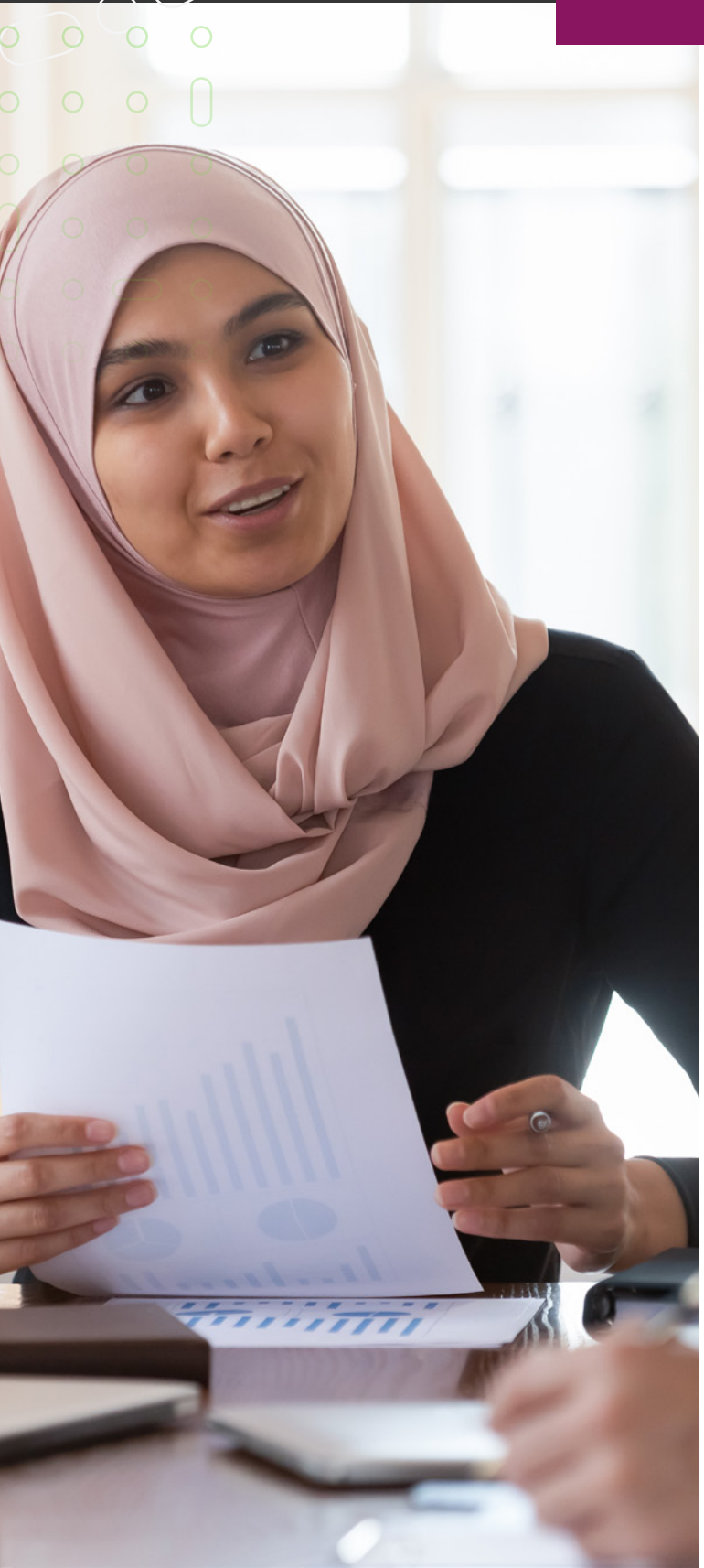
Neurodiversity Research Program

Summary of activities during 2023

Annual Report

SHL Labs



Introduction

As the global leader in HR technology and psychometric science, SHL brings trusted people insights to hiring, development, and talent mobility decisions. We are uniquely positioned to gather data to inform best practices for inclusive and accessible assessments – and provide technology to bridge the gap between science and practice.

Our exploration of neurodiversity is delivered through our research and innovation program, SHL Labs that is dedicated to advancing innovation and inclusivity in Talent Assessments, Talent Acquisition, and Talent Management.

