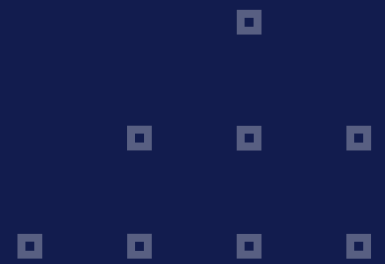# ADP | Research
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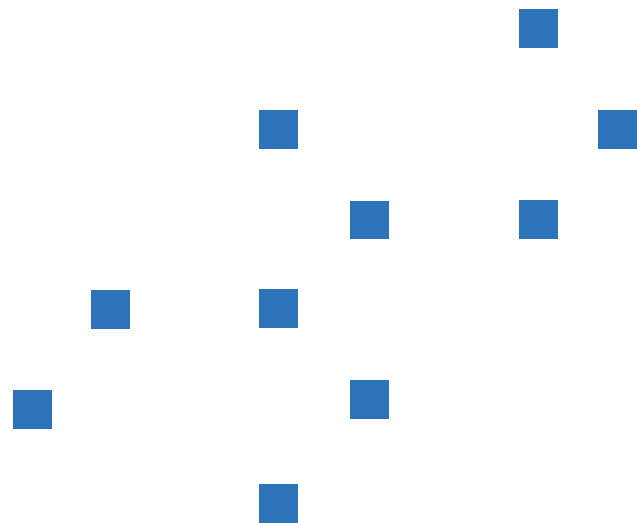
Measuring the "I" in DE&I

Full Research Report

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Measuring the "I" in DE&I

1

Introduction and Background

Some would say that the Diversity work within organizations began during the Civil Rights era of the 1960s with greater focus on the legal ramifications of discrimination in the workplace (Paskoff, 1996; Dobbins, Kim, & Kalev, 2011). Today, Diversity, Equity, and Inclusion (DE&I) has grown to include more than just race or ethnicity (e.g., gender, age, nationality, disability, sexual orientation, and religion). While the term "DE&I" may not yet be universal, the problems and topics associated with it are, and the movement for change and social justice is a global imperative.

During the 70s and 80s, organizations in the U.S. began to recognize Diversity as a necessary condition for a productive and healthy organization. The late 1980s brought about a shift in thinking when many of the HR-driven Diversity programs moved past just the legal aspect of Diversity into something more (Hays-Thomas & Bendick, 2013). Diversity – the representation of different genders, races, ages and sexual orientations across all parts of the organization – was now combined with Equity – the application of fair and equal treatment – and Inclusion – one aspect of which is the feeling of being seen, heard, and valued – to create a more complete and holistic focus for all organizations.

Eight years ago, Hays-Thomas and Bendick speculated that at least half of all organizations had some sort of Diversity, Equity, and Inclusion initiative underway (2013). This number has certainly grown to be nearer to 80-90% given the recent history within the United States (Sherbin & Rashid, 2017). With the creation of Chief Diversity Officers (CDO), an executive-level position, organizations have brought increased focus, investment, and accountability to these DE&I initiatives. In 2017, it was estimated that across the S&P 500 companies about 47% have a position of CDO (Russell Reynolds Associates, 2018). This position continues to develop and grow. In April 2021, the United States created the State Department's first CDO, naming Gina Abercrombie-Winstanley to the position (United States Department of State, 2021). Many in these roles are the first executive-level position with organizations to deal exclusively with DE&I initiatives.

Primarily because of their relative ease of measurement, increasing Diversity and Equity has been the primary focus for CDO's. Organizations can measure Diversity by quantifying how much representation of different groups they have in their organization. Likewise, organizations can easily assess if they are paying all people fairly and thus reliably measure their Equity efforts.

Researchers have then spent considerable energy trying to demonstrate the return on investment on increasing Diversity and Equity. Starting at the turn of the millenium, researchers used different models to measure how a diverse and more equitable organization generated better outcomes (Allen, Dawson, Wheatley & White, 2008; Dobbin & Jung, 2011; Hunt, Layton, & Prince, 2015). The models were borrowed from different fields of study (e.g., econometrics) to quantify the return on investment (ROI) of a diverse and equitable workplace.

As awareness and focus on externally measurable indicators of Diversity and Equity grew, so did popular concerns about the distinction between "cosmetic diversity" where members of underrepresented groups would be brought in for the optics but have a lived experience of being viewed as "token hires with no real voice" (Ford & Patterson, 2019). Insofar as they have grappled with it at all, Inclusion became the focus of theory researchers. For example, Davidson and Ferdman began in the late 1990s with the plea for the outcome of these efforts to be "building a broad-scoped, inclusive, and just organization in which trust and respect are the default options for all members of the community" (p. 38, 2001).

What has been missing, however, is a reliable, methodologically sound method for measuring employees' sentiment of feeling seen, heard, and valued at work. It is possible that employee sentiment is entirely captured by organizations' measures of Diversity and Equity. What is far more likely, though, is that employees' feelings of Inclusion exist independent of countable measures of Diversity and Equity. Thus, one can envision a workplace in which Diversity and Equity measures are high, and yet employees do not feel seen, heard, and valued. Likewise, one can also envision an organization in which employees have positive sentiment of being included at work, and yet the Diversity and Equity scores have yet to catch up to this sentiment.

One can also envision a causal relationship between these three essential elements of a healthy workplace. It is perhaps so that employees' feelings of Inclusion are a necessary precursor and driver of sustained Diversity and Equity measures. Or, flipping the causal arrow around, one can imagine a scenario in which increased Diversity and Equity gradually accrues to greater feelings of Inclusion.

Unfortunately, none of these theories can be tested, and so no programs and prescriptions can be pressure tested for effectiveness, until we have a reliable way to measure each employee's sentiment as it relates to Inclusion.

> **Since no such metric currently exists, the ADP Research Institute set out to construct one.**

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Intent and Methodology

Intent

The intent of this study was to design a reliable instrument with which to measure people's feelings of being seen, heard, and valued.

Without a reliable way to measure these items in the moment and over time, we do not know if society at large is getting better or worse in this area, nor do we know which programs and prescriptions lead to greater levels of Inclusion at work.

Methodology

Over the course of four months, we conducted forty open-ended qualitative interviews and several focus groups and used the findings to identify 349 possible items with which to measure Connection. After hours of discussion around the hypothesized model, we condensed to 70 items to be tested. We then fielded these items to U.S. samples to pinpoint the most powerful ones, testing and retesting them across 12,523 respondents until we discovered the 12 items that showed variance, had characteristics of validity, and yielded reliable data.

These 12 items, described in section 3, measure a stable psychological construct which we came to call Connection. Connection is one's feeling of being seen, heard, and valued at work for one's whole person. Connection is an important aspect of Inclusion – other aspects include feeling Engaged and Resilient at work, both of which can be reliably measured using a different set of items.

Connection is a powerfully healthy psychological sentiment. First, because Connection is an abundant sentiment – as distinct from a sense of Belonging, a sense of Connection does not imply an outgroup. Belonging exists as a concept only if there are other people who do not belong. For ten people to feel like they belong implies that there must be many, many others who do not belong – otherwise the term 'I belong' has no meaning. Likewise, the more people who say they belong to the same entity, the less value is associated with each person's sense of belonging – in this sense, Belonging is a scarce resource. By contrast, if ten people feel strongly connected to one another and to their workplace, by creating ten thousand more people who feel strongly connected, we have not diminished the value of any one person's feeling of Connection.

Second, whereas Belonging implies homogeneity – 'What do we all share?' – a feeling of Connection implies heterogeneity. As every effective team leader knows, the best way to build a highly connected, high-performing team is to pinpoint the unique contributions and capabilities of each individual team member. Indeed, it is only by seeing and valuing the idiosyncrasy of each person that one can figure out how to connect – through complementary partnerships, mutual reliance, empathy, and admiration – all team members to one another.

In the next section, and in more detail in the appendix, we will describe the 12 items which emerged from our research, the three aspects of Connection which they measure, the benchmarks for how we are currently doing in terms of Connection in the U.S. working population, and which characteristics – such as gender, race, age, company size, tenure, and level – are most closely related to employees feeling of Connection.

Our hope is that this metric can be used by all organizations, and by the U.S. economy at large, to pinpoint where we are currently in terms of the 'I' in DE&I, and to guide us to what prescriptions and programs are most effective in helping us all do better.

Research Team

For this study, we assembled a cross-functional team that brought together the practitioner, strengths coach, and economic trends and implications points of view. This research was informed by the lived experiences shared through the qualitative interviews conducted by our primary qualitative researchers.

Nela Richardson, Ph.D.,
Head of Labor
Market Research

Marcus Buckingham,
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Senior Researcher for
Psychometric Methods

3

The Model

What Is Connection

In our measurement of Connection, we found that it is comprised of three distinct aspects: **feeling seen, feeling heard, and feeling valued.**

Connection is the feeling that you are seen and valued for your uniqueness.

You feel safe to present yourself authentically and to voice your thoughts and opinions.

You are confident that you will be given a fair shot at succeeding, and that you will be assessed only on your actual contribution to the organization.

Seen

The first factor, **Seen**, is defined as such:

In the present, you see yourself as connected to others in your organization. You can see how others like you are able to grow and thrive, and so see yourself as having the chance to take similar paths.

It is measured by these items:

1. *I never have feelings of being an outsider on my team.*

2. *I see myself represented in the leadership of my organization.*

3. *I believe my company promotes people based on the work they do, not what they look like.*

4. *I never feel invisible at work.*

Do the employees feel as though they are seen? When they look around the organization, do they see others like them? The idea of seeing and of being seen clearly resonated with interview participants and emerged in the data.

Heard

The second factor, **Heard**, is defined as *feeling like your opinion counts, even when it conflicts with the consensus. Should disagreements occur, you feel safe sharing your views and debating their worth.*

It is measured by these four items:

> **5.** *I feel safe having spirited debates with my manager.*
>
> **6.** *I can speak freely without fear of retribution.*
>
> **7.** *When I share my opinion, I feel heard.*
>
> **8.** *I can let my guard down with my team.*

All of these aspects are essential to Connection. The employee must know that their voice matters, and that they can speak up without retribution.

Valued

The third and final factor, **Valued**, is defined as *knowing your worth comes from all that you authentically are. You feel able to share this authentic self with colleagues without having to censor yourself.*

It is measured by these four items:

> **9.** *I believe I must work twice as hard to earn the same respect as my peers.*
>
> **10.** *I constantly censor my views to fit in at work.*
>
> **11.** *I switch my language to make others feel comfortable.*
>
> **12.** *I have to work hard to avoid being stereotyped at work.*

Feeling valued means an employee doesn't feel the need to code-switch – for example, when a person of color feels obligated to alternate how they speak or act with colleagues. (For more information about code switching see the following examples: Boulton, 2016: Nilep, 2006; Sipahutar, 2006). When an employee feels valued for who they are, they don't feel as though they must wear a mask or perform linguistic gymnastics to fit in.
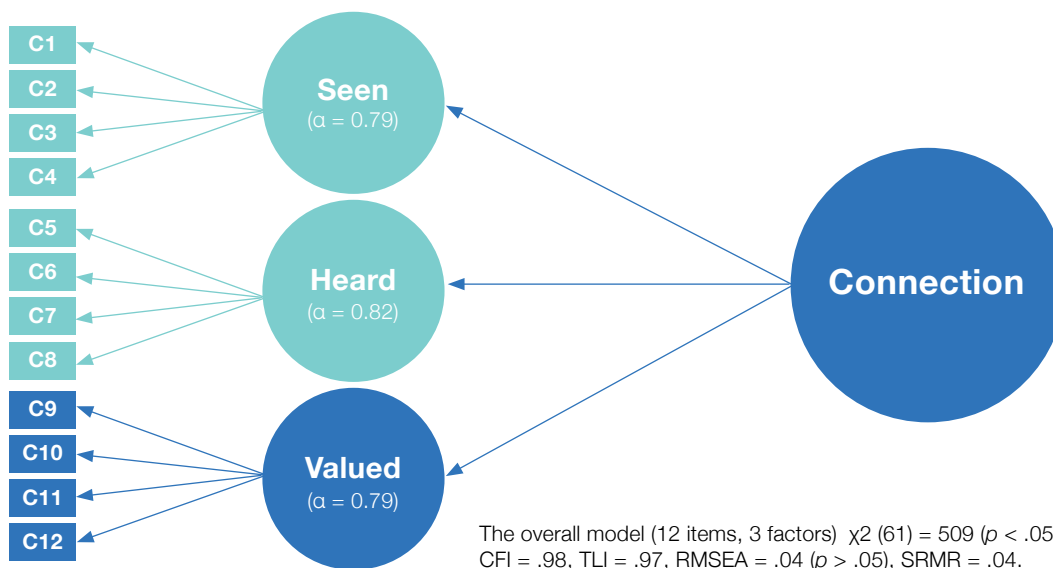
Note: These four Valued items are all negatively coded, meaning the ideal answer to each is "strongly disagree." Negatively coded items can be taxing to the respondent because they add an additional level of cognitive burden, especially when presented alongside positively coded items. The cognitive process for responding to survey items is a psychological process that the respondent goes through in a split second. (For more information see Tourangeau, Rips and Rasinski, "The Psychology of Survey Response" 2000).

The ADPRI research team typically tries to stay away from negatively coded items because they can lead to participants having negative feelings during and after the survey (if you've ever taken a survey on burnout and left feeling burnt out – you'll understand this sentiment). With negatively coded items, if we are not careful, we can end up changing the participant's mood for the worse. Unfortunately, the concepts represented in these items are difficult, if not impossible, to capture using only positively coded statements. During our different phases of development, we tested positive and negative versions of these and found that these few negatively coded items provided the most information and added the most unique meaning to this instrument, and so were left in as-is.

Taken together, we found this model to be valid and effective for measuring one's feeling of Connection. While we originally had a more complicated model to be tested, the math led us to this simple three-factor structure to measure Connection. Each of the three factors plays an important role in how connected employees feel within their organization. Within the factors, each item has a distinct loading that both provides statistical variance – so-called Construct Validity – and tells a story – Content Validity. Together, the twelve items that comprise this metric, which we are calling the **ConnectionXPS (Connection XPerience Score)**, provide useful information that can be leveraged to bring about real change in the DE&I space.

Connection Model


```
C1 ─┐
C2 ─┤
C3 ─┤── Seen
C4 ─┘   (α = 0.79)

C5 ─┐
C6 ─┤── Heard
C7 ─┤   (α = 0.82)
C8 ─┘

C9 ──┐
C10 ─┤── Valued
C11 ─┤   (α = 0.79)
C12 ─┘
```

Connection

The overall model (12 items, 3 factors) $\chi 2$ (61) = 509 ($p < .05$), CFI = .98, TLI = .97, RMSEA = .04 ($p > .05$), SRMR = .04.

