What is autism

Autism, or Autism Spectrum Disorder (ASD), is a neurodevelopmental condition characterized by difficulties in social interaction, communication challenges, and repetitive behaviors. It is a spectrum disorder, meaning it varies in severity and symptoms from person to person by a wide margin. The causes of autism are not fully understood but are believed to involve a combination of genetic and environmental factors. Diagnosis involves a comprehensive evaluation, and early intervention is crucial. There are no cures for autism, but therapies and interventions can help individuals with more disabling forms of autism to lead fulfilling lives by supporting their communication, social skills, and independence. In addition to accommodating autistic individuals to society, there has been a move in recent decades to promote acceptance and inclusion for people with autism and their unique strengths and skillsets.

Why diagnosis is so challenging

Accessing appropriate resources to receive a diagnosis can present a wide variety of challenges, such as navigating the healthcare system, finding autism-specific diagnostic specialists, and advocating for individual needs. Once the requisite professionals are identified, there is generally a substantial fee followed by multiple assessments conducted by medical professionals, such as developmental pediatricians, psychologists, occupational therapists, and speech and language pathologists. The diagnostic process also involves gathering extensive information about the individual's developmental history, family history, behavioral observations, and various tests. Overall, the process of receiving a diagnosis of autism can be a complex and demanding experience for individuals and their families.

-Inform Medical Diagnosis Decision

-Inexpensive and Easily Accessible

-Support Self-Diagnosed Individuals & Adults

What we analyzed

Linear Regression

We began each Linear Regression by reading in the appropriate dataset: Full, ASQ or Unweighted ASQ. We then designated the feature variables and the target variable, Autism Diagnosis, before we compared the number of values in each target variable category. This showed that there were far more individuals without autism than those with autism (650 and 185). We then split the dataset into Training (75%) and Testing (25%) Datasets before using StandardScalar to scale the data and enable more accurate comparison.

In our Standard Analysis, we generated a linear regression model at this stage before generating the code to export the model as a pickle file. Once we have the model, in addition to testing accuracy, we also generated training and testing confusion matrixes and classification reports.

In our Resampled Analysis, we start by performing Random Over Sampling to generate an equal number of values in each of the target variable categories (467 and 467). We then repeated the export and analysis steps from the Standard Analysis.

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Outsomes

Short comings

Next steps