We are committed to supporting disability inclusion and are a proud partner of Purple Tuesday and in 2019 we made a "Purple Pledge" to improve the assessment experience for candidates with hidden disabilities. This pledge was the catalyst for establishing our Neurodiversity Research Program, which aims to define evidence-based best practices for assessing neurodiverse talent.

During 2023, we continued to investigate neurodiversity through research activities and partnerships. This paper provides an update on our and progress, since the publication of our Assessing Neurodiverse Talent white paper in 2022.

A Look Back at 2023

Releasing New Resources

- Neurodiversity Collection on shl.com
- Neurodiversity Information Hub for Candidates
- Research Partners Page to expand our impact to both academic and client partners alike

Continuing Our Research

- Enhanced disclosure form
- Enhanced reactions form
- Wider range of assessments

Sharing Unique Insights

- Advancing Neurodiversity and Disability Inclusion LinkedIn Live
- Neurodiversity Celebration Week panel dicussion
- An update on SHL's Neurodiversity Research blog
- SHL Celebrates Purple Tuesday blog

Thought Leadership

- SIOP conference presentations
- SIOP Leading Edge Consortium presentation
- Two peer reviewed publications (under review)

Receiving Recognition

- Finalist in Fast Company - World Changing Ideas
- Finalist in Celebrating Neurodiversity Awards - Neurodiversity Research of the Year

Enhancing Our Products

- Creating customizable options
- Updating video interview options
- WCAG 2.1 AA standards accessibility audit

Neurodiversity in the Workplace

> The unemployment rate for neurodivergent adults is three times the rate of those with other disabilities, and eight times the rate for those who are non-disabled.[3]

Neurodiversity is an umbrella term which refers to natural variations in the way people think and process information. It is estimated that approximately 15-20% of the global population is neurodivergent.[1] Neurodivergence can include one or more of the following categories: Autism Spectrum Disorder (ASD), Dyspraxia, Dyslexia, Attention Deficit Hyperactivity Disorder (ADHD), Tourette Syndrome, Mental Health conditions such as Anxiety and Depression, Acquired Brain Injury,[2] and more.

In recent years, organizations have shown a growing interest in inclusion efforts aimed at increasing disability employment. Many large global organizations have launched Autism at Work programs, and others are partnering with neurodiversity specific recruitment agencies to recruit neurodivergent candidates. Organizations are increasingly striving to be neuro-inclusive as demonstrated by a rising interest in learning how they can best support neurodivergent candidates throughout the application process.

However, despite these inclusion efforts, this population remains underemployed. The unemployment rate for neurodivergent adults is three times the rate of those with other disabilities, and eight times the rate for those who are non-disabled.[3] Further, autistic people experience some of the highest unemployment rates compared to individuals with other disabilities.[4] Unfortunately, biases in organizations remain widespread, as shown by a recent survey of over 1,000 leaders and managers which revealed that half (50%) of respondents surveyed reported they would not employ someone who is neurodivergent due to inaccurate assumptions based on false stereotypes.[5] Understandably, candidates are often hesitant to disclose and request the accommodations they need to perform at their best, highlighting the importance of applying universal design to create assessment content and technology that are as inclusive and accessible as possible for all candidates.

There is a significant gap between research and practice to understand how we can apply universal design to make psychometric talent assessments more inclusive and accessible, enabling neurodivergent candidates to perform at their best.[6] As we move towards new technologies such as automated and Artificial Intelligence (AI) based assessments, this gap in evidence-based best practices is expected to widen even further.

[1] Doyle (2020)
[2] Weinberg & Doyle (2017)
[3] The Center for Neurodiversity & Employment Innovation, 2022
[4] The Center for Neurodiversity & Employment Innovation, 2022
[5] The Institute of Leadership & Management (2022)
[6] Doyle (2023)

2023 Research Findings

In 2023, SHL's neurodiversity research initiative achieved significant progress. Our research focuses on understanding the neurodivergent experience in the workplace in three key areas:

Performance and Reactions to Different Test Types

Disclosure Decisions

Accommodation Considerations

In the pages that follow, we provide high-level summaries of our latest research studies, along with considerations for organizations, researchers, candidates, and assessment providers.

We also share a sneak preview into what's to come in 2024 and how you can get involved.