When combined, here is the full **ConnectionXPS (Connection XPerience Score)** metric:

The ConnectionXPS Metric

Seen

1. *I never have feelings of being an outsider on my team.*
2. *I see myself represented in the leadership of my organization.*
3. *I believe my company promotes people based on the work they do, not what they look like.*
4. *I never feel invisible at work.*

Heard

5. *I feel safe having spirited debates with my manager.*
6. *I can speak freely without fear of retribution.*
7. *When I share my opinion, I feel heard.*
8. *I can let my guard down with my team.*

Valued

9. *I believe I must work twice as hard to earn the same respect as my peers.*
10. *I constantly censor my views to fit in at work.*
11. *I switch my language to make others feel comfortable.*
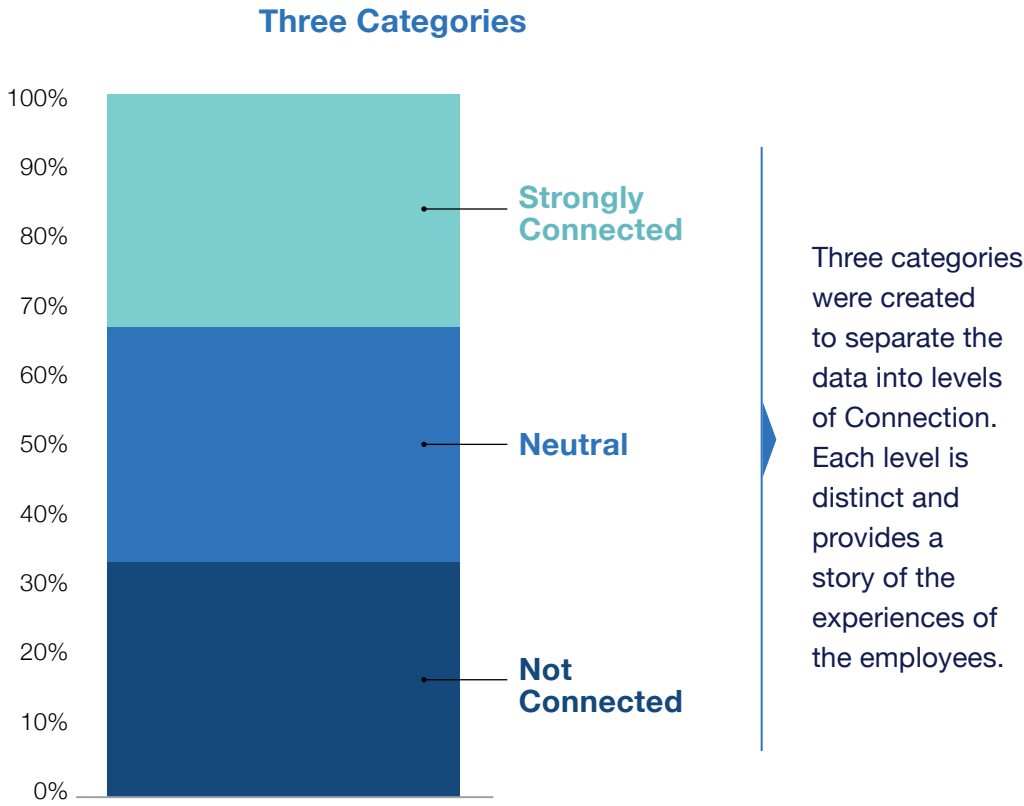12. *I have to work hard to avoid being stereotyped at work.*

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Categories and Benchmarks

The twelve items are combined into a weighted algorithm that differentiates levels of Connection. Participants who complete the ConnectionXPS items can be put into one of three categories: Strongly Connected, Neutral, and Not Connected. Each level is distinct and tells a unique story of the experiences of the employee.

We examined different exterior criterion to understand what makes each category distinct from the next. Concurrent validity (a form of criterion validity) was established using the Engagement Pulse, Workplace Resilience Scale, various levels-of-trust items and items regarding a sense of belonging, being accepted at work, feeling part of the organization, and having my voice matter.

It is important to note that being categorized as Not Connected does not mean an employee is disconnected. It simply means that the employee did not answer the 12 items positively and therefore all we can say for certain about them is that they are Not Connected. Investigating the condition of *disconnection* will need to be the focus of a separate pathologically focused research effort.

Three Categories

Strongly Connected

Neutral

Not Connected

Three categories were created to separate the data into levels of Connection. Each level is distinct and provides a story of the experiences of the employees.

What does it mean to be Strongly Connected?

How people answer the ConnectionXPS metric items has a strong relationship to these simple outcome measures. For example:

> Those who are Strongly Connected are 14x more likely than those who are Not Connected to believe that their voice matters at work.
>
> Those who are Strongly Connected are 15x more likely than the Not Connected group to feel like they are an important part of the company.
>
> Those who are Strongly Connected are 19x more likely than the Not Connected group to feel like they belong at work.
>
> Those who are Strongly Connected are 28x more likely than the Not Connected group to feel completely accepted at work.

What does it mean to be Neutral?

Respondents categorized as "Neutral" do not respond strongly enough to these simple outcome measures to say they are "Strongly Connected". For example:

> Only 18% of the Neutral group feel their voice matters.
>
> Only 18% of the Neutral group feel like an important part of the company.
>
> Only 19% of the Neutral group feel like they belong in their workplace.
>
> Only 21% of the Neutral group feel like they are completely accepted at work.

What does it mean to be Not Connected?

Respondents categorized as "Not Connected" respond very differently to positive emotional outcomes when compared to the Strongly Connected and Neutral groups. Only a handful of the respondents in this category can endorse the feelings of having their voice heard, having a sense of belonging to their company, or being completely accepted at work.

> Only 5% of the Not Connected group feel their voice matters.
>
> Only 4% of the Not Connected group feel like an important part of the company.
>
> Only 4% of the Not Connected group feel like they belong in their workplace.
>
> Only 3% of the Not Connected group feel like they are completely accepted at work.

Baseline of the U.S. working population

Based on the 2021 stratified random sample of working adults in the U.S., this is the current baseline for the United States:

Baseline

21%	Strongly Connected
68%	Neutral
11%	Not Connected
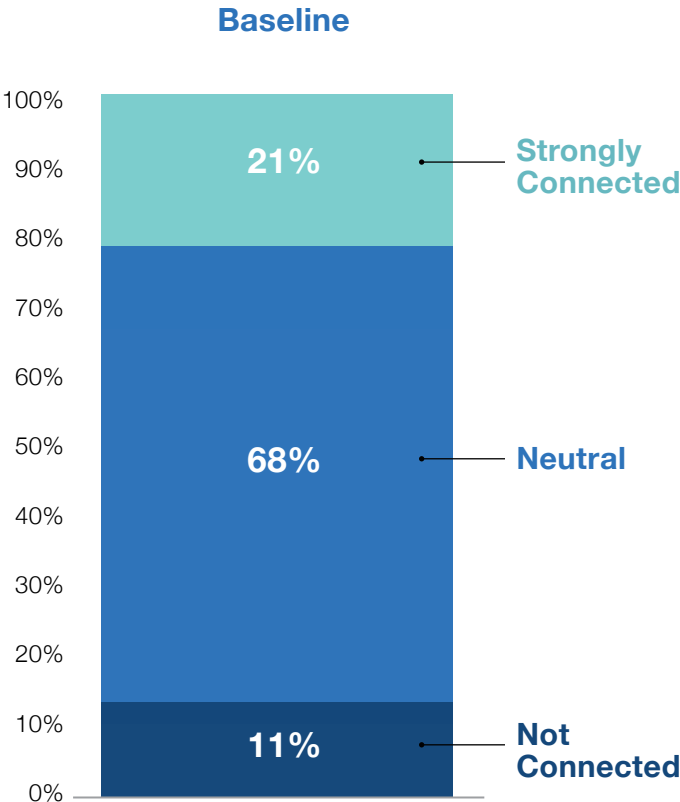
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What Relates
to Connection

1 Connection and Engagement

Because of ADP Research Institute's previous and extensive research into Engagement [(which you can review here)](#), we examined the relationship between ConnectionXPS and Engagement Pulse and found a significant correlation ($r = .61$), helping us understand that these psychological constructs are related, yet distinct. Just over 36% of the variance in Engagement can be explained by the employee's level of Connection and vice versa. Even though these constructs are highly related to each other, there is also unique information being offered by each. While feeling Not Engaged at work inhibits one's ability to feel Connected, it is clear that an employee can feel Strongly Connected but Not Engaged, and Fully Engaged but not Strongly Connected. These psychological constructs thus need to be addressed independently.

Not Connected	Neutral	Strongly Connected
1%	14%	33%
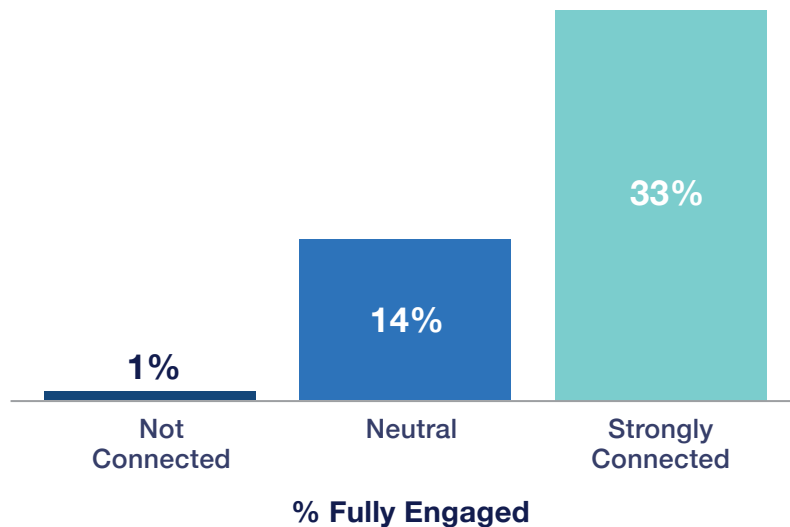
% Fully Engaged

Those who are **Strongly Connected** are **75X more likely** to be Fully Engaged at work compared to **Not Connected**. **Strongly Connected** are **3X more likely** to be Fully Engaged compared to **Neutral**.

② Connection and Resilience

We also know from our research into Resilience that 16% of an employee's Resilience can be explained by their level of Connection. You can read more about our Workplace Resilience Scale here.
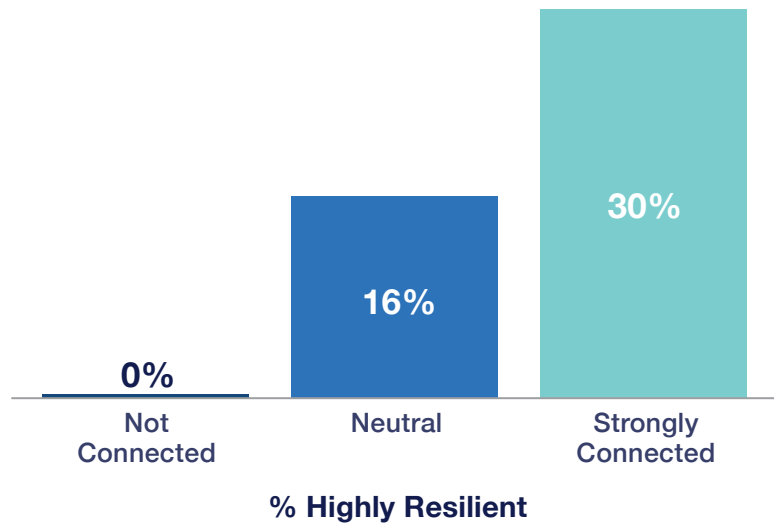
% Highly Resilient

Those who are **Strongly Connected** are **191x more likely** to be Highly Resilient at work compared to **Not Connected**.

In addition, **Strongly Connected** are **2x more likely** to be Highly Resilient than those **Neutral**.

As with Engagement, our research strongly suggests that though it is far easier to feel Resilient when one also feels Strongly Connected at work, these two psychological constructs exist independent of one another. Merely taking action to increase Resilience will not necessarily net an organization an increase in Connection.

3 Connection and Pay Equity

Another piece of evidence for the validity of Connection deals with the feeling of being paid fairly for the work one does. We would expect that Connection is strongest when individuals feel their pay is equitable. The data provided support for our hypothesis.

My pay is fair for the work I do.

Yes: Strongly Connected 24%, Neutral 67%, Not Connected 9%
No: Strongly Connected 12%, Neutral 69%, Not Connected 19%

■ Strongly Connected　■ Neutral　■ Not Connected
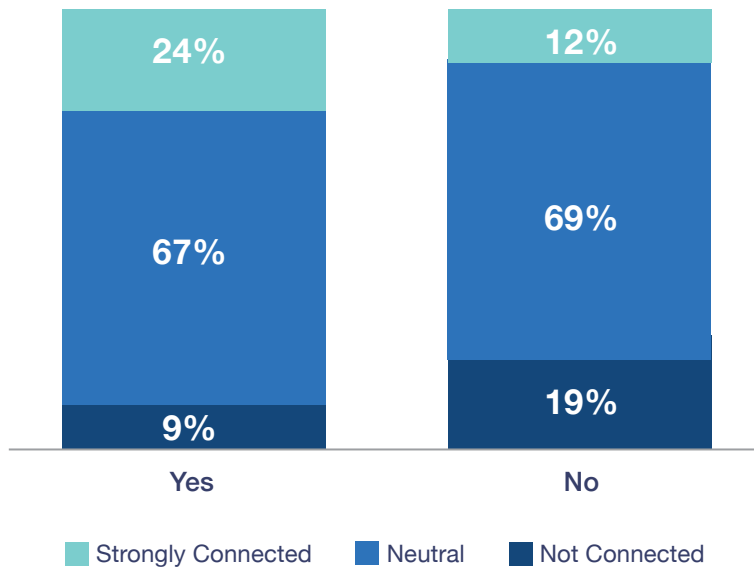
Those who believe they are paid fairly are **2x more likely** to be **Strongly Connected**.

Those who do not believe their pay is fair are **3x more likely** to be **Not Connected**.
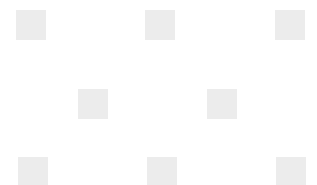
④ Connection and Discrimination

We also collected information about employees' experiences with discrimination at work. Within organizations, it is harder to understand this relationship because of possible satisficing or unwillingness to call out discrimination for fear of repercussions. As such, the general population sample collected for this research is an excellent opportunity to delve into this topic. We hypothesized that there would be an inverse correlation between Connection and discrimination. Not surprisingly, Connection and workplace discrimination are negatively related – as Connection went up, the incidence of responding affirmatively that one was experiencing discrimination at work went down.

