sign language”.
- Job ads were coded as "Organizational Skills" if the job description or title included keywords such as “attention to detail”, “highly organized”, “multitasker”, “organizational skills”, and “time management”.
- Job ads were coded as "Teamwork Skills" if the job description or title included keywords such as “ability to collaborate”, “diplomatic”, “interpersonal ability”, “relationship building skills”, “team oriented”, and “work effectively as a team”.

Traits

Job ads occasionally specified desired personal traits for candidates. Approximately 21 percent of ads specified at least one personality trait for desired candidates. It was also possible for one job ad to specify multiple traits.

Categories of traits were developed by coders through text analysis. First, a frequency analysis of all words and phrases that were used to specify personal traits for desired candidates in job ads was conducted. Words and phrases that described same or similar traits were combined into one category. The analysis resulted in nine categories of traits.

The personality traits fell into nine categories: Adaptability, Ethical Conduct, Compassion/Empathy, Independence, Motivation, Positive Attitude, Pro-Active, Reliability, and Self-Awareness.

- Job ads were coded as "Adaptability" if the job description or title included keywords such as “ability to adapt”, “demonstrate flexibility”, “adapt to change”, “flexibility and openness”, “learning agility”, “resourcefulness”, and “versatile”.
- Job ads were coded as "Compassion/Empathy" if the job description or title included keywords such as “compassionate care”, “sensitivity and experience”, “emotional intelligence”, “empathy”, and “treats people with dignity”
- Job ads were coded as "Ethical Conduct" if the job description or title included keywords such as “ethical and professional”, “ethical behavior”, “ethical decision making”, “honesty”, “objectivity”, and “integrity”.
- Job ads were coded as "Independent" if the job description or title included keywords such as “autonomous decision making”, “be highly autonomous”, “function independently”, and “work effectively independently”.

- Job ads were coded as "Motivated" if the job description or title included keywords such as “applicants who are motivated”, “driven personality”, “highly motivated to”, “motivated team player”, “talented and motivated”, “self-starter”, and “will be driven”.
- Job ads were coded as "Positive Attitude" if the job description or title included keywords such as “applicants who are enthusiastic”, “energetic and creative”, “enthusiastic individual”, “express high energy”, and “positive attitude”.
- Job ads were coded as "Pro-Active" if the job description or title included keywords such as: “demonstrated initiative”, “desire to learn”, “excellent work ethic”, “personal responsibility”, and “takes initiative”. The categories for Motivated and Pro-Active are distinct in that “Motivated” captures requests for intrinsic motivation and a driven personality, whereas “Pro-Active” captured requests for candidates with strong work ethic who take initiative and ownership of their work and skills.
- Job ads were coded as "Reliability" if the job description or title included keywords such as “attendance and reliability”, “centeredness and maturity”, “dependably”, “meeting commitments”, and “reliable and accurate”.
- Job ads were coded as "Self-Awareness" if the job description or title included keywords such as: “act with discretion”, “demonstrate respect”, “excellent judgement tact discretion”, and “self-aware”.

Specialty

There were 15 specialties recognized by the APA Commission for the Recognition of Specialties and Proficiencies in Professional Psychology (CRSPPP) and five CRSPPP-recognized proficiencies at the time of data collection.² As CRSPPP specialties and proficiencies are only applicable to health service provider positions, analyses of specialties and proficiencies were conducted only on job ads already coded as the “Health Service Psychologist” job type. One job ad may specify multiple specialties and/or proficiencies.

The 15 recognized specialties were: Behavioral and Cognitive Psychology, Clinical Child Psychology, Clinical Health Psychology, Clinical Neuropsychology, Clinical Psychology, Counseling Psychology, Family Psychology, Forensic Psychology, Industrial-Organizational Psychology, Police and Public Safety Psychology, Professional Geropsychology, Psychoanalysis in Psychology,³ Rehabilitation Psychology, School Psychology, Sleep Psychology.

² Note: The list of recognized specialties and proficiencies was updated in 2018 to include Group Psychology and Group Psychotherapy and remove proficiencies in Psychopharmacology, Assessment and Treatment of Serious Mental Illness, and Personality Assessment. The specialties and proficiencies analyzed in this report are those that were actively recognized at the time job ads were posted.