Study 1:
Cognitive Strengths of Neurodivergent Talent

Cognitive ability tests are highly predictive of job performance and used by organizations to measure valuable skills like problem-solving and learning, and can be used to inform hiring decisions, guide professional development, and mobilize internal talent. Our early research found that cognitive ability tests are a promising option for assessing neurodivergent candidates, with small score differences between neurodivergent and neurotypical individuals, and favorable reactions to the candidate experience. In 2023, SHL's research team built on our insights for cognitive ability testing with additional cognitive ability test types in larger sample sizes.

Findings from our 2023 studies involving cognitive ability testing are summarized below.

The challenge...

There is little research about the suitability of cognitive ability tests for a range of neurodivergent conditions. In 2022, we shared preliminary insights, and in 2023 we conducted further research to replicate our findings in larger research samples and to dig deeper into a wider range of assessment types and neurotypes.

What we did...

We continued to explore how neurodivergent individuals perform on cognitive ability tests, compared to a general population sample of research participants who did not disclose any type of neurodivergence.

Previously our research focused on autism and traditional cognitive ability tests. In 2023, we expanded to include other types of neurodivergence – including ADHD, Autism Spectrum Disorder, Dyslexia, Dyspraxia, Mental Health Disorders such as Anxiety and Depression, Tourette Syndrome – and new assessment formats (Verify Interactive).

What we found...

Replicating previous findings, small average score differences across groups were found on Inductive reasoning and Numerical reasoning practice tests.

Consistent with previous findings, small to medium average score differences across groups were generally found, with neurodivergent participants scoring slightly higher on average than the general population sample.

Our preliminary findings indicate that the interactive format does not have a significant impact on performance across groups, in terms of scores achieved or time taken to complete the assessment.

So what...

Findings from this research suggest that cognitive ability tests are a promising option for assessing neurodivergent individuals. These findings are reinforced by consistently positive reactions to cognitive ability assessments discovered in our previous research.

Consistent with traditional cognitive ability test formats studied previously, the interactive format doesn't appear to have a significant impact on neurodivergent individuals' ability to perform on or complete cognitive ability assessments, suggesting that either format provides a fair and inclusive experience.

More information is needed to better understand how the introduction of more complex item formats, and more difficult items introduced through computer adaptive testing, could affect this relationship. We are currently collecting data so we can investigate how these aspects may affect neurodivergent individuals' performance.

Study 2:
Behavioral Assessment - Performance and Reactions

Going beyond cognitive ability testing, in 2023 SHL also conducted research exploring the performance and general experience of neurodivergent individuals taking **behavioral assessments**. Behavioral assessments measure job-relevant skills, such as how individuals approach tasks, interact with others, and handle challenges. These assessments provide valuable insights for making hiring decisions, informing personal development plans, and optimizing team efficiencies.

Findings from our 2023 studies involving behavioral assessments are summarized below.

The challenge...

Last year we shared some insights into the reactions of autistic research participants to the **Global Skills Assessment**, the behavioral assessment measuring all 96 skills in SHL's Universal Skills Taxonomy, the narrowest level of the **Universal Competency Framework** or UCF.

This preliminary qualitative research study we reported in 2022 was based on a small sample size with a shortened version of the assessment, measuring a reduced set of skills.

Further, we had not yet collected reactions feedback from a general population sample of participants who did not disclose any type of neurodivergence to understand how the feedback from autistic participants was similar to, or differentiated from, the experience of neurotypical participants.

What we did...

We explored performance on and reactions to the full version of the Global Skills Assessment for both autistic participants and a general population sample of participants who did not disclose any type of neurodivergence.

What we found...

On average, autistic participants tend to excel in skill areas such as working autonomously, troubleshooting technology/equipment, and critically evaluating information.

Reactions were generally consistent across the autistic and neurotypical participants.

Reactions were generally positive for autistic participants with the most favorble responses to questions about clarity and ease of understanding the content, perceived opportunity to perform, and ability to concentrate.

So what...

Results from this study reveal that reactions are generally consistent across autistic and neurotypical participants, suggesting that the assessment type is not differentially negatively impacting the assessment experience for autistic candidates.

Some findings reveal topics for further investigation, such as a slight discrepancy in perceived fairness of this assessment type, despite generally consistent reactions in other areas. More research is needed, and we will continue to investigate perceived fairness in our future research agenda.

Data collection for other neurotypes is currently in progress and will be reported when adequate sample sizes for analysis are achieved.

Study 3: **Disclosure**

Disclosing a disability when taking a **pre-employment assessment** is important for several reasons. Disclosure allows employers to provide necessary accommodations, ensuring a fair and equitable testing experience. This disclosure can also help employers understand and interpret test results accurately, taking into account any potential impact on performance.