Are you currently experiencing discrimination in the workplace?
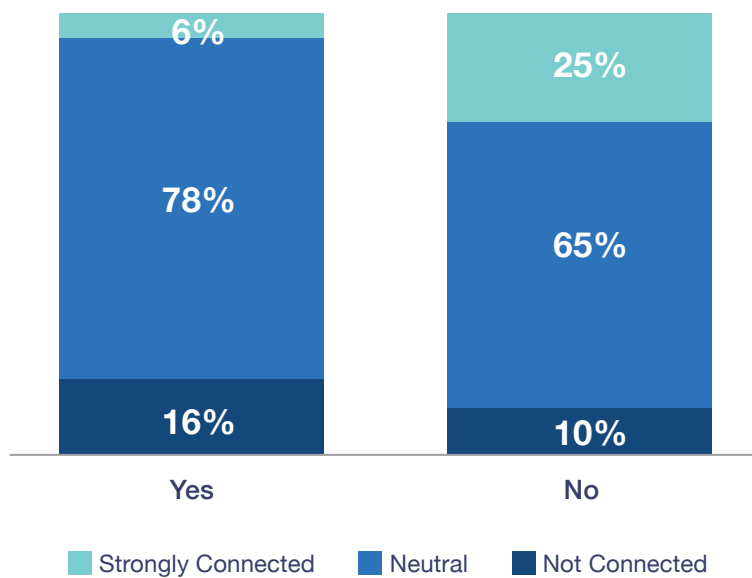

Those who are experiencing discrimination are **5X less likely** to be **Strongly Connected**, and **2X more likely** to be **Not Connected**.

It is interesting to note that 78% of people who feel they are being discriminated against are still in the "Neutral" category of the ConnectionXPS. This strongly suggests that, as we have seen in previous research, one should not lump 4's/Agrees and 5's/Strongly Agrees together into a 'top two box' or 'percent favorable' category. Instead, the data show that when it comes to predicting real world behaviors such as whether one is being discriminated against at work, 4's are more like 3's than 5's. If we are to create workplaces in which employees feel free of discrimination, we must not be satisfied with 4's. Instead it is only when employees feel they can say Strongly Agree to these items that we know something meaningfully positive has happened in their work environment.

⑤ Connection and Intent to Leave

For those who need a business case to support their DE&I efforts, the data show that if employees feel Strongly Connected, they are far less likely to want to leave their current organization.

	Actively Interviewing	No Intent to Leave
Strongly Connected	8%	38%
Neutral	73%	57%
Not Connected	19%	5%
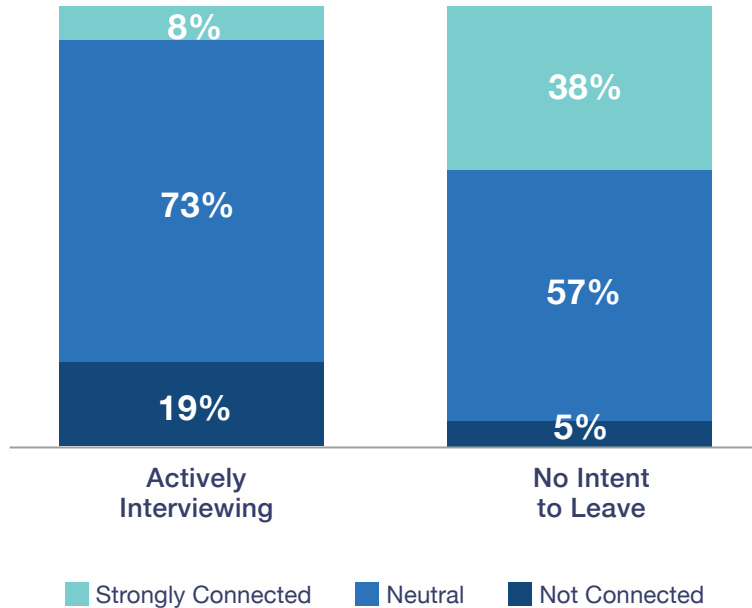
Those who are actively interviewing for a job are **4X more likely** to be **Not Connected**.

Those who have no intent to leave are **7X more likely** to be **Strongly Connected**.
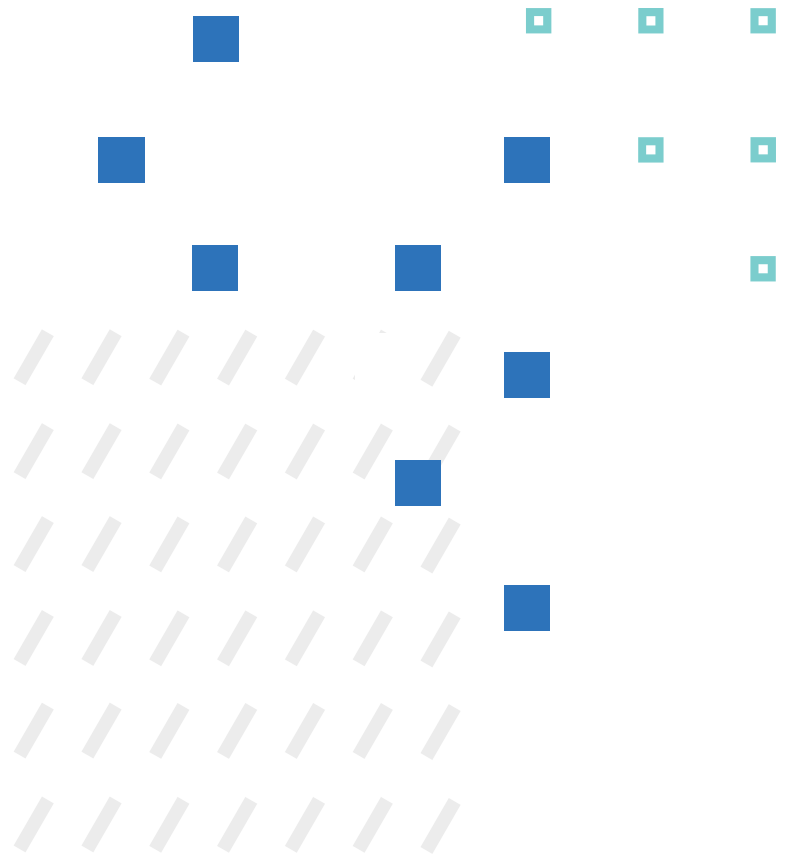
6

Characteristics that *Do Not* Relate to Connection

Examining the ConnectionXPS across different characteristics is also an important part of the research.

1 Gender

Our hypothesis was that we would indeed find a relationship between gender and Connection, with our assumption being that women would feel less able to answer the 12 items strongly positively. This did not prove to be the case for the four large samples in our study. Obviously, this does not imply that certain workplaces do not create very different feelings amongst men and women; merely that across society at large, these differences do not yet occur at a prevalence which can be picked up by the ConnectionXPS metric.

Male	Female
21%	21%
69%	67%
10%	12%

Being a certain gender **does not increase the likelihood** of being in any category.

Comparison of Gender

*"Non-binary" and "Prefer not to answer" samples were too small to report.

■ Strongly Connected ■ Neutral ■ Not Connected

2 Education

Should education matter? Are the concepts of Connection related to levels of education? What we found was that there is no difference by level of education. Regardless of their education level, respondents have the same likelihood for each level of Connection.

Connection by Education

■ Strongly Connected   ■ Neutral   ■ Not Connected

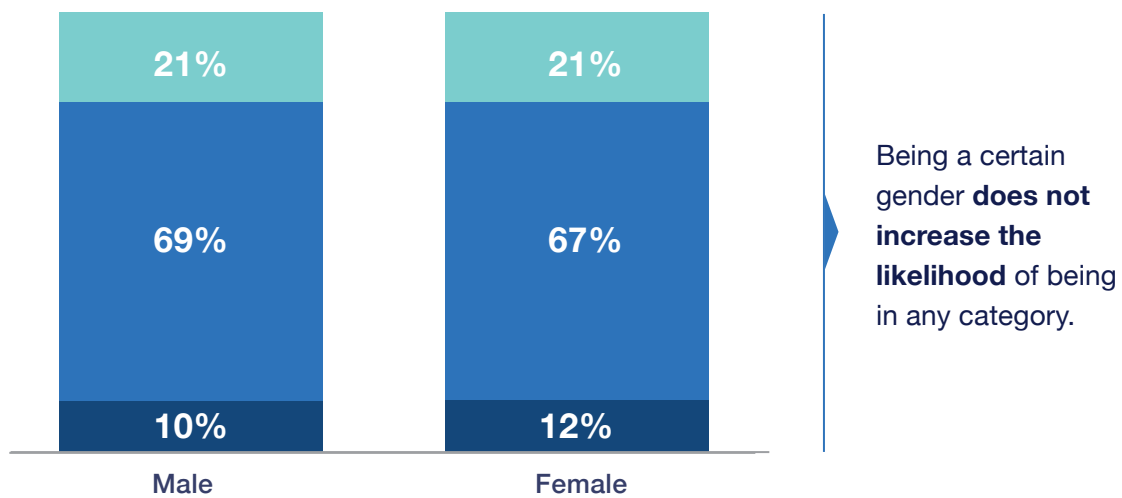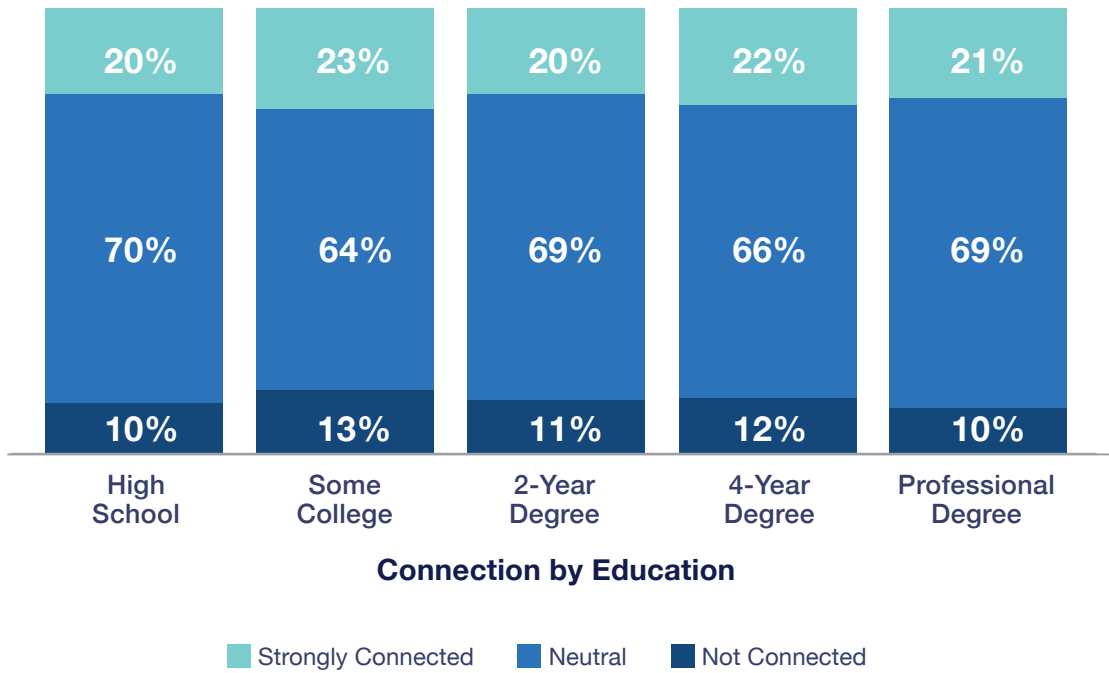Level of education **does not directly affect** the level of Connection.
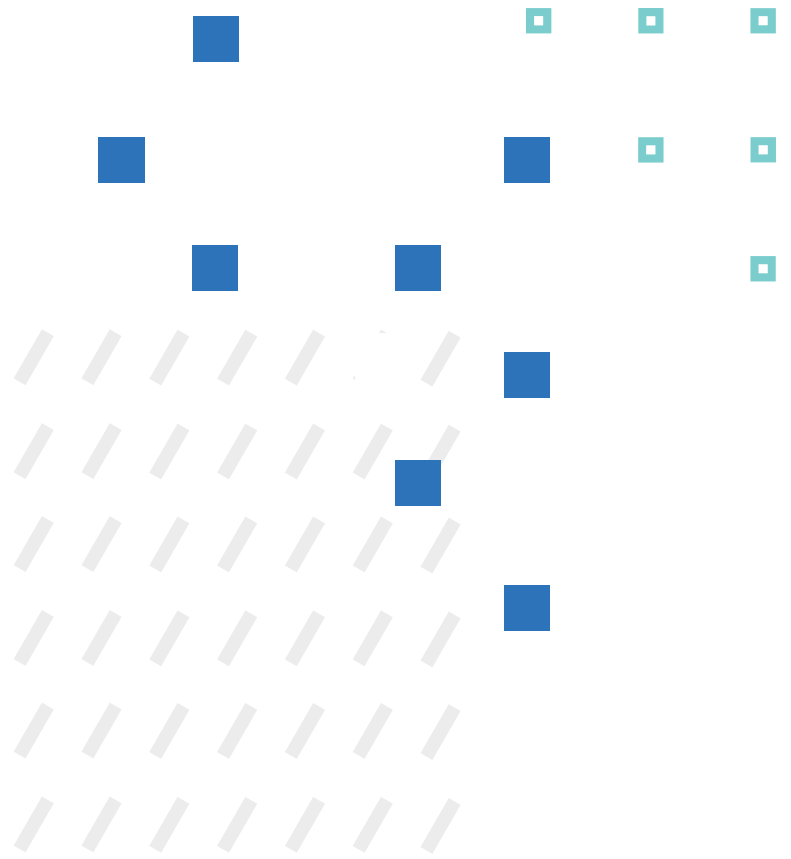
7

Characteristics that *Do* Relate to Connection

Examining the ConnectionXPS across different characteristics is also an important part of the research.

1 Age

Age matters. Through the research, we learned that age matters but can be seen as an interaction with tenure. The longer an individual stays with an organization, the more connected they feel. As one stays – one also ages.

