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Impact-Weighted Accounts Project Research Report

Abstract

Organizations create significant positive and negative impacts through their employment practices. This paper builds on the substantial body of research regarding job quality and impact measurement to present a framework for monetized analysis of employment impact. We identify and propose a framework for measuring the four most salient dimensions of impact for employees, including wage quality, career advancement, opportunity, and health and wellbeing, as well as two principle impacts, diversity and employment location, for the broader labor community. The framework and methodology for calculating employment impact-weighted accounting figures is applied to several large corporations, resulting in positive impacts that range between 25 and 249% of their EBITDA suggesting significant heterogeneity in employment practices across organizations. These results demonstrate the feasibility of calculating employment impact in monetary terms, and provide a foundation for future application across additional geographies and contexts.

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1. Introduction

Employment is fundamental to wellbeing (Tait, Padgett, and Baldwin, 1989; Bowling, 2010). This truth is so deeply engrained across cultures and communities that labor market characteristics such as unemployment rates, participation in informal and gig economies, and job loss from automation receive enormous focus from policy-makers, within the media, and in conversations among friends and family. Despite the fundamental importance of employment, the bulk of attention has been on the *quantity* of jobs created, marginalizing the importance of the *quality* of these jobs. Indicatively, while the world saw a reduction in global unemployment prior to the COVID-19 pandemic, indications of job quality improvement lag behind (International Labor Organization, 2019).

Simultaneously, the increasing importance of environmental, social, and governance (ESG) issues, and in particular the growing focus on the "S" in ESG, is accelerating demand for corporate strategies that create financial value through better employment practices (Neilan, 2020; Kotsantonis and Serafeim, 2019). Several organizations have established frameworks to improve employment practices and job quality (e.g. Good Jobs Institute), to hold organizations accountable for their impact on employees (e.g. Guiding Principles on Business and Human Rights) or to increase transparency regarding employment impact (e.g. Global Reporting Initiative).

We build upon these efforts with a focus on providing clarity to the definition and measurement of employment impact. First, we propose a unifying framework of employment impact, identifying four fundamental dimensions of high importance to employee outcomes: *wage quality*, *career advancement*, *opportunity*, and *health and wellbeing*. We additionally recognize organizational employment dimensions that affect the broader labor community and identify two areas (*diversity* and *location*) that provide a non-exhaustive illustration of this category of impact. Second, we provide methodologies for measuring each one of the dimensions in monetary terms using outcome rather than input based metrics, allowing for comparability and relevance within the decision-making context of business and investments. Impact monetization establishes common and intuitive metrics that can be meaningfully aggregated, as well as integrated within existing business analytic tools to facilitate simultaneous analysis of financial and social performance (Serafeim, et al., 2019).

Third, we apply our framework and methodologies to a leading multinational corporation, Intel, showing the feasibility of impact-weighted accounting measurements and their decision usefulness for multiple stakeholders. We chose Intel because of the high-quality disclosures provided by the company on the data needed according to our framework. Our analysis reveals a net positive US employment impact of $3.9 billion for Intel, or 27% of its US-based revenue and 59% of US EBITDA. The total impact on US employees is estimated at $5.8 billion while the impact on the labor community dimensions is ($1.9

billion).[1] Moreover, it identifies which dimensions generate or detract the most from employment impact, providing useful insights for business leaders that strive to make meaningful improvements to employment practices. To assess the framework's scalability, we calculate the total employment impact, excluding a few categories we could not source data, for three other leading corporations: Apple, Costco, and Merck. This analysis documents that employment impact varies significantly across firms reflecting the heterogeneity of human resource strategies.

Overall, the main contributions of our work is threefold: provide a framework for employment impact, design methodologies for calculating each dimension of employment impact and showcase their feasibility by applying those methodologies to four significant corporations. We note that we do not view our methodologies and analyses as final. Rather we view them through an evolutionary perspective: these methodologies and analyses will keep evolving much like accounting measurements have been evolving over centuries.