³ Note: there were no job ads that specified this specialty.

- Job ads were coded as "Behavioral and Cognitive Psychology" if the job title included the keywords “behavioral psych-”, “cognitive psych-” OR if the title or description included keywords such as “background in cognitive psychology”, “cognitive psychologist”, and “social or cognitive psych-”.
- Job ads were coded as "Clinical Child Psychology" if the job title included keywords such as “adolescent psychology”, “child clinical psychology”, and “pediatric psychology” OR if the title or description included keywords such as “adolescent psychologist”, “fellowship in child or pediatric psychology”, and “pediatric psychology position”.
- Job ads were coded as "Clinical Health Psychology" if the job title included keywords such as “health psychology”, OR if the title or description included keywords such as: “background in health psychology”, “board certified in clinical health psychology”, “emphasis on clinical health psychology”, and “training in health psychology”.
- Job ads were coded as "Clinical Neuropsychology" if the job title included the keywords: “neuropsych”, “neuropsychologist”, “neuropsychology” OR if the title or description included keywords such as: “board certified in neuropsychology”, “experience in clinical neuropsychology”, and “training in neuropsychology”.
- Job ads were coded as "Clinical Psychology" if the job title included the keywords: “clinical psychiatry and psychology”, “clinical psych-”, OR if the title or description included keywords such as: “clinical psychologist”, “clinical psychology license”, and “PhD or PsyD in clinical psychology”.
- Job ads were coded as "Counseling Psychology" if the job title included keywords such as: “counseling psychology” OR if the title or description included keywords such as: “counseling psychologist”, “counseling psychology required”, and “PhD in clinical counseling psychology”.
- Job ads were coded as "Family Psychology" if the job title included the keywords: “family clinician”, “family forensic psych-”, “family psych-”, “family therap-” OR if the title or description included keywords such as: “family centered services”, “family therapist”, and “marriage and family therapy or”.
- Job ads were coded as "Forensic Psychology" if the job title included keywords such as: “forensic examiner”, “forensic mental health clinician”, “forensic specialist” OR if the title or description included keywords such as: “certification in forensic psychology”, “experience in the corrections or forensic settings”, “forensic psychologist”, and “position in clinical forensic psychology”.
- Job ads were coded as "Industrial-Organizational Psychology" if the job title included the keywords: “industrial”, “I/O psych-”, OR if the title or description included keywords such as: “educational psychology or industrial psychology”, “organizational psychology ability”, and “skills industrial and organizational psychology”.
- Job ads were coded as "Police and Public Safety Psychology" if the job title included the keywords: “police” OR if the title or description included keywords such as: “cross

training with police”, “health professional in a police crisis situation”, and “police and public safety psychology”.

- Job ads were coded as "Professional Geropsychology" if the job title included the keywords: “aging”, “geropsychology” OR if the title or description included keywords such as: “background in geropsychology”, “board certification eligibility in geriatrics”, “expertise in geropsychology”, and “position is available in the geropsychology”.
- Job ads were coded as "Rehabilitation Psychology" if the job title included keywords such as: “neuropsychology”, “rehab psychology”, “rehabilitation” OR if the title or description included keywords such as: “board certified in rehabilitation psychology”, “rehabilitation psychologist”, “specializes in the rehabilitation”, and “training in rehabilitation psychology”.
- Job ads were coded as "School Psychology" if the job title included the keywords: “school psych-” OR if the title or description included keywords such as: “degree in school psychology”, “educational psychologist”, “position in a school setting”, and “phd in school psychology”.
- Job ads were coded as "Sleep Psychology" if the job title included the keywords: “sleep” OR if the title or description included keywords such as: “behavioral sleep medicine”, “sleep psychologist”, and “sleep psychology”.

The five CRSPPP proficiencies were: Addiction Psychology, Assessment and Treatment of Serious Mental Illness, Personality Assessment Psychology, Psychopharmacology and Sport Psychology.