Under 40	Over 40
18%	27%
71%	60%
11%	13%

Comparison of Age

■ Strongly Connected ■ Neutral ■ Not Connected

Those who are over 40 are **2x more likely** to be **Strongly Connected** to their organization. (This might be an interaction with tenure.)
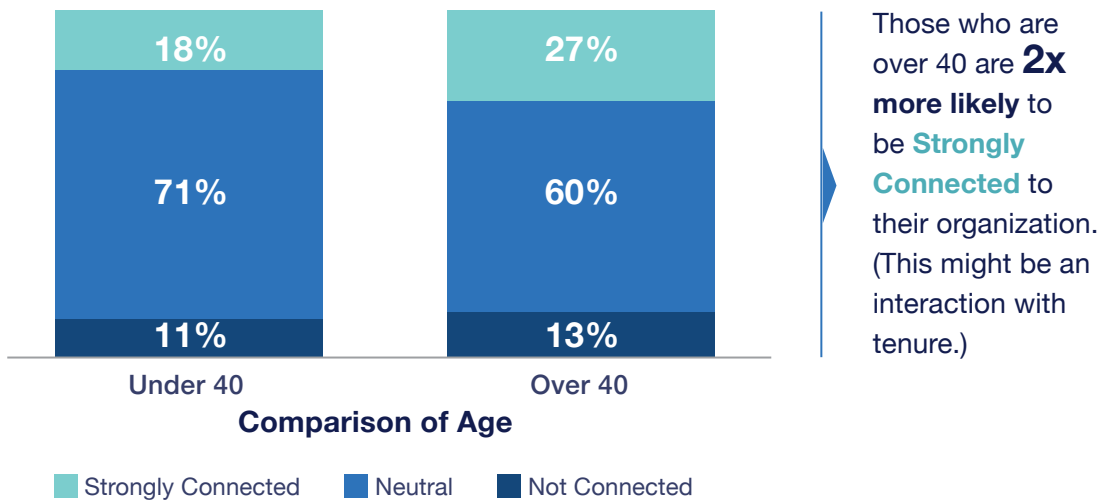
2 LGBTQ+

As part of this research with the random stratified sample, we were able to ask questions that organizations cannot ask. We were interested in the feeling of Connection and being a member of the LGBTQ+ community.

Yes	No
14%	23%
73%	66%
13%	11%

Comparison of LGBTQ+

■ Strongly Connected ■ Neutral ■ Not Connected

Those who do not identify as LGBTQ+ are **2x more likely** to be **Strongly Connected** compared to those who do.
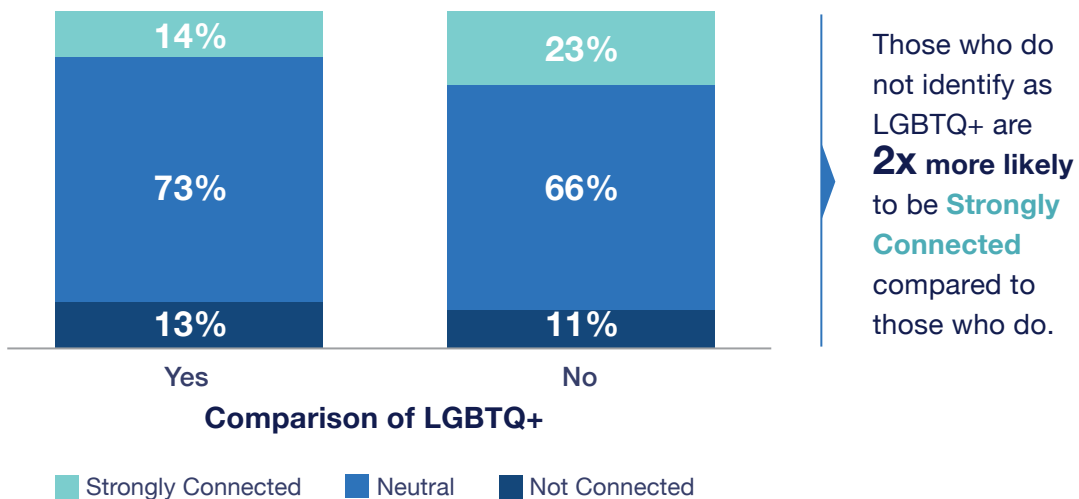
3 Race

Black/Indigenous/People of Color are 2x less likely to be Strongly Connected compared to White/Caucasian people. We had expected this finding going into the research. The data both confirmed it and scoped the current state of the world of work, as seen through the lens of race. Simply put, if you self-identify as Caucasian you are twice as likely to find yourself in the Strongly Connected category.

These data define both the current baseline of where we stand in terms of different races experiencing very different feelings at work, and the size of the presenting problem which healthy organizations need to address.

Over time, it will be important for organizations – and the broader U.S. workplace – to track whether the increased commitment to DE&I initiatives is indeed shrinking the gap between these dramatically different experiences by race.

White / Caucasian	BIPOC (Black, Indigenous, People of Color)
25%	14%
64%	74%
11%	12%

■ Strongly Connected   ■ Neutral   ■ Not Connected
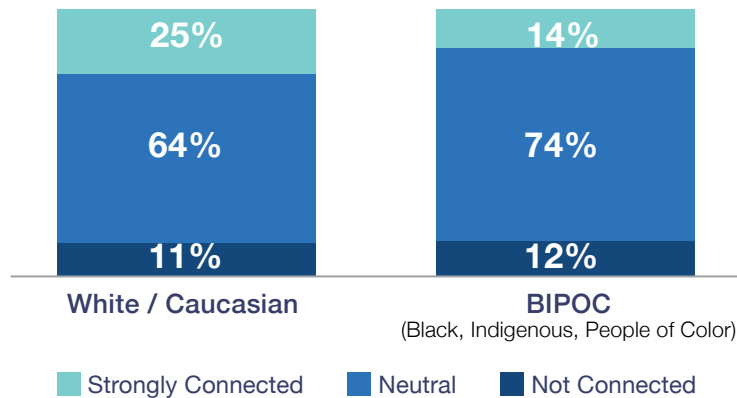
Using the demographic information collected, we can provide a more granular view of race. Our findings suggest that there are and will be differences across the different groups represented in BIPOC, making it important to be able to address the concerns for each.

The ability to be Strongly Connected varies across different self-identified racial groups.

White / Caucasian	Hispanic	Black or African American	Asian / Pacific Islander
25%	17%	12%	17%
64%	73%	75%	70%
11%	10%	12%	14%

Comparison of Race

■ Strongly Connected   ■ Neutral   ■ Not Connected
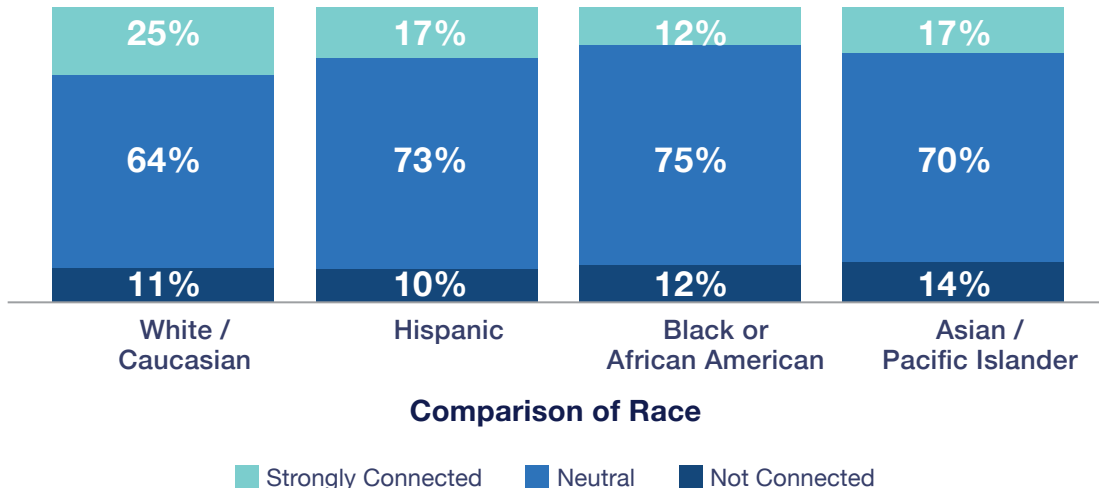
④ Tenure

If you are familiar with our prior research on Engagement, you'll know that those who have been with their company for less than a year are much more likely to be Fully Engaged due to the Honeymoon Effect. It appears that the Honeymoon Effect does not apply to Connection.

	0-1 Year	0-1 Year COVID	1-2 Years	2-4 Years	5-8 Years	8+ Years
Strongly Connected	14%	18%	19%	20%	21%	29%
Neutral	76%	69%	68%	69%	68%	60%
Not Connected	10%	13%	13%	11%	11%	11%

Comparison of Tenure

Legend: ■ Strongly Connected ■ Neutral ■ Not Connected
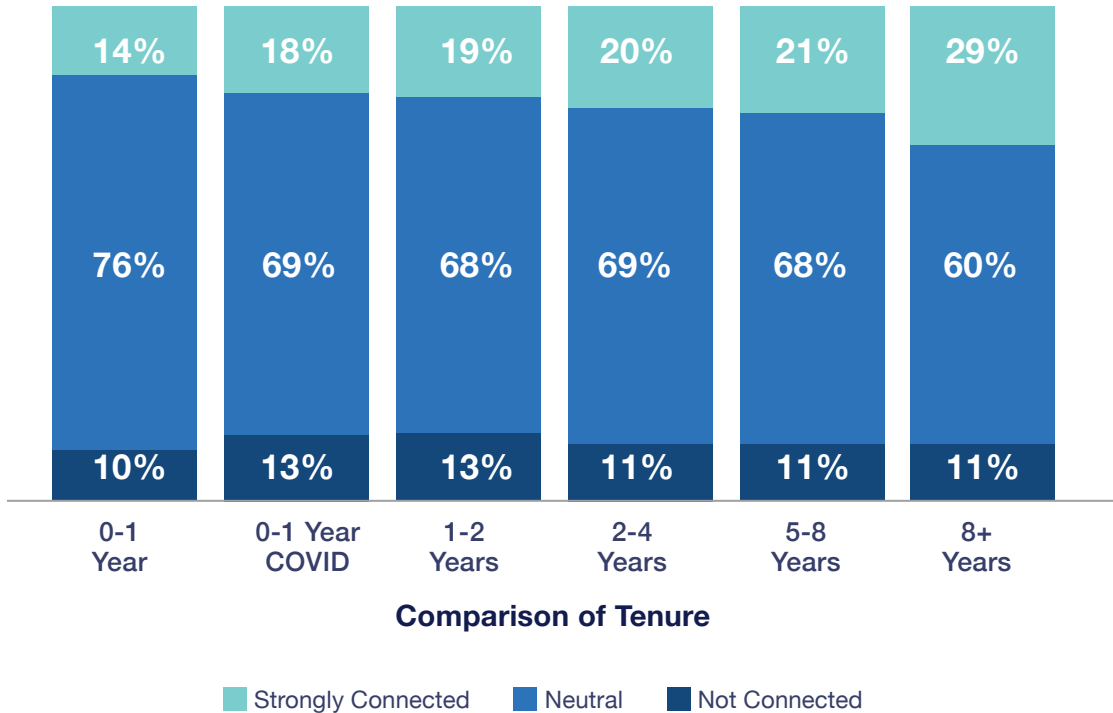
The longer you are with an organization the higher likelihood to feel **a sense of Connection**.

Employees with the greatest tenure are **3X more likely** to be **Strongly Connected** compared to those in the first year of tenure.

⑤ Level

Frontline managers have the lowest likelihood of being Strongly Connected. It is often said that DE&I initiatives should focus on frontline managers so they can be more inclusive of their teams, but the data would suggest that organizations might want to shift their focus. Rather than putting the onus of team Inclusion on frontline managers, organizations should first ensure that their frontline managers themselves feel Strongly Connected.

	Upper Management	Middle Management	Frontline Management	Individual Contributor
Strongly Connected	23%	24%	17%	23%
Neutral	71%	67%	70%	64%
Not Connected	6%	9%	13%	13%

Comparison of Level

■ Strongly Connected   ■ Neutral   ■ Not Connected
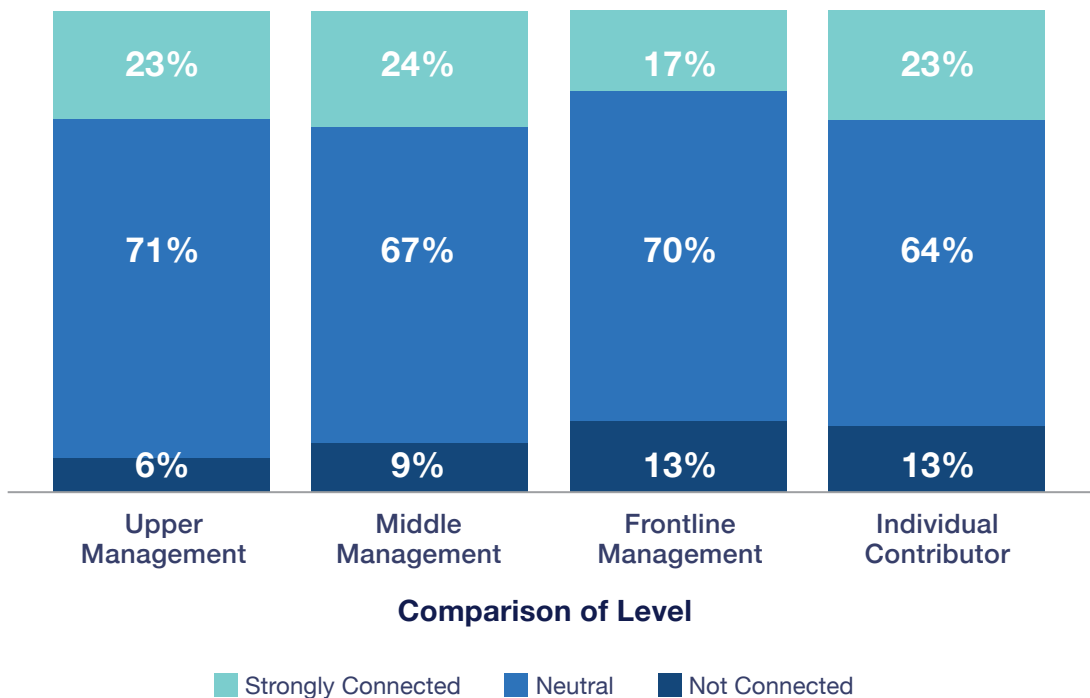
There is little difference in the likelihood of being **Strongly Connected** by level, but Individual Contributors are **2x more likely** to be **Not Connected** compared to upper management.

6 Company Size

It's not entirely surprising that it's easier to feel Strongly Connected at a smaller company, even though the larger companies are more likely to have official DE&I programs and efforts.