Disclosure also fosters transparency and open communication between employer and candidate and helps in creating an inclusive and supportive workplace culture. It enables the employer to better align the candidate's skills and abilities with the job requirements and may lead to adjustments in the hiring process that allows every individual to showcase their true potential. Overall, disclosure promotes a more equitable and accessible hiring process for everyone, regardless of individual differences. However, many neurodivergent candidates are hesitant to disclose due to fear of stereotypes and discrimination.

Findings from our 2023 research on disclosure are summarized below.

The challenge...

Disclosure rates in our research studies are consistently and drastically lower than the known prevalence rates of neurodivergence in the global population. This finding in a low-stakes research setting suggests that the hesitancy to disclose and request accommodations on assessments would be exacerbated in a high-stakes hiring context.

Given that some candidates may require reasonable accommodations to perform at their best on assessments, we wanted to better understand how to support disclosure in organizations.

What we did...

We updated our disclosure form to use more positive and inclusive language, in an effort to create a psychologically safe environment where participants are more likely to feel comfortable disclosing neurodivergence.

On the participant disclosure form, we separated out disability from neurodiversity to better understand how neurodivergent individuals perceive their condition(s). We also provided a more comprehensive list of neurotypes for participants to select when disclosing.

What we found...

Making small positive and inclusive wording changes to our research disclosure form resulted in double the disclosure rate.

Over half of the people who disclosed a neurodivergent condition did not indicate it was a disability.

So what...

Organizations can implement inclusive language to create a psychologically safe environment where candidates feel comfortable disclosing and requesting accommodations in the assessment process that will support them to perform at their best.

Findings are consistent with the neurodiversity movement which takes the perspective that individual differences in the way that people think and process information should be recognized and appreciated, and only considered to be a disability due to societal obstacles that result in a lack of fit between a person and their environment.

Study 4: **Accommodations**

Accommodations are adjustments or modifications made to the testing environment or format to ensure that individuals with unique needs can demonstrate their true abilities. These accommodations are crucial to provide a fair and equitable opportunity for everyone, promoting inclusivity and allowing individuals to showcase their knowledge and skills without being hindered by limitations or barriers.

In 2023, SHL's research team set out to conduct research that would better inform current and future accommodation offerings so we can support candidates to perform at their best on our talent assessments.

Findings from our 2023 research on accommodations are summarized below.

The challenge...

In this study we aim to identify the types of accommodations that are likely to be useful to neurodivergent candidates. Understanding this feedback will help us apply universal design to our content and technology to make these features available to all candidates and remove the burden of disclosure where possible.

What we did...

As part of our research **disclosure form**, we provided participants with the opportunity to indicate what types of accommodations would be useful to allow them to perform at their best on the assessment. While we recognize that each individual will have unique needs and preferences, this analysis allowed us to identify trends in what types of accommodations would generally be most useful for each neurotype.

What we found...

The top three platform accommodations identified by neurodivergent participants were: screen reader, contrast options, and customizable features such as the ability to hide the timer or progress bar.

Other useful options suggested by both neurodivergent and neurotypical participants include: more instructions about what to expect and the opportunity to take a break between assessments.

So what...

We are using the insights about useful accommodations to help us apply universal design as we develop new assessment content and technology.

We are also using this feedback to prioritize ongoing enhancements to our platform and products.

What to Expect in 2024

Expand research studies to include more assessment types

- Situational Judgment Test (SJT)
- Biodata
- Experience scales
- Cognitive ability
- Simulation

Expand research studies to include more neurotypes

Data collection is already underway. Analysis will begin once large enough sample sizes are available.

Implement enhanced accessibility options and collect reactions; continue to refine and implement options based on feedback

Thought Leadership

- SIOP 2024 (April 2024): "Diverse Minds, Inclusive Measures: Assessment Considerations for Neurodivergent Success"
- SIOP 2024 (April 2024): "Equitable Design in Assessment"
- SIOP 2024 (April 2024): "Incorporating Inclusion in Research: Innovative Practices from the Field"
- SIOP 2024 (April 2024): "Beyond the Buzzwords: Neurodiversity Inclusion and Better Work for All"
- SIOP 2024 (April 2024): "A Scientist-practitioner Approach to Improving Experiences of Neurodiverse Candidates"
- Minneapolis Professionals for Psychology Applied to Work (MPPAW, March 2024): "Neurodiversity Considerations for Selection and Assessment"