2. Employment Impact Framework

The impact of organizational employment practices is broad and multifaceted. Employment does not just influence a worker's life while they are at the workplace (i.e. through the safety of their physical environment, or the opportunities for personal and professional growth), but it follows the worker home in the form of wages, benefits, and transferable skills. Research indicates that perceived job quality is closely linked to employees' overall perceived quality of life, ranking even more important than total income or physical health (Rothwell and Crabtree, 2019). The decisions made by organizations regarding who they employ, the geographical footprint of their operations, and the quality of the jobs they provide have fundamental importance to local labor markets, socioeconomic outcomes of workers and their families, and macroeconomic health. This framework provides a foundation to measure the impact of employment on an organization's direct workforce, as well as an initial exploration of how firms impact the broader labor community. Future analyses may include additional dimensions and stakeholders.

A thorough review of existing literature suggests four primary elements of job quality that impact employees, as presented in **Exhibit 1** below. Together, these dimensions evaluate the quality of employment and its impact on employees' lives.[2] We further identify two of the most foundational impacts

[1] To calculate US EBITDA, we assume that the ratio of global EBITDA to US EBITDA is equal to the ratio of global revenue to US revenue (20%).

[2] An additional employee impact dimension, *subjective wellbeing*, is described in Appendix 1. Subjective wellbeing (sometimes referred to as employee engagement, satisfaction, or fulfillment) has a substantial impact on employees, however it is intrinsically connected to other key aspects of job quality and therefore is likely to double count the impacts monetized through the core IWA framework. It is presented as a Supplemental dimension of analysis that adds valuable insight, but should not be included in an organization's bottom line employment impact. Analysis of

of organizational employment practices that influence the broader labor community. The analysis of this category of impact is non-exhaustive. **Exhibit 1** shows the relationship between employee and labor community impact dimensions, as well as a third stakeholder group representing broader societal impacts (that are not addressed as part of this analysis but may be included in future research).

Exhibit 1: Employment Impact Dimensions

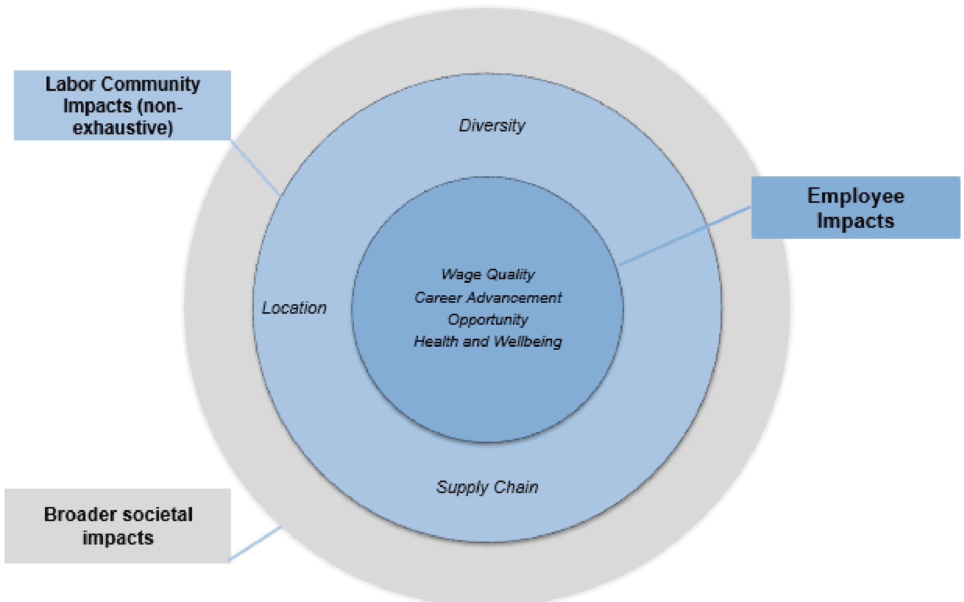

Exhibit 2 shows the targeted stakeholder and a brief description of each impact dimension. As human capital data management improves and innovates at the organization level, and disclosure regulations evolve we may see additional impact dimensions included in the framework. Organizations with a highly developed commitment to accounting for their social performance may conduct advanced analyses as part of their impact-weighted accounting statements.

subjective wellbeing provides critical data regarding job quality and is recommended as a parallel analysis to the dimensions described in this paper.