- Job ads were coded as "Addiction Psychology" if the job title or description included keywords such as: “addiction specialist”, “experience in the assessment and treatment of addiction”, “expertise in the treatment of substance abuse”, and “experience related to chemical dependency”.
- Job ads were coded as "Assessment and Treatment of Serious Mental Illness" if the job title or description included keywords such as: “experience with individuals with serious mental illness”, “working with people who have smi”⁴, and “working with serious mental illness”.
- Job ads were coded as "Personality Assessment Psychology" if the job title included keywords such as: “personality psychology” OR if the title or description included keywords such as: “experience in administering and interpreting personality and”, “skills in cognitive and personality psychology”, and “training in cognitive personality and neuro psychological assessment”.
- Job ads were coded as "Psychopharmacology" if the job title or description included keywords such as: “experience in psychopharmacology” and “knowledge of psychopharmacology”.

⁴ smi = serious mental illness

- Job ads were coded as "Sport Psychology" if the job title or description included keywords such as: “experience in sports psychology”, “experience with individual and team sport psychology”, “specialization in sport psychology”, and “sports psychologist”.

Subfield

Twenty-six subfields were used to classify job ads:

1. Behavioral Medicine,
2. Clinical Child Psychology,
3. Clinical Neuropsychology,
4. Clinical Psychology,
5. Cognitive Psychology,
6. Community Psychology,
7. Counseling Psychology,
8. Developmental Psychology,
9. Educational Psychology,
10. Engineering Psychology/Human Factors Psychology,
11. Environmental Psychology,
12. Experimental Psychology,
13. Family Psychology,
14. Forensic Psychology,
15. General Psychology/Methods and Systems,
16. Geropsychology,
17. Health Psychology,
18. Industrial-Organizational Psychology,
19. Neurosciences,
20. Personality Psychology,
21. Physiological Psychology/Psychobiology,
22. Quantitative Mathematical/Psychometrics/Statistics Psychology,
23. Rehabilitation Psychology,
24. School Psychology,
25. Social Psychology, and
26. Sport Psychology.

These subfields were historically used by APA Center for Workforce Studies to capture major fields for APA members.

The analysis was applied to faculty job types only and was designed to capture education, training, and experience in the subfield topic. One job ad may specify multiple subfields.

- Job ads were coded as "Behavioral Medicine" if the job title included the keywords: "behavioral medicine" OR if the title or description included keywords such as: "behavioral medicine experience", "behavioral medicine psychologist", "expertise in behavioral medicine", and "professor in behavioral medicine".
- Job ads were coded as "Clinical Child Psychology" if the job title included keywords such as: "adolescent psychology", "child clinical psychology", "pediatric psychology" OR if the title or description included keywords such as: "child and adolescent psychologist", "expertise in clinical child psychology", and "pediatric psychologist".
- Job ads were coded as "Clinical Neuropsychology" if the job title included the keywords: "neuropsych", "neuropsychologist", "neuropsychology" OR if the title or description included keywords such as: "board certified in clinical neuropsychology", "experience in clinical neuropsychology", and "professor in clinical neuropsychology".
- Job ads were coded as "Clinical Psychology" if the job title included keywords such as: "clinical psychiatry and psychology", "clinical psychology", OR if the title or description included keywords such as: "clinical and counseling psychology positions", "doctoral training in clinical psychology", and "professor in clinical psychology".
- Job ads were coded as "Cognitive Psychology" if the job title included keywords such as: "cognitive psychology" OR if the title or description included keywords such as: "cognitive psychology is required", "cognitive psychology position", "expertise in cognitive or", and "professor in the area of cognitive".
- Job ads were coded as "Community Psychology" if the job title included keywords such as: "community psychology" OR if the title or description included keywords such as: "community psychology experience", "community psychology social work or a related field", and "professor in community psychology".
- Job ads were coded as "Counseling Psychology" if the job title included keywords such as: "counseling psychology" OR if the title or description included keywords such as: "counseling or a closely related", "doctoral degree in counseling", "position in counseling psychology", and "counseling psychology preferred".
- Job ads were coded as "Developmental Psychology" if the job title included keywords such as: "developmental psychology" OR if the title or description included keywords such as: "background in developmental psychology", "developmental psychologist", and "professor of developmental psychology".
- Job ads were coded as "Educational Psychology" if the job title included the keywords: "educational psychologist", "education psychology" OR if the title or description included keywords such as: "EdD in educational psychology", "educational psychologist", "position educational psychology", and "professor of educational psych-".
- Job ads were coded as "Engineering Psychology/Human Factors Psychology" if the job title included the keyword: "engineering psych-" OR if the title or description included keywords such as: "emphasis in applied cognition engineering psychology", "forensic or

human factors psychology”, “human factors position”, and “position in engineering psychology”.