1-49 Employees	50-249 Employees	250-999 Employees	1000+ Employees
28%	17%	17%	22%
63%	72%	72%	64%
9%	11%	11%	14%

Comparison by Company Size

■ Strongly Connected   ■ Neutral   ■ Not Connected
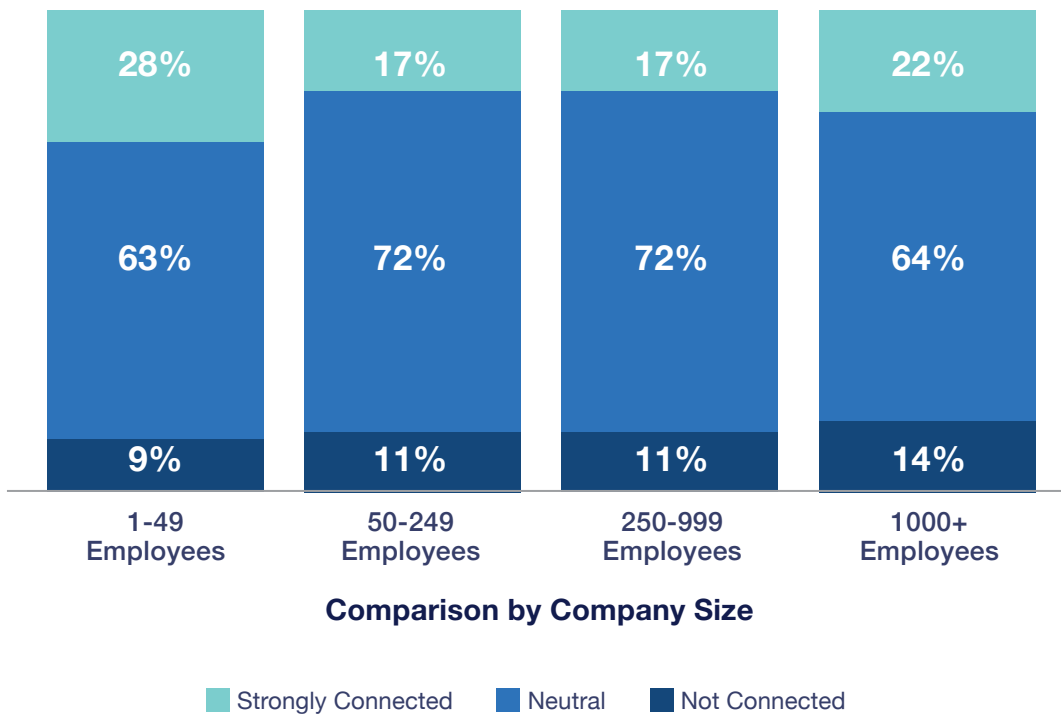
Smaller organizations have a **2x higher likelihood** of being **Strongly Connected** compared to companies with 50-999 employees.

Larger organizations have a **2x higher likelihood** to have employees who are **Not Connected** compared to smaller companies.

7 Teams

The team is a powerful mechanism to help people feel connected. Previous research helped us understand that those on teams are more likely to be Fully Engaged and Highly Resilient. However, there might be a sweet spot of belonging to one team versus belonging to many cross-functional teams – those on multiple teams are significantly less likely to feel Strongly Connected. This will vary by company, but perhaps employees feel less connected when on multiple teams because they are more likely to work with people they do not know or who don't care about them or their feelings. However, it's clear that employees who are on a team are far more likely to be Strongly Connected than those on no team at all.

Comparison by Team Membership

■ Strongly Connected　■ Neutral　■ Not Connected
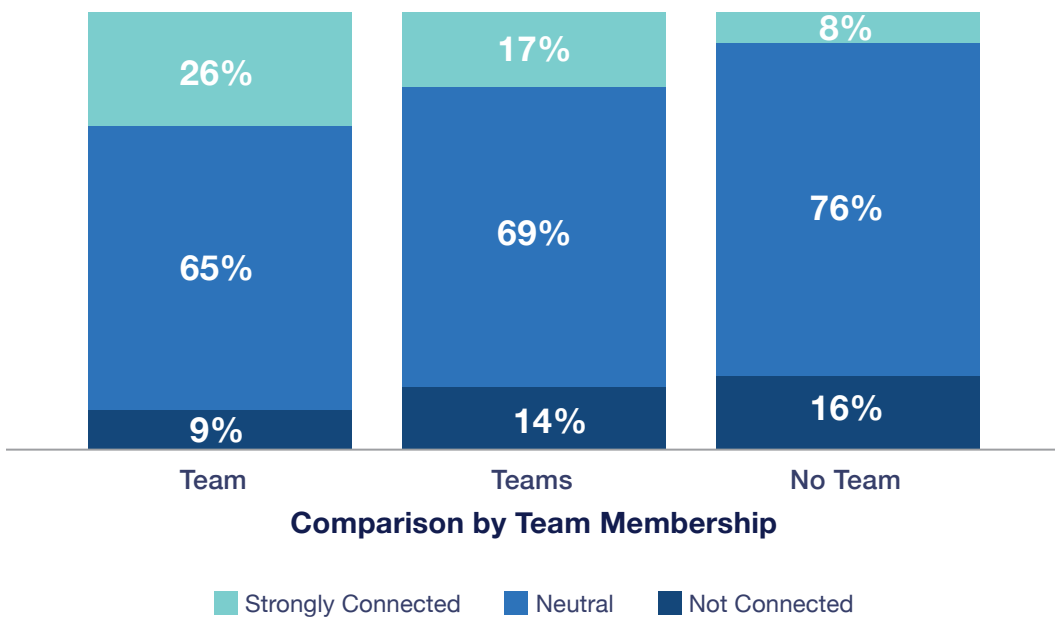
Team membership has a positive effect on Connection. Those who are a member of a team are **4X more likely** to be **Strongly Connected** compared to not being on a team.

Undoubtedly, teams, and team membership can be an important mechanism for addressing connection at work.

8 **Trust**

If an employee trusts both their teammates and their team leader, they are 7x more likely to be Strongly Connected compared to those who trust neither. It is difficult to have employees feel Strongly Connected if they do not trust their colleagues or team leader.

Trust and Connection

I can trust my teammates to do what they say they are going to do.

51%
Strongly
Connected

I trust my team leader.

22%
Strongly
Connected

30%
Strongly
Connected
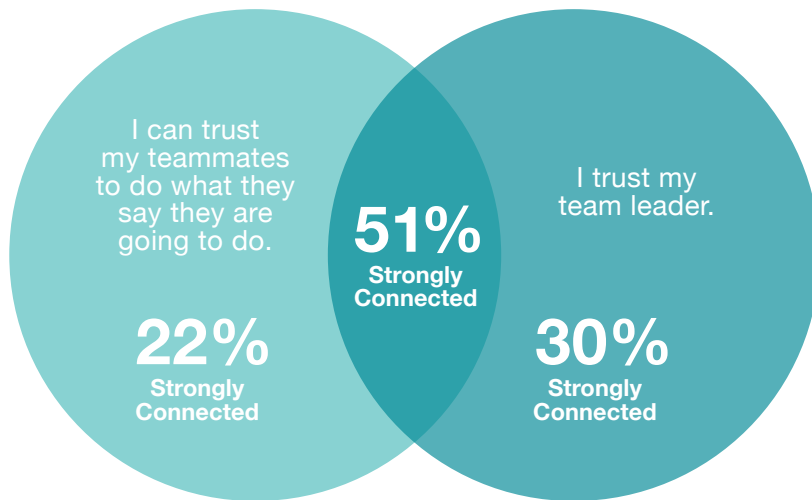
Trusting in both your teammates and team leader increases your likelihood to be **Strongly Connected** by anywhere between **3-4x**.

Trusting those around you (Teammates & Team Leader) increases your likelihood of being **Strongly Connected** by **7x** compared to no trust.

⑨ Type of Work

We asked participants: *What type of work do you do and what describes a typical day at work for you*. Participants responded with one of these three options:

I have a level of freedom to use my expertise to create something new. (Knowledge Worker)

I use a level of expertise to solve similar problems each day. (Hybrid Worker)

I do similar repetitive tasks each day. (Cycle Worker)

	Knowledge Worker	Hybrid Worker	Cycle Worker
Strongly Connected	24%	20%	19%
Neutral	70%	67%	67%
Not Connected	6%	13%	14%

Comparison by Type of Work

■ Strongly Connected   ■ Neutral   ■ Not Connected
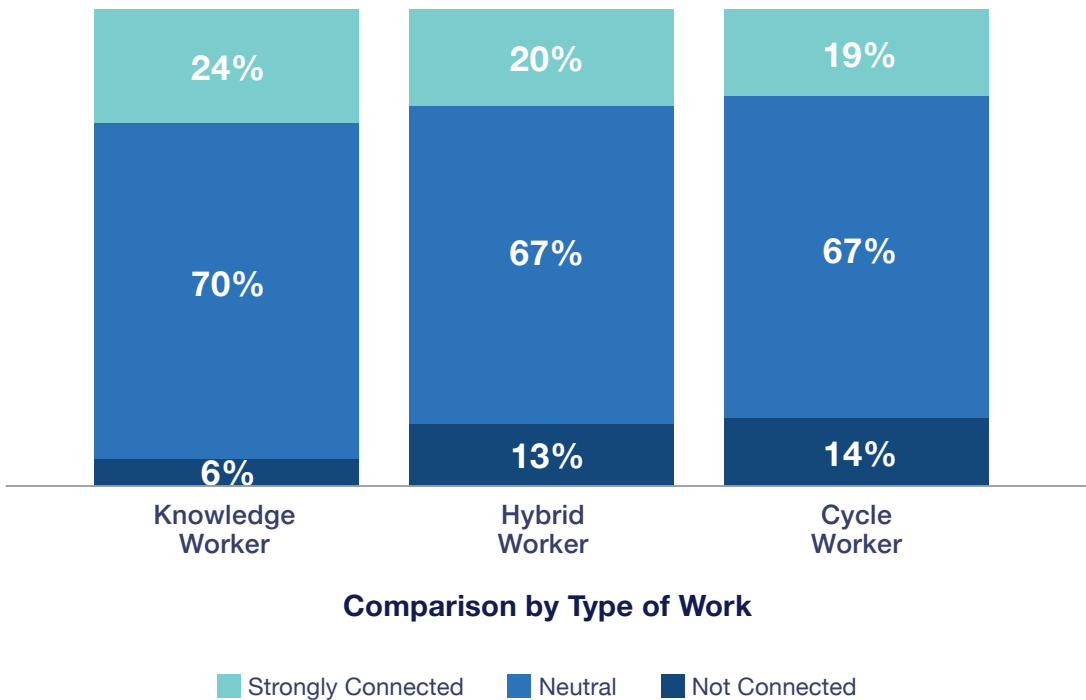
All three types of workers have approximately the same likelihood of being **Strongly Connected**.

The interesting thing is that Knowledge Workers are **3X more likely** to be **Not Connected** compared to Cycle Workers.

The likelihood to be Strongly Connected does not differentiate by the type of work that you do. Individuals who have a more repetitive job have a higher likelihood of being Not Connected. The type of work you do may not matter in your opportunity to be Strongly Connected but it does make a difference in your likelihood to be Not Connected.

10 Love and Work

We asked participants which of the following best describes them:

I love what I do and I'm great at it.

I love what I do and I have to work hard to be good at it.

I do not love what I do and I'm great at it.

I do not love what I do and I have to work hard to be good at it.

Comparison by Love and Work

■ Strongly Connected   ■ Neutral   ■ Not Connected
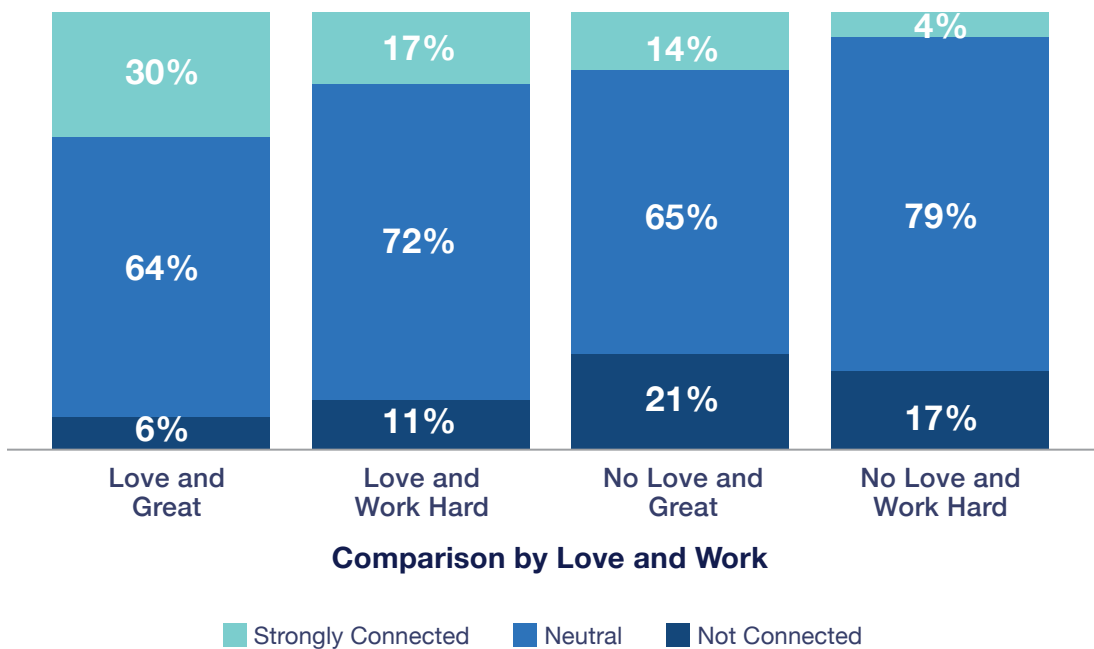
Employees who love what they do and are great at doing it are **8x more likely** to be **Strongly Connected** compared to those who dislike what they are doing.

Those who dislike their jobs and have to work hard at doing it are **3x more likely** to be **Not Connected**.

In addition, those who love their work are **4x more likely** to stay with their organization.

If a person loves what they do and feels great at it – their work is a true and authentic expression of who they are – they are far more likely to feel Strongly Connected. Conversely, if someone thinks they are in the wrong job – if they don't fit their work – it is much harder to feel Strongly Connected.

What this suggests is that an employee's work is not just a context in which Inclusion happens or doesn't. Their work is a mechanism through which an employee can feel more connected. As such, we shouldn't be looking at Inclusion as though it is separate and siloed from work, and merely an honorable endeavor to help workers feel included and connected. It is actually interwoven into the work itself, and into the employee's feeling that they truly fit their work. Thus, the more organizations can be intentional in matching an employee to their work, not only will they net greater productivity, they will also be increasing the person's feeling of Connection at work, with all of its attendant benefits.

8

Conclusion

Conclusion

We've built a simple set of twelve items that measure a person's feelings of being seen, heard, and valued. All individuals should have the opportunity to grow, develop, feel respected, trust others, and otherwise have a chance to flourish within their organization. The ConnectionXPS metric allows everyone to have a confidential way to speak the truth about their level of Connection.

Through our research, we have learned that the feeling of Connection will vary by race, sexual orientation, and other demographic characteristics. We began this research wanting to understand why many DE&I initiatives have not led to lasting change. Carefully listening to the voices of the stakeholders helped us to develop the ConnectionXPS metric. The development of this metric was done to fill a void and provide a way to measure Connection as an indicator of Inclusion.