Exhibit 2: Descriptions of Employment Impact

Stakeholder	Impact Dimension	Description
Employee	**Wage Quality**	*Quality of wages provided, including living wage, marginal utility, and equity*
	Career Advancement	*Internal mobility resulting in increased earnings*
	Opportunity	*Employee demographics across job categories*
	Health and Wellbeing	*Impact of organization on employee health and wellbeing (including injuries and incidents, workplace culture, workplace wellbeing programs, and access to healthcare, paid sick leave, and family friendly workplace benefits). An analysis of employee subjective wellbeing is recommended in parallel.*
Labor Community	**Diversity**	*Employee demographics as compared to local population*
	Location	*Relative impact of employment based on local employment levels*

3. Methodology

The methodology to establish the employment impact-weighted accounting framework was grounded in the design principles for impact-weighted accounting (Serafeim, et al., 2019). We established a *source of impact* (the organization) and a targeted *stakeholder* (the employee and the broader labor community). *Specificity* guided us towards clear and consistent metrics for measurement. Finally, *monetization* of each dimension ensured that impact was expressed as currency that can be clearly compared and easily digested by decision-makers in business. We further applied principles established by the IWAI Product Impact Framework, which is grounded in *consistency, first-order effects, incentive alignment, best-in-class benchmarking, and conservatism* (Serafeim and Trinh, 2020).[3] The application of these principles is described below.

Building on these principles, our methodology followed three steps: identification of the most important factors influencing job quality, establishment of a best-in-class benchmark, and development of

[3] The Product Impact Framework and the Employment Impact Framework use the same set of 5 foundational principles, however they have distinct targeted stakeholders and therefore require different dimensions of analysis. For example, a product has a first-order effect on the environment based on recyclability, which is not a relevant dimension for employment analysis. Similarly, employers have a first-order effect on employees through career advancement, which does not apply to a product or service.

the monetization pathway. Step One, identification of the employment-impact framework dimensions, included an extensive literature review and selected expert interviews regarding labor outcomes, job quality, and corporate human capital disclosure. Our decision process for inclusion asked the following questions: *Is the impact widely and consistently recognized and valued by employees across geographies, sectors, and industries?* The answer to this question led us to include the dimension of *Wage Quality,* while excluding a more narrow analysis such as whether or not a company has an Employee Stock Ownership Plan (which would only apply to publicly traded companies). Next, we asked: *Is this a first-order effect?* The answer to this question distinguished between accounting for the impact on each employee's own health through access to a high-quality Health and Wellbeing (HWB) program, while excluding the impact on the health of their families or communities that could be influenced through the avoidance of second-hand smoke if that same HWB program had an effective tobacco cessation component. While we do not discount the importance of second-order effects, the causal mechanisms behind these are far less clear, and are thus misaligned with our core design principles. Similarly, we excluded any measurement of impacts on employees within a company's supply chain.[4] These guiding questions led us to identify impacts that can be broadly applied (ensuring scale) and clearly attributed to organizations.

The next step after finalizing our framework dimensions was to identify a best-in-class benchmark. During this process, we asked ourselves the following guiding questions: *Is our benchmark aligned with the best possible incentives?* The answer to this question led us to apply the living as the best-in-class benchmark for our *wage quality* dimension, rather than including a lower bar such as the local minimum wage set by legislation. Similarly, we benchmark workforce demographics against local population demographics, despite the more common practice among employers to use a subset of the population (such as those with a 4-year college degree) to produce a more favorable figure for employee diversity. *Incentive alignment* tests whether the framework is incentivizing behavior that drives positive social and environmental impact, while rigorously applying a *best-in-class* benchmark prevents the framework from reinforcing an unwanted average (Serafeim and Trinh, 2020).