Recruit client partners to help us collect data in organizations

SHL's Inclusive Assessment Research Program is Expanding

We are also excited to announce that out of our commitment to inclusive assessment we have expanded our research program to include:

- Disability Research Program: The ultimate goal of this research program is to provide a seamless experience for the candidate to reduce the burden of disclosure, by implementing self-service accessible features to facilitate accommodations in the assessment process. Research studies will include developing more accessible versions of cognitive ability test items and examining both performance and reactions on various cognitive and personality tests for deaf candidates.
- Black Heritage Research Program: We kicked off this research program through formalizing a partnership with BYP Network. Initial research studies include completing a comprehensive item level analysis of our cognitive content to identify biased items, and planning for a qualitative reactions research study. Going into 2024 we will continue our research on how practice tests can reduce group differences and conduct interviews to understand how candidates react to the assessment content and the overall candidate experience.

How You Can Get Involved

Candidates

- Visit our **Neurodiversity Information Hub** for more resources that will help you succeed
- **Share your feedback** with our research team

Organizations

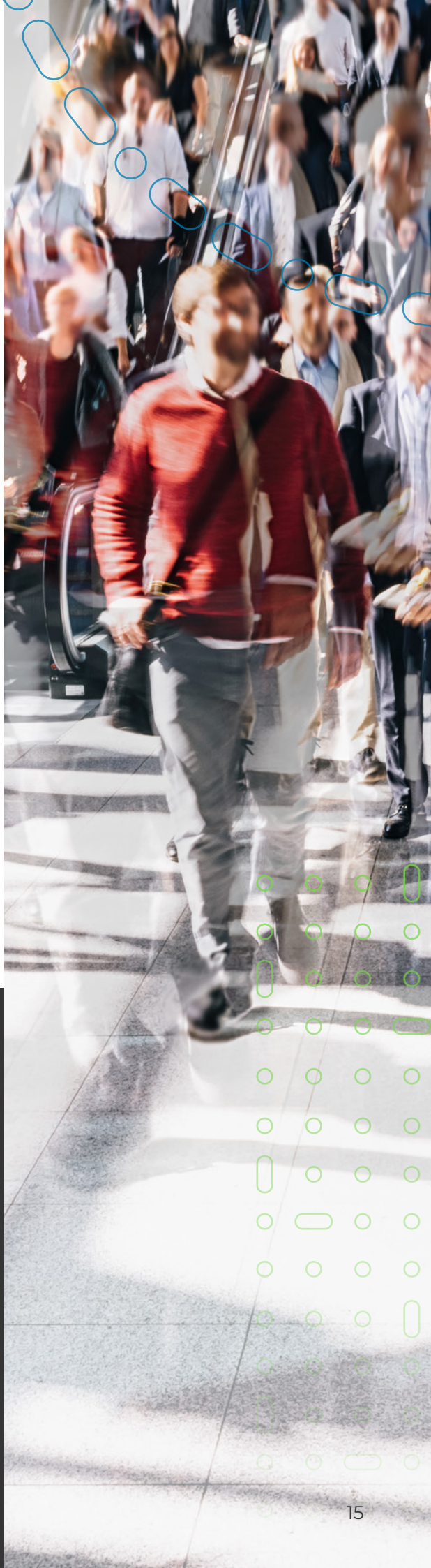
- Allow candidates to **practice assessments** to get a better understanding about what to expect and what types of accommodations may be required to perform at their best.
- Use inclusive language to encourage disclosure
- Offer candidates examples of possible accommodations and take an individualized approach to supporting candidates
- Become an **SHL research partner**

Assessment Developers

- Partner with organizations to collect the data needed to inform best-practices for assessing neurodiverse talent
- Leverage existing research to make changes to assessment content and technology to provide a more fair and inclusive experience for the neurodivergent talent pool
- Strive towards universal design when developing new products

Researchers

- Get involved in this research to bridge the gap between **science and practice**
- Include researchers with lived experience in your research team to embed the perspective of the neurodivergent community in all aspects of the research



SHL brings powerful and transparent AI technology, data science, and objectivity to help companies attract, develop, and grow the workforce they need to succeed in the digital era.

We empower talent strategies to unlock the full potential of your greatest asset—people.

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