It is clear that, aside from being the morally right thing to do, focusing on Inclusion can be beneficial for the organizations that choose to concentrate their efforts on improving it. **With the ConnectionXPS metric, we are now able to measure a person's feeling of being seen, heard, and valued; and, over time, determine if efforts at increasing these feelings are actually working.**
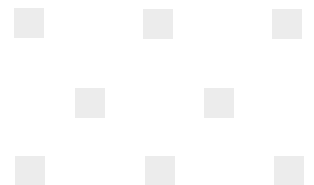
9

Appendix

Technical Development of the ConnectionXPS Metric

For the purposes of this document and our work, Connection is defined as the feeling of being seen and valued for one's own uniqueness. When one feels a sense of Connection, they feel safe to present themselves authentically and to voice their thoughts and opinions. Further, a sense of Connection implies the confidence that one will be given a fair shot at success and that they will be assessed based solely on their work and the contributions they make to the organization.

The ConnectionXPS (Connection XPerience Score) metric was developed over a series of 4 studies. Study 1 consisted of qualitative interviews and focus group discussions intended to learn about the lived experiences of men and women of color at work, and the development of an initial item pool of 349 items derived from the data collected as a result. Studies 2 – 4 were used for item evaluation, model development, and model testing. Study 1 is represented in this report only with regard to the findings that came from rigorous qualitative analysis of the interview content. Studies 2-4 are described in detail.

Study 1. Qualitative Interviews and Item Pool Development

Findings

In total, the interviews conducted for this study produced 33 hours of content. The researchers took an iterative, inductive approach to thematically coding the interview content and carefully extracted key words and phrases that were repeated across multiple interviewees and/or phrased in such a way as to evoke a strong (sometimes visceral) response.

Thematic coding of interview content yielded seven distinct themes:

1. **Caring Relationships** is operationally defined as "Being part of something better at work starts with caring relationships with others". Primarily, these relationships are with one's immediate team and manager. Many participants spoke of their teams as a family and of positive, supporting relationships with their managers.

2. **Expectations** is operationally defined as "Differential expectations based on the demographic characteristics of team members are present". Individuals want to be respected, treated equitably, and be expected to meet the same level of expectations as everyone else on their team.

3. **Future Focused** is operationally defined as "More than anything, people want a chance to grow and develop within their organization". This begins with the feeling that there is a place to which they can aspire and a person to whom they can look up.

4. **Innovation** is operationally defined as: There is a culture of innovation within the individual's experiences of work. A place where mistakes are heralded as something positive and there is an openness to failure. Discussions are open dialogues with no right or wrong answers. Disagreements are positive and provide opportunities for change.

5. **Protecting in Plain Sight** is operationally defined as: Too often, participants talk about their negative coping mechanism as things they would do to fit in with others. This protection is a barrier to a true feeling of connection to others.

6. **Valued as a Human** is operationally defined as: Each human has a unique value they can add to the organization. Valuing each person has benefits. When in the sweet zone, respondents are able to be themselves and feel accepted.

7. **Seen / Heard (Voice)** is operationally defined as: Being seen for who we are and having a feeling of safety are part of having a voice. This also includes being able to discuss how the world affects us personally – others being receptive to what one has to say and one feels heard as a result.

An initial item pool of 349 potential items were written based on the experiences of the interviewees.

Study 2. Initial Item Selection and Testing

The purpose of this study was to collect data for the initial testing and evaluation of items selected from the pool of items developed in Study 1.

In addition to the overarching expectation that all items should relate directly to the topic of Connection, the researchers established four criteria for the selection of appropriate items from the item pool to include in the initial set of items to be tested in Study 2. These criteria were selected based upon their consistency with the ADP Research Institute approach to item development, as described below:

1. All items should be written in **common parlance** – that is, words common to ordinary conversation should be used instead of unusual phrasing, technical terms, or jargon.

2. Each item should focus on measuring **one thought** – double-barreled items (items that measure two or more things at one time) are avoided because they require too much cognitive effort for respondents who may feel differently about each "thing" included in the item.

3. Items should position responses to reflect **me rating me** and not anyone else – humans are very capable of reporting about their own perceptions, beliefs, and experiences, but not very good at reporting on these things for other people.

4. Include an **extreme word / language** to push people away from extreme response patterns – words like *always* and *never* are absolute in nature, and using them encourages respondents to shy away from the most extreme response options except when they are the most accurate responses available.

With these criteria in mind, 70 unique items were selected for initial testing. Based on the experience and expertise of the researchers, these 70 items were likely to perform well, met the criteria described above, and included very few redundant items. This set of items included representation of the seven thematic areas identified in Study 1 and included 8-12 items per theme. Four thematic areas included both positively and negatively worded items at this stage of development. The researchers acknowledged a priori that these themes may not hold as distinct constructs when measured, given the overlapping nature of the experiences that resulted in the formulation of each one. However, the research team agreed that these seven thematic areas were potentially distinct in nuance whether that nuance could be captured in a meaningful way using items that met the criteria listed above or not.

The researchers met with the rest of the project team to share the 70 items and the themes that had emerged from the qualitative work conducted as part of Study 1, and to invite reflection and discussion on the extent to which the 70 items reflected the full experiences described by interviewees. After a few minor edits, the 70 items for initial testing were finalized.

Face Validity

Face validity is the idea that a set of items appear (at face value) to measure what they are intended to measure. Face validity is determined by expert opinion; there is no analytic approach or statistical test that can be used to demonstrate or provide evidence for face validity. In order to evaluate the face validity of an item, one must think carefully and critically about whether the item (and what it is intended to "get at") is consistent with and meaningfully connected to the latent construct of interest (in this instance, Connection). After careful review and thorough discussion, the entire research team reached a consensus that the 70 items included in Studies 2-4 have high face validity.

Summary of Data Collection and Participants

A survey platform was used to field the items in the form of surveys, with audience panel members serving as participants. Given the purposes of this project, the researchers targeted working adults in the United States and oversampled the population based on gender (50% female minimum), race (25% White), and age (i.e., approximately equal numbers of respondents over 40 years of age and under 40 years of age).

To limit the length of each online survey to a maximum of 50 items, the 70 items were separated into three groups of 30 items and fielded as three versions of the same questionnaire. Eight items were included in all 3 versions and an additional four items were included in two versions.

In addition to the items being tested, the questionnaires included the eight Engagement Pulse items, nine items previously tested and known by the researchers to perform well in the context of studying latent constructs related to experiences at work (e.g., *I trust my team leader*, *I am valued for what I do at work* and *I know I have an opportunity to grow and develop with my company*), and three demographic items (i.e., age, gender, race). The demographic items, eight overlapping test items, Engagement Pulse items, and nine additional items were included to allow for the identification of matched cases across the three versions of the questionnaire in the event that evaluation of individual items was not sufficient for selecting items for additional testing in Study 3.

Just over 1,000 complete response sets were collected for each of the three versions of the questionnaire, resulting in a total sample of $n = 3,012$. The distributions of demographic characteristics for this sample are displayed in Table 1.

Table 1. Distribution of demographic characteristics for Study 2 sample

Gender	n	%
Female	1,599	53.1
Male	1,352	44.9
Non-binary	35	1.2
Prefer not to answer	26	0.9

Age Group	n	%
18-19 years	407	13.5
20-39 years	1,186	39.4
40-54 years	935	31.0
55-74 years	463	15.4
75+ years	21	0.7

Race	n	%
American Indian / Alaskan Native	137	4.5
Asian / Pacific Islander	334	11.1
Black / African American	1,336	44.4
Hispanic	363	12.1
White / Caucasian	721	23.9
Multiple / Other	121	4.0

LGBTQ+	n	%
Yes	542	18.0
No	2,358	78.3
Prefer not to answer	112	3.7

Item Evaluation

Initial evaluation of the 70 items consisted of calculation and review of item-specific characteristics and the relationships between each item and the nine previously studied test items (referred to below as control variables). Specifically, we examined for each item:

- frequency distribution of responses for overall sample,
- frequency distribution of responses by gender,
- frequency distribution of responses by race,
- average response for each race × gender group,
- amount of variation in average response between race × gender groups, and
- comparison of mean responses based on responses of *strongly agree* vs. all other responses on the control variables.

Once these pieces of descriptive information were calculated for each item, they were considered together as evidence of how the item performs both independently and in the context of Connection and other workplace factors. Thirty-two items were identified as having performed satisfactorily at this stage of the project and were selected for additional testing and initial factor modeling in Study 3. Average item responses and partial response distribution information for each of these 32 items is summarized in Table 2.

Table 2. Descriptive information used in the evaluation of items in Study 2

| | Average Response | | % Strongly Agree | | | | | |
| | | | | Race | | | | |
Item	Mean	SD	Overall	Am. Indian / Alaskan Native	Asian / Pacific Islander	Black / African American	Hispanic	White / Caucasian
Item 1	3.3	1.18	17.5	20.9	13.8	20.8	17.9	11.6
Item 3 *	2.8	1.23	18.2	23.3	13.8	21.5	17.9	12.9
Item 7	3.7	1.06	21.7	14.0	19.8	22.1	24.5	21.6
Item 14	3.5	1.14	19.1	29.9	37.4	33.7	36.9	36.2
Item 15	3.6	1.11	21.0	17.0	14.3	20.8	23.9	22.7
Item 19 *	2.8	1.18	14.2	14.6	12.9	15.7	16.0	10.5
Item 21	3.5	1.14	18.8	21.3	10.5	20.0	20.5	19.3
Item 24 *	3.2	1.28	11.2	8.5	6.7	14.3	6.8	9.7
Item 25 *	3.2	1.26	12.3	10.6	4.8	16.4	6.8	10.9
Item 28	3.4	1.15	18.6	12.8	11.4	21.5	17.9	16.8
Item 31	3.6	1.09	21.5	14.0	21.6	22.3	19.8	20.7
Item 32	3.6	1.13	24.4	16.3	16.4	27.3	20.8	25.4
Item 33	3.4	1.18	19.9	21.3	12.4	22.8	19.7	17.2
Item 36	3.3	1.15	16.8	9.3	16.4	19.3	13.2	15.5
Item 43	3.4	1.13	15.5	14.9	9.5	18.0	13.7	13.4
Item 46	3.7	1.09	24.8	27.7	27.4	25.4	27.1	21.9
Item 48 *	3.00	1.27	13.3	21.3	12.4	13.0	18.6	9.2
Item 51	3.4	1.16	16.9	9.3	12.1	19.5	17.9	13.4
Item 52	3.6	1.07	19.4	11.6	17.2	22.3	21.7	14.2
Item 54	3.6	1.12	20.5	27.7	20.4	20.8	19.3	19.1
Item 55	3.7	1.09	25.0	21.3	16.2	26.1	23.9	26.9
Item 56	3.5	1.14	19.5	21.3	23.0	20.3	20.7	14.3
Item 57	3.5	1.19	23.2	29.8	26.5	21.7	27.1	21.1
Item 59 *	2.9	1.20	15.1	23.4	17.7	15.9	17.9	10.0
Item 62	3.4	1.17	19.6	27.7	19.5	19.6	22.1	15.9
Item 63 *	3.3	1.29	11.3	23.4	12.4	11.4	12.9	8.0
Item 64 *	2.8	1.26	10.9	25.5	8.0	11.1	13.6	7.6
Item 65	2.8	1.25	19.2	27.7	15.9	22.0	16.4	17.5
Item 66 *	3.0	1.21	13.2	21.3	14.2	11.8	15.7	12.0
Item 67	3.5	1.10	18.8	27.7	22.1	18.6	20.0	15.5
Item 69 *	3.1	1.32	14.4	12.8	14.2	17.6	15.0	8.8
Item 70 *	3.2	1.28	12.9	21.3	8.0	15.2	17.9	6.4

* Indicates negatively worded item

Study 3. Item Testing and Initial Factor Modeling

The purpose of this study was to collect additional data on a refined subset of items identified as the best performing items in Study 2 and use exploratory factor modeling techniques in combination with model testing approaches to identify the subset of items that work best.

Summary of Data Collection and Participants

The 32 items retained for additional testing in this study were tested in a single questionnaire to a random stratified sample. In addition to the 32 test items, this questionnaire also included the eight Engagement Pulse items, six items previously tested and known by the researchers to perform well in the context of studying latent constructs related to experiences at work, 4 demographic items (i.e., age, gender, race, LGBTQ+ self-identification), and a single item which read: *Are you currently experiencing discrimination at work?*

For this study, the researchers targeted adults employed full-time in the United States and oversampled the population based on race and LGBTQ+ identification, using the following guidelines: maximum of 25% White participants and a minimum of 10% of participants who identify as LGBTQ+. A total of *n* = 1,506 individuals submitted complete response sets for this questionnaire. The distributions of demographic characteristics for this sample are displayed in Table 3.

Table 3. Distribution of demographic characteristics for Study 3 sample

Gender	n	%
Female	755	50.1
Male	737	48.9
Non-binary	10	0.7
Prefer not to answer	4	0.3

Age Group	n	%
18-19 years	153	10.2
20-39 years	594	39.4
40-54 years	499	33.1
55-74 years	251	16.7
75+ years	9	0.6

Race	n	%
American Indian / Alaskan Native	60	4.0
Asian / Pacific Islander	184	12.2
Black / African American	689	45.8
Hispanic	217	14.4
White / Caucasian	306	20.3
Multiple / Other	50	3.3

LGBTQ+	n	%
Yes	256	17.0
No	1,203	79.9
Prefer not to answer	47	3.1

Item Evaluation

Evaluation of the 32 items consisted of calculation and review of item-specific characteristics and the relationships between each item and the six previously studied test items (referred to below as control variables). Specifically, we examined for each item:

- frequency distribution of responses for overall sample,

- frequency distribution of responses by gender,

- frequency distribution of responses by race,

- average response for each race × gender group,

- amount of variation in average response between race × gender groups, and

- comparison of mean responses based on responses of *strongly agree* vs. all other responses on the control variables.

Once these pieces of descriptive information were calculated for each item, they were considered together as evidence of how the item performs both independently and in the context of Connection and other workplace factors. Each item's performance in Study 3 was compared to its prior performance in Study 2; six items were identified as having unstable characteristics across samples and were omitted from the remaining analyses for this phase of the project. The remaining 26 items were identified as having performed satisfactorily at this stage of the project and were retained for the next steps of analysis. Average item responses and partial response distribution information for each of these 32 items is summarized in Table 4.