Finally, we constructed and tested a monetization methodology for each dimension. There are numerous benefits to impact monetization, including the use of a common language for decision-making and increased ability for comparison across organizations and types of impact (Fischer, 2020). To arrive at a monetary value for each impact dimension, we analyzed literature to determine whether there was an

[4] Although companies, especially large companies, can exhibit pressure on their suppliers that may ultimately change their suppliers own practices (Thorlakson, et al., 2018), the IWAI employment framework is designed for application to each company directly in order to ensure attribution and completeness. Therefore, if a company's supplier pays its employees below a living wage, this negative impact will be captured in the impact-weighted accounting statement of the supplier. The same is true of all other dimensions in the IWAI employment framework. We are exploring a process to attribute a percentage of supplier impact based on the percentage of sales to the firm.

existing valuation for the impact dimension. For example, a study regarding the importance of health insurance in the United States determined a range of $1,093 to $3,290 in *health capital lost per year* for individuals without access to healthcare (Miller, et al., 2004). We apply these values, along with an appropriate benchmark, to calculate impact for the sub-dimension of healthcare within the Health and Wellbeing dimension. Dimensions that follow this methodology use a value transfer technique to arrive at monetization figure. Other dimensions may not have an existing monetization factor, in which case we constructed the methodology using conservative assumptions, most frequently using compensation costs (demonstrated through missing or lost wages) to convert impacts to dollar values. The monetization pathway for each dimension is explained in detail in Section 5.

4. Mapping

Once the dimensions of employment impact are identified, we map our hypothesized framework to existing efforts to identify alignment and gaps. We find substantial alignment with many key stakeholders, indicating the opportunity to build upon this growing body of work and the momentum regarding strengthened impact measurement. **Exhibit 3** below is illustrative of our mapping exercise, and is not meant to be an exhaustive evaluation of existing efforts to demonstrate employment impact. The monetization methodology applied to each dimension is rooted in the Impact Management Project principles of the five dimensions of impact: *What, Who, How Much, Contribution, and Risk.* In alignment with the important work of the Capitals Coalition, the IWAI employment framework is designed to provide actionable insights to decision-makers regarding how firms impact the creation or destruction of *human capital*, using the employee and broader labor community as our targeted stakeholders as discussed above.[5]

The employment impact framework is influenced by standard setters such as SASB, GRI, the World Economic Forum Common Metrics project, the Good Jobs Institute, the GIIN IRIS+ framework, and other leading organizations.[6] Due to the industry-specific construction of SASB standards, we do not include these metrics in Exhibit 3 below.

Strict adherence to the design principles described in Section 3 led us to exclude many metrics that may be familiar to the reader who is well-versed in ESG and impact management practices. For example, remaining focused on the targeted stakeholder, the employee, means that we do not account for the impact

[5] For more information on these foundational efforts, see www.impactmanagementproject.com and www.capitalscoalition.org.

[6] It is worth noting the considerable synergies within existing efforts, as well as the continuously evolving field of impact measurement and corporate disclosure. The IWAI makes every effort to be exhaustive in our review of the current landscape, as well as cognizant of our goal to create a scalable and highly adoptable methodology for impact-weighted accounting. The IWAI will build upon existing metrics to produce a standardized methodology using the language of financial analysis that is familiar to corporate leaders and investors. Our goal is to provide insights that enable decision-making based on rigorous, standardized analysis.

of employment on economic growth, which is a valuable measure of how organizations contribute to society. The focus on first-order effects led us to exclude union representation as an outcome that stands on its own, because while the right to free association is a critical lever for improving job quality, we understand it as an input that influences the dimensions we have identified in our framework (e.g. unions frequently having a strong influence on wage quality, employee benefits, and health and safety among other important issues). Metrics based on policy or procedure (e.g. the existence of a health and safety committee, or a human rights policy denouncing the use of child or forced labor) are also excluded, because they do not measure employee-level impact.

The Mapping Exercise below demonstrates the ideological synergies between the IWAI framework and a selected illustration of existing efforts. Critically, impact-weighted accounts are not meant to stand alone as the only indication of a company's social and environmental performance. Rather, just as financial accounts show a picture of organizational health resulting from strong leadership and effective organizational strategy (e.g. a competitive business model may be the underlying lever responsible for significant revenue growth in a given year), impact-weighted accounts are designed to do the same. Organizations must continue to adhere to the principles and practices that contribute to strong social and environmental performance, such as maintaining a responsible and representative governance structure. However, impact-weighted accounts are designed to capture the outcome of these responsible practices, rather than encapsulate every business activity as an independent metric. For this reason, the mapping exercise below shows alignment between key principles across organizations and standard setting bodies that influenced the selection and development of IWAI's impact dimensions.