- Job ads were coded as "Environmental Psychology" if the job title included keywords such as: “environmental psychology” OR if the title or description included keywords such as: “environmental psychologist”, “environmental psychology or”, and “environmental psychology will be considered”.
- Job ads were coded as "Experimental Psychology" if the job title included keywords such as: “experimental psychology” OR if the title or description included keywords such as: “degree in experimental psychology or”, “experimental psychologist”, “expertise in experimental psychology”, and “professor experimental psychology”.
- Job ads were coded as "Family Psychology" if the job title included keywords such as: “family clinician”, “family forensic psychology”, “family psychology”, “family therapy” OR if the title or description included keywords such as: “child and family psychology preferred”, “doctorate degree in marriage and family therapy”, and “family therapy or related areas”.
- Job ads were coded as "Forensic Psychology" if the job title included keywords such as: “forensic eval-”, “forensic examiner”, “forensic mental health clinician” OR if the title or description included keywords such as: “appointment in the area of forensic”, “expertise in forensic psychology”, and “forensic psychologist”.
- Job ads were coded as "General Psychology/Methods and Systems" if the job title included keywords such as: “general psychology” OR if the title or description included keywords such as: “certification in general psych-”, “experience in general psychology”, and “general psychology position”.
- Job ads were coded as "Geropsychology" if the job title included the keywords: “aging”, “geropsychology” OR if the title or description included keywords such as: “expertise in geropsychology”, “geropsychologist”, “geropsychology position”, and “professor in aging and health”.
- Job ads were coded as "Health Psychology" if the job title included keywords such as: “health psychology” OR if the title or description included keywords such as: “background in health psychology”, “health psychologist”, and “professor of clinical health psychology”.
- Job ads were coded as "Industrial-Organizational Psychology" if the job title included keywords such as: “industrial”, “i/o psychology” OR if the title or description included keywords such as: “expertise in industrial organizational psychology”, “position in i/o psychology”, and “requires a PhD from an i/o psychology”.
- Job ads were coded as "Neurosciences" if the job title included the keyword such as: “neuroscience”, “neuroscientist” OR if the title or description included keywords such as: “behavioral or cognitive neuroscience”, “experience in neuroscience”, “expertise in social and affective neuroscience”, and “position is in behavioral neuroscience”.

- Job ads were coded as "Personality Psychology" if the job title included keywords such as: "personality psychology" OR if the title or description included keywords such as: "expertise in social personality psychology", "professor in social personality psychology", and "specializations such as personality".
- Job ads were coded as "Physiological Psychology/Psychobiology " if the job title included keywords such as: "biological psychology", "physiological psychology", "psychobiology" OR if the title or description included keywords such as: "biopsychology or related", "expertise in biological and cognitive psychology", "PhD in biological psychology", and "professor of psychology physiological psychology".
- Job ads were coded as "Quantitative Mathematical/Psychometrics/Statistics Psychology" if the job title included the keywords: "psychometrics", "quantitative", "statistics" OR if the title or description included keywords such as: "appointment in quantitative psychology", "background in statistics", "PhD in psychology psychometrics", and "quantitative psychologist".
- Job ads were coded as " Rehabilitation Psychology " if the job title included keywords such as: "neurorehabilitation", "rehab psychology", "rehab neuropsych" OR if the title or description included keywords such as: "PhD or EdD in rehabilitation psychology", "rehab psychologist", and "training in rehabilitation psychology".
- Job ads were coded as "School Psychology" if the job title included keywords such as: "school psychology" OR if the title or description included keywords such as: "earned doctorate in school psychology", "position in school psychology", "school psychologist", and "school psychology expertise".
- Job ads were coded as "Social Psychology" if the job title included keywords such as: "social psychology" OR if the title or description included keywords such as: "candidates in the area of social psychology", "position in social psychology", and "doctoral degree in social psychology".
- Job ads were coded as "Sport Psychology" if the job title included the keyword: "sport" OR if the title or description included keywords such as: "association of applied sport psychology", "experience in sports psychology", and "preference given to sport psychology".