Table 4. Descriptive information used in the evaluation of items in Study 3

Item	Mean	SD	Overall	Am. Indian / Alaskan Native	Asian / Pacific Islander	Black / African American	Hispanic	White / Caucasian
	Average Response		**% Strongly Agree**					
				Race				
Item 1	3.4	1.15	18.6	26.7	16.3	17.6	19.7	18.0
Item 3 *	3.1	1.20	13.7	20.0	14.1	20.5	18.9	19.0
Item 7	3.6	1.09	21.4	8.3	8.7	11.6	8.8	10.5
Item 14	3.5	1.12	18.6	21.7	10.9	20.9	18.9	18.0
Item 15	3.6	1.06	19.1	18.3	10.9	19.7	21.7	15.7
Item 19 *	3.0	1.16	10.1	13.3	3.8	13.9	7.4	8.2
Item 21	3.4	1.16	18.3	5.0	6.5	11.8	7.8	5.9
Item 28	3.5	1.13	19.0	21.7	13.0	22.1	17.5	22.5
Item 31	3.6	1.09	19.2	10.0	8.2	17.3	21.2	19.6
Item 32	3.6	1.08	20.5	18.3	8.7	14.9	16.6	13.1
Item 33	3.4	1.14	16.9	16.7	7.1	17.0	13.4	10.1
Item 43	3.4	1.13	15.4	16.7	17.4	21.0	20.7	22.9
Item 46	3.7	1.05	20.8	13.3	9.2	12.5	18.9	9.8
Item 48 *	3.0	1.23	12.3	13.3	12.0	16.8	18.0	14.4
Item 51	3.3	1.14	15.6	15.0	13.0	22.1	23.5	18.3
Item 52	3.6	1.10	20.1	13.3	16.3	21.2	20.7	19.6
Item 54	3.6	1.10	19.8	18.3	22.3	24.5	26.3	30.4
Item 56	3.4	1.11	17.1	18.3	12.5	22.2	24.0	23.9
Item 57	3.6	1.14	21.4	10.0	10.3	15.4	12.0	7.8
Item 59 *	2.9	1.23	12.4	21.7	13.6	19.0	19.4	16.3
Item 62	3.4	1.14	17.9	10.0	3.3	13.5	11.1	7.2
Item 64 *	2.8	1.23	10.0	21.7	10.3	18.9	15.2	14.1
Item 66 *	2.9	1.20	10.6	25.0	9.2	20.0	17.5	17.0
Item 67	3.5	1.06	17.8	8.3	6.5	16.3	14.3	6.2
Item 69 *	2.8	1.27	12.1	8.3	2.7	13.2	11.5	6.2
Item 70 *	2.7	1.22	21.4	26.7	12.5	24.5	22.1	18.0

* Indicates negatively worded item

Exploratory Factor Analysis

R software for statistical analysis was used to conduct an exploratory factor analysis (EFA) of the data collected for Study 3. EFA is a data-driven, exploratory method for determining the number of common factors underlying a response set as well as the relationship between individual items and those common factors. The purpose of EFA is to evaluate the dimensionality of a response set by identifying interpretable factors necessary to explain the relationships between responses. The foundational assumption of EFA is that the total variance of each variable or item can be explained by summing the common variance, the specific variance, and the error variance associated with that item.

In this context, common variance is the variance of an item that is shared with other items, specific variance is the variance of an item that does not correlate with other items, and error variance is the portion of the total variance attributed to random variation. Given the sample size, number of items, and non-normally distributed items response distributions and their linear combinations, EFA was estimated using both principal factors and least squares estimation; the two approaches yielded identical results.

The results of the EFA were reviewed and explored using a comprehensive approach to evaluating and interpreting this approach. First, the Kaiser-Guttman rule was used to identify potential factors as those having an eigenvalue ≥ 1.0. Nine such factors were observed, together accounting for approximately 70% of the variance. Second, the eigenvalue (scree) plot was examined to evaluate the additive value of each additional factor after the first. This step indicated that only three factors were appropriate and interpretable (accounting for 52% of the variance). Third, parallel analysis was used to determine the number of statistically significant eigenvalues and test the hypothesis that the data best fit a 3-factor model.

Parallel analysis (PA) is a Monte Carlo approach to determining the statistically significant number of eigenvalues in a factor analysis. PA works by constructing correlation matrices of random variables that use the same number of items and sample size as are observed in the data. Eigenvalues for each correlation matrix are computed, averaged across replications, and compared to the EFA-produced eigenvalues. The first eigenvalue from the observed data (i.e., EFA results) is compared to the first average eigenvalue from the random data, the second eigenvalue from the observed data is compared to the second average eigenvalue from the random data, and so on. Factors with observed eigenvalues greater than the parallel average random eigenvalues are factors that should be retained, as they are statistically significant. Factors with eigenvalues equal to or less than the parallel average random eigenvalue are artifacts of sampling error at the $p < .05$ level and are not statistically significant.

Both the traditional approach to PA (i.e., generating correlation matrices based on random variables) and a permutation approach were utilized for this study because permutation approaches are known to be more robust to multivariate nonnormality. For the Study 3 sample, the results of the 2 PA approaches were approximately equivalent. When compared to the eigenvalues produced by the EFA, PA consistently indicates that three factors should be retained. Careful review of item loadings and inter-item correlations indicated that the model could likely be simplified from 32 items to a smaller number.

Exploratory Confirmatory Factor Models for Model Simplification

Using the data collected for Study 3 as the bases for calculating population parameters, R was used to general a population of $N = 100,000$ from which 500 samples of $n = 1,000$ cases were randomly selected. These 500 simulated data sets were used to explore and test an iterative series of measurement and structural models for the instrument to identify the best combination of items for each subfactor – items that performed well in the context of just the subfactor to which they are related, but also that performed well in the overall model of three factors that reflect a single latent construct (i.e., Connection).

The model most consistent with the underlying theoretical relationships expected for the broad construct of Connection and to which the data collected in Study 3 were the best fit consisted of 12 items distributed equally across three factors representing the experiences of team members being and feeling seen, heard, and valued:

1. **Seen** is comprised of positively worded items and operationally defined as: In the present, you see yourself as connected to others in your organization. You can see how others like you are able to grow and thrive, and so see yourself as having the chance to take similar paths. This factor is measured by four items:

    a. I never have feelings of being an outsider on my team.

    b. I see myself represented in the leadership of my organization.

    c. I believe my company promotes people based on the work they do, not what they look like.

    d. I never feel invisible at work.

2. **Heard** is comprised of positively worded items and operationally defined as: Feeling like your opinion counts, even when it conflicts with the consensus. Should disagreements occur, you feel safe sharing your views and debating their worth. This factor is measured by four items:

    a. I feel safe having spirited debates with my manager.

    b. I can speak freely without fear of retribution.

    c. When I share my opinion, I feel heard.

    d. I can let my guard down with my team.

3. **Valued** is comprised of negatively worded items that are operationally defined as: Knowing your worth comes from all that you authentically are. You feel able to share this authentic self with colleagues without having to censor yourself. This factor is measured by four items:

    a. I believe I must work twice as hard to earn the same respect as my peers.

    b. I constantly censor my views to fit in with work.

    c. I switch my language to make others feel comfortable.

    d. I have to work hard to avoid being stereotyped at work.

Content Validity

Content validity is the idea that the items included in an instrument provide sufficient coverage for measuring the latent construct(s) that the instrument claims to measure. There is no statistical test for content validity. Like face validity, content validity is largely determined by expert opinion. In the case of this instrument, content validity was established by mapping the factors of seen, heard, and valued to the theoretical definition of workplace Connection, as well as to all seven themes that emerged from the qualitative analysis conducted for Study 1. With this information in mind, the research team was unanimous in the determination that the content of the 12 items retained for this instrument are sufficient for the measurement of Connection as defined by this project.

Study 4. Confirmatory Factor Modeling

The purpose of this study was to collect additional data using the final set of items selected for the ConnectionXPS metric for the purposes of additional item evaluation and confirmatory factor modeling.

Summary of Data Collection and Participants

The items retained for additional testing in this study were tested via a random stratified sample. In addition to the 12 ConnectionXPS test items, this questionnaire also included the eight Engagement Pulse items, five items previously tested and known by the researchers to perform well in the context of studying latent constructs related to experiences at work, five items specific to the work experience, demographic items, and a single item which read: *Are you currently experiencing discrimination at work?*

Given the purposes of Study 4 and the intended use of the ConnectionXPS metric, the researchers targeted adults who were employed and living in the United States; no oversampling was requested. A total of $n = 3{,}998$ individuals submitted complete response sets for this questionnaire. The distributions of demographic characteristics for this sample are displayed in Table 5.

Table 5. Distribution of demographic characteristics for Study 4 sample

Gender	n	%
Female	2,636	56.9
Male	1,294	65.9
Non-binary	40	1.0
Prefer not to answer	28	0.7

Race	n	%
American Indian / Alaskan Native	82	2.1
Asian / Pacific Islander	206	5.2
Black / African American	902	22.6
Hispanic	380	9.5
White / Caucasian	2,349	58.8
Multiple / Other	79	2.0

Age Group	n	%
18-19 years	400	10.0
20-39 years	2,267	56.7
40-54 years	840	21.0
55-74 years	471	11.8
75+ years	20	0.5

LGBTQ+	n	%
Yes	722	18.8
No	3,156	78.9
Prefer not to answer	120	3.0

Education Level	n	%
High School / GED	783	19.8
Some College	779	19.7
2-year Degree	619	15.7
4-year Degree	1,068	27.0
Professional / Advanced Degree	621	15.7
None of the above	81	2.1

Level within Company	n	%
Intern / Temporary Employee	310	7.8
Individual Contributor	1,563	39.1
Frontline Management	792	29.8
Middle Management	889	22.2
Upper Management	401	10.0
Prefer not to answer	43	1.1

Industry	n	%
App-based task employment	96	2.4
Construction and related trades	264	6.6
Education	628	15.7
Finance		
Food Service	263	6.6
Healthcare	498	12.5
Healthcare support	314	7.9
Information	104	2.6
Leisure & hospitality	228	5.7
Manufacturing	189	4.7
Professional services	347	8.7
Real estate	72	1.8
Technology	232	5.8
Trade	352	8.8
Transportation & warehousing	168	4.2
Prefer not to answer	27	0.7

Company Size	n	%
1-49 employees	901	22.5
50-249 employees	1,235	30.9
250-999 employees	781	19.5
1,000+ employees	1,030	25.8
Prefer not to answer	51	1.3

Tenure with Company	n	%
0-1 Years (I secured this job before the COVID-19 pandemic.)	376	9.5
0-1 Years (I had to find new employment during the COVID-19 pandemic.)	511	12.9
1-2 Years	728	18.3
2-4 Years	968	24.4
5-8 Years	627	15.8
More than 8 Years	758	19.1
Prefer not to answer	30	0.8

Twenty percent of the sample (*n* = 809) indicated that they are currently experiencing discrimination in the workplace. The distribution of responses across demographic groups is summarized in Table 6.

Table 6. Percentage of respondents currently experiencing discrimination in the workplace, by demographic characteristics

Demographic Characteristics	Discrimination Response		
	Count	% Yes	% No
Gender			
Female	2,636	19.5	80.5
Male	1,294	20.9	79.1
Non-binary	40	45.0	55.0
Prefer not to answer	28	25.0	75.0
Race			
American Indian / Alaskan Native	82	45.1	54.9
Asian / Pacific Islander	206	28.6	71.4
Black / African American	902	36.7	63.3
Hispanic	380	28.2	71.8
White / Caucasian	2,349	10.7	89.3
Multiple / Other	79	30.4	69.6
LGBTQ+			
Yes	722	38.1	61.9
No	3,156	16.0	84.0
Prefer not to answer	120	25.0	75.0
Age Group			
18-19 years	400	40.3	59.8
20-39 years	2,267	23.0	77.0
40-54 years	840	11.7	88.3
55-74 years	471	6.2	93.8
75+ years	20	0	100.0

Here are a few key summary points from Table 6 that are important in the context of this work:

- In general, there is no difference in rates of experiencing discrimination at work between men and women when race and LGBTQ+ identification is ignored (20% of females, 21% of males). More than double this rate (45%) of participants who identify as non-binary report experiencing discrimination.

- A higher percentage (45%) of American Indians / Alaskan Natives report discrimination at work than any other race group. The next highest percentage of participants who report discrimination is Black / African American individuals (37%), followed by those with multiple or other race (30%), Asian / Pacific Islanders and Hispanic participants at approximately 28%, and White / Caucasian participants at 11%.

- More than one-third (38%) of participants who identify as LGBTQ+ reported experiencing discrimination in the workplace, followed by 25% of participants who preferred to not answer the question. Only 16% of participants who do not identify as LGBTQ+ report experiencing discrimination.

- The highest levels of discrimination are reported among those 18-19 years of age (40%) and those 20-39 years of age (23%). Only 12% of 40-54-year-old participants and 6% of 55-74-year-old participants reported discrimination. None of the 75+ participants reported experiencing workplace discrimination.

When experience of discrimination is considered with regard to multiple demographic characteristics simultaneously, some clear patterns emerge:

- Asian / Pacific Islander males and females who identify as LGBTQ+ are much more likely to report workplace discrimination (57% of males, 41% of females) than their non-LGBTQ+ counterparts (18% of males, 22% of females).

- Black / African American males and females who identify as LGBTQ+ are much more likely to report workplace discrimination (53% of males, 48% of females) than their non-LGBTQ+ counterparts (34% of males, 31% of females).

- Hispanic females and males who identify as LGBTQ+ are much more likely to report workplace discrimination (51% of females, 48% of males) than their non-LGBTQ+ counterparts (23% of females, 17% of males).

- More than one-third of American Indian / Alaskan Native participants reported experiencing discrimination at work across gender and LGBTQ+ groups (i.e., 45% of non-LGBTQ+ males, 39% of LGBTQ+ females, 33% of non-LGBQ+ females; the sample size is insufficient to report for LGBTQ+ males).

- White / Caucasian males and females who identify as LGBTQ+ are much more likely to report workplace discrimination (26% of males, 19% of females) than their non-LGBTQ+ counterparts (11% of males, 8% of females).

Item Descriptive Statistics

Average responses, standard deviations, and response distributions were calculated for each of the ConnectionXPS items. These statistics are summarized in Table 7.