Exhibit 3: Impact-Weighted Accounts Employment Framework Mapping Exercise

Stakeholder	Impact Dimension	*Sustainable Development Goals*	*WEF Common Metrics*	*Good Jobs Institute*	*Global Reporting Initiative*	*GIIN IRIS+*	*SASB* *Example from Manufacturing Industry*
Employee	**Wage Quality**	*SDG 1: No poverty* *SDG 2: Zero hunger*	*Expanded: living wage* *Core: gender pay equality*	*Basic Needs: Pay, Schedules*	*GRI 102.35 Remuneration policies* *GRI 102.8: total number of employees by type, gender* *GRI 405-2: Ratio of salary and remuneration to women & men*	*Average Non-Salaried Wage (OI8791), Employees: Minimum Wage (OI5858), Temporary Employee Wages (OI4202)* *'Gender Wage Equity (OI1855),* *Wage Equity (OI1582),* *Wage Premium (OI9767)*	*TC-ES-320a.2 Labor Conditions* *3.1 Labor provisions, including criteria focused on freely chosen employment, child labor avoidance, working hours, wage & benefits, humane treatment, non-discrimination, and freedom of association.*
	Career Advancement	*SDG 5: Gender Equality* *SDG 10: Reduced Inequalities*	*Core: training hours, training expenditure*	*Basic Needs: Career Path*	*'GRI 401-1: New employee hires and employee turnover*	*Gender Ratio of Promotions (PI9467), Women's Career Advancement Initiative (OD4232),* *Employees Promoted: Total (OI6995), Employees Promoted: Female (OI8646),* *'Employee Involuntary Turnover Rate (OI3989),* *Employee Voluntary Turnover Rate (OI1638)*	
	Opportunity	*SDG 10: Reduced Inequalities*	*Core: gender pay equality*	*Higher needs: personal growth*	*GRI 406: Non-discrimination*	*Full-time Employees: Female Managers (OI1571),* *Full-time Employees: Managers with Disabilities (OI8292),* *Full-time Employees: Minorities/Previously Excluded Managers (OI3140,* *Investment Committee Members: Female (OI8709)*	
	Health and Wellbeing	*SDG 3: Good health and wellbeing* *SDG 10: Reduced Inequalities*	*Core: indicent rate* *Expanded: % of employees in best practice health programs*	*Basic Needs: Security and safety* *Basic Needs: Benefits*	*GRI 403: Occupational Health and Safety* *'GRI 406-1: Incidents of discrimination*	*Occupational Fatalities (OI6525), Occupational Injuries (OI3757)* *'Healthcare Benefits Participants (OI4061),* *Healthcare Benefits Premium Covered (OI1503)* *'Employment Benefits (OI2742)* *Flexible Work Arrangements (OI7983)*	*TC-ES-320a.1 Labor Conditions* *1.1 The entity shall disclose its total recordable incident rate (TRIR) for work-related injuries and illnesses.* *3.2 Health and safety provisions, including criteria focused on occupational safety, emergency preparedness, occupational injury and illness, industrial hygiene, physically demanding work, and dormitory and canteen operations.*
	Subjective Wellbeing (Parallel Analysis)	*SDG 8: Decent work and economic growth*	*Expanded: freedom of association* *Expanded: discrimination and human rights grievances*	*Higher needs: meaningfulness, achievement*	*GRI 407: Freedom of Association*	*Employee Feedback System (OI3601),* *Worker Freedom of Association Policy (OI4364)*	
Labor Community	**Diversity**	*SDG 5: Gender Equality* *SDG 10: Reduced Inequalities*	*Core: gender pay equality*	*Higher needs: belonging*	*GRI 405-1: Diversity of (governance bodies and) employees*	*Full-time Employees: Female (OI6213), Full-time Employees: Minorities/Previously Excluded (OI8147)*	
	Location	*SDG 10: Reduced Inequalities* *SDG 8: Decent work and economic growth*			*GRI 102-7.1.2.3.3: total number of employees by country or region*	*Permanent Employees: Low Income Areas (OI8266)*	

5. Employment Impact-Weighted Accounting: Dimension Analysis

Having developed an employment impact measurement framework, we test