Table 7. Descriptive information for ConnectionXPS items, Study 4

| Item | Average Response | | % Strongly Agree | | | | | |
| | | | | Race | | | | |
	Mean	SD	Overall	Am. Indian / Alaskan Native	Asian / Pacific Islander	Black / African American	Hispanic	White / Caucasian
Seen								
I never have feelings of being an outsider on my team.	3.1	1.23	14.6	11.0	15.5	22.3	16.8	11.2
I see myself represented in the leadership of my organization.	3.5	1.13	18.9	14.6	17.0	24.1	20.0	16.7
I believe my company promotes people based on the work they do, not what they look like.	3.4	1.12	16.7	18.3	12.6	21.2	16.6	14.8
I never feel invisible at work.	3.4	1.16	18.6	12.2	15.5	22.4	18.7	17.5
Heard								
I feel safe having spirited debates with my manager.	3.4	1.11	15.4	15.9	12.1	19.3	16.8	13.8
I can speak freely without fear of retribution.	3.0	1.25	12.8	13.4	13.6	20.2	17.1	8.9
When I share my opinion, I feel heard.	3.4	1.12	17.6	19.5	14.1	22.6	18.4	15.5
I can let my guard down with my team.	3.6	1.07	19.1	22.0	12.6	25.6	19.5	16.6
Valued								
I believe I must work twice as hard to earn the same respect as my peers.*	3.6	1.13	23.7	23.2	18.9	23.5	22.4	24.1
I constantly censor my views to fit in at work.*	3.0	1.23	12.9	17.1	17.0	21.0	17.4	8.5
I switch my language to make others feel comfortable.*	3.5	1.13	19.2	19.5	17.0	24.4	18.4	17.2
I have to work hard to avoid being stereotyped at work.*	3.0	1.19	11.7	9.8	13.6	17.3	13.4	9.0

* Indicates negatively worded item

Confirmatory Factor Modeling

Confirmatory factor modeling techniques were used to fit the 12-item, 3-factor model identified in Study 3 to the data collected as part of Study 4. This model is depicted in Figure 1, below. The measurement portion of the model – the relationships between each set of four items and their corresponding factor – were tested individually for each factor as well as together for the overall model. Model fit statistics met minimum criteria for indicating acceptable model fit or better (i.e., CFI ≥ 0.95; ≥ 0.95; RMSEA ≤ 0.05, $p ≥$ 0.05; SRMR ≤ 0.05). When the full measurement model was fit to the data concurrently with the structural portion of the model (that is, the relationship of three unique factors as reflective indicators of a single latent construct), model fit statistics indicated good model fit to the data collected in Study 4 (i.e., CFI = 0.98; TLI = 0.97; RMSEA = 0.04, $p > 0.05$; SRMR = 0.04).

The statistical assumptions of congeneric, essentially τ-equivalent, and parallel indicators were tested and found to be tenable for each of the three factors of Connection included in the model. These assumptions were met for all three factors. Satisfying these assumptions means it is appropriate to calculate a simple mean or sum score for each of the three factors; mean values were chosen because their consistency with the original response scale renders them more easily interpreted than summed scores. The overall score for the ConnectionXPS is more nuanced and utilizes both a weighting schema and a standardization transformation. Instructions for calculating the overall score are omitted from this document as proprietary information.

Figure 1. Three-factor model of Connection
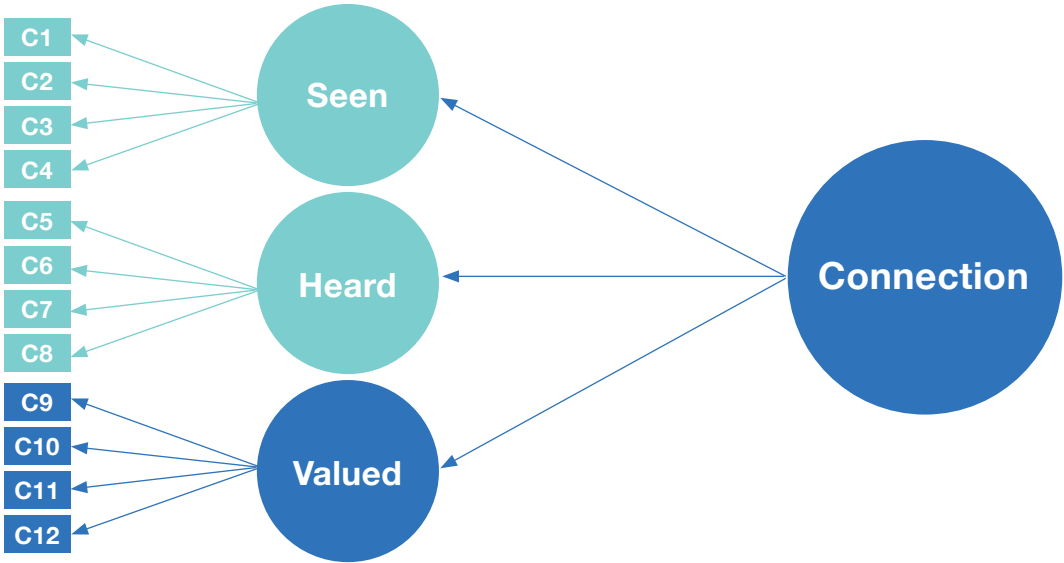
In addition to factor scores and an overall score, it was deemed appropriate to use these pieces of information to determine whether there are natural distinct groups along the spectrum of Connection, or if the construct is more linear in nature. Exploratory analyses indicated that there are three natural groupings that reflect the magnitude to which an individual feels a sense of Connection to their organization:

- **Strongly Connected** individuals are those at the most positive end of the Connection spectrum. These individuals feel seen, heard, and valued, the combination of which leads them to feel strongly connected to their teammates and workplace.

- **Neutral** individuals are those in the middle of the Connection spectrum. These individuals may feel seen, heard, or valued – or perhaps a combination of any two of these things, but it is not a clean sweep because they are struggling to feel a part of their work community in at least one of these ways but not all three.

- **Not Connected** individuals are those at the most negative end of the Connection spectrum. These individuals feel neither seen, heard, nor valued, the combination of which leads them to feel a lack of Connection to their teammates and workplace.

Validity

Construct validity is the idea that the items included in an instrument actually measure what the instrument is intended to measure. This is important because without construct validity, inferences cannot be drawn in a meaningful way. Construct validity is examined by studying the extent to which an instrument produces results similar to those of other validated instruments intended to measure the same construct. In the context of the ConnectionXPS, a validated instrument does not exist that operationally defines connection in the same way. Therefore, it is not possible to evaluate the construct validity of the instrument at this time beyond the confirmatory factor modeling described above.

Criterion validity is the idea that if an instrument measures what it claims to measure, it should yield results that are predictive of – or strongly related to – other constructs to which it should be theoretically related. Criterion validity can be evaluated through the predictive power of an instrument or through relationships observed at a single point in time. When data are collected over time and the predictive power of an instrument is studied, it is called predictive validity. When data are collected at the same, it is called concurrent validity.

Concurrent validity is the idea that if the construct of interest and some other construct theoretically related to the construct of interest are measured at the same time, a relationship between the two constructs will be observed in the data. As part of Study 4, we focused our efforts primarily on collecting data theoretically related to our construct of interest, Connection. Thus, in this section of the report we summarize our findings that speak to the concurrent validity of the *ConnectionXPS metric*, with a focus on convergent

validity. As described below, the category of Connection (i.e., *Strongly Connected, Neutral, Not Connected*) associated with the response set of each participant served as the primary metric for analysis. Approximately 21% of the Study 4 sample was identified as *Strongly Connected* (n = 833), 68% were *Neutral* in their Connection (n = 2,713), and 11% were *Not Connected* (n = 452).

Discrimination

Respondents were asked to answer yes / no to the question, *Are you currently experiencing discrimination in the workplace?* Across the Study 4 sample, 20% of respondents replied *"Yes"* (n = 809). Only 5% of those who reported experiencing discrimination were found to be *Strongly Connected* compared to 25% of participants who reported not experiencing discrimination. Additionally, 16% of those who reported experiencing discrimination were found to be *Not Connected* compared to 10% of participants who reported not experiencing discrimination. These pattern of results are logical and to be expected, as it is less likely for persons who feel they are being discriminated against at work to also feel they are seen, heard, and valued for what they bring to the workplace.

Engagement

Engagement was measured using the Engagement Pulse instrument. This tool distinguishes individuals who are Fully Engaged (a.k.a., "all in at work") from those who are not. In this data set, we found that 33% of *Strongly Connected* respondents are Fully Engaged compared to 14% of respondents who are *Neutral* in their Connection and less than 1% of respondents who are *Not Connected*. This means that individuals who feel *Strongly Connected* at work are 3× more likely to be Fully Engaged compared to those who are *Neutral* and 48× more likely to be Fully Engaged compared to those who are *Not Connected*. This relationship is consistent with our hypothesis that individuals who feel connected at work are psychologically and emotionally better positioned to reach high levels of Engagement than are individuals who feel they are not seen, heard, and valued for what they bring to the organization.
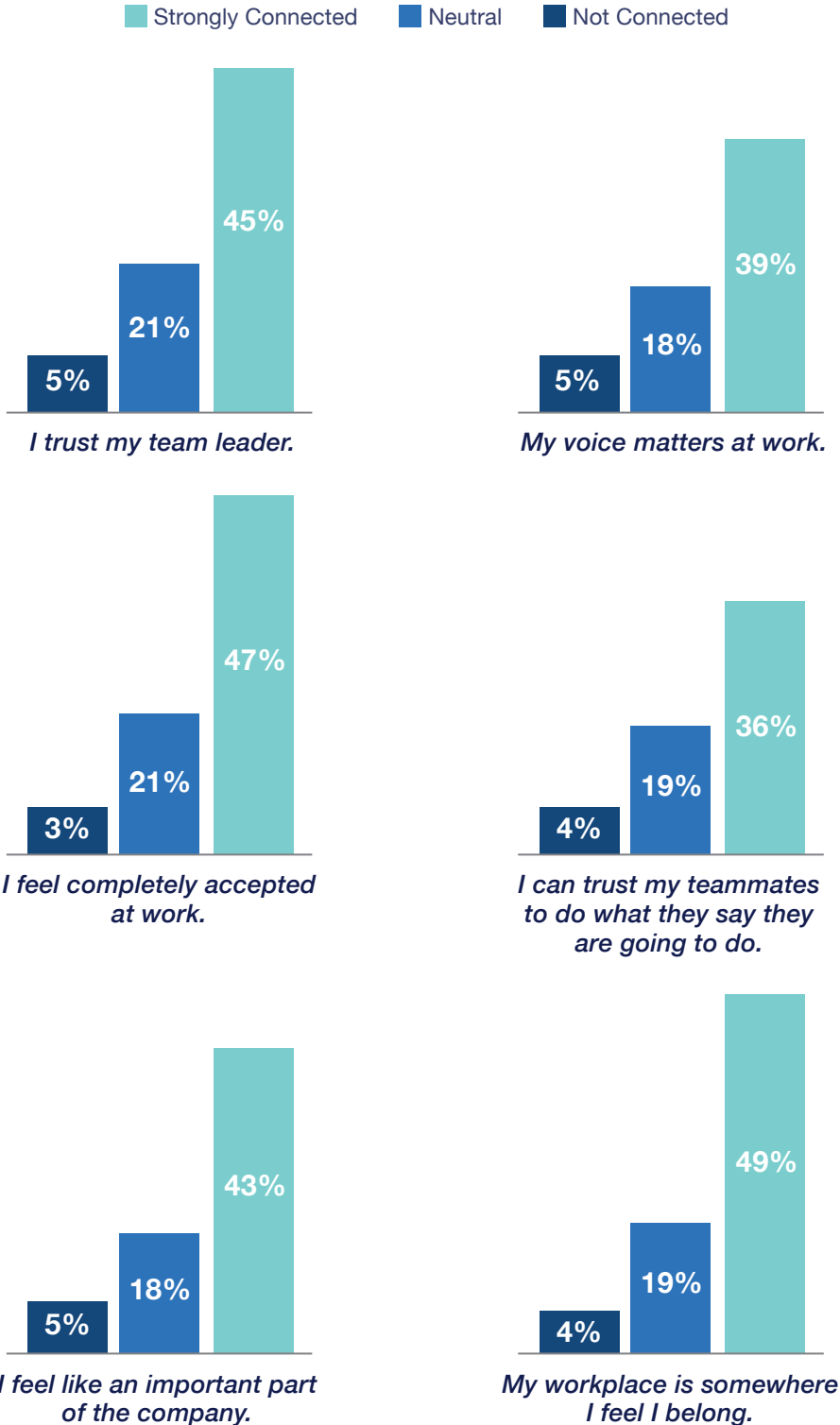
Items Known to Perform Well

Five items known from previous research to perform well were included in the Study 4 questionnaire and referred to here as "control variables". These items were used to investigate the concurrent validity of the ConnectionXPS metric by comparing the percentage of participants in each Connection category who *strongly agree* with each control variable (displayed in Figure 2). Visual inspection of these results highlights the significant differences in perceptions of respondents in each group. At a high level, the differences between the three Connection groups can be summarized as:

- Compared to individuals who are *Neutral* in their Connection to work, individuals who are *Strongly Connected* are 3× more likely to trust their team leader, 3× more likely to believe their voice matters at work, 3× more likely to feel completely accepted, 3× more likely to believe they can count on their teammates, 4× more likely to feel they belong, and 3× more likely to feel that an important part of the company.

- Compared to individuals who are *Not Connected*, individuals who are S*trongly Connected* are 15× more likely to trust their team leader, 12× more likely to believe their voice matters at work, 28× more likely to feel completely accepted, 14× more likely to believe they can count on their teammates, 23× more likely to feel they belong, and 14× more likely to feel that an important part of the company.

- Significant differences shine out between the *Neutral* group and the *Not Connected* group as well, where those who are *Neutral* in their Connection to work are 5× more likely to trust their team leader, 4× more likely to believe their voice matters at work, 4× more likely to believe they can count on their teammates, 8× more likely to feel completely accepted, 5× more likely to feel they belong, and 4× more likely to feel that an important part of the company.

The importance of trust becomes more telling when we consider responses to the *I trust my team leader* and *I can trust my teammates to do what they say they are going to do* items together. While 39% of individuals who *strongly agree* they trust their leaders are *Strongly Connected* and 36% of individuals who *strongly agree* they trust their teammates are *Strongly Connected*, 43% of respondents who *strongly agree* with both items are *Strongly Connected*. This finding is consistent with previous ADP Research Institute research which has demonstrated the added value of trusting relationships for outcomes such as employee engagement. Together, these results provide strong evidence for the concurrent validity of the ConnectionXPS metric, as the control items measure trust in one's leader at work and serve as more direct measures of constructs that are inherent to our operational definition of Connection.

Figure 2. Percent of participants in each Connection category who Strongly Agree with each control variable.

Legend: ■ Strongly Connected ■ Neutral ■ Not Connected

I trust my team leader.
- Not Connected: 5%
- Neutral: 21%
- Strongly Connected: 45%

My voice matters at work.
- Not Connected: 5%
- Neutral: 18%
- Strongly Connected: 39%

I feel completely accepted at work.
- Not Connected: 3%
- Neutral: 21%
- Strongly Connected: 47%

I can trust my teammates to do what they say they are going to do.
- Not Connected: 4%
- Neutral: 19%
- Strongly Connected: 36%

I feel like an important part of the company.
- Not Connected: 5%
- Neutral: 18%
- Strongly Connected: 43%

My workplace is somewhere I feel I belong.
- Not Connected: 4%
- Neutral: 19%
- Strongly Connected: 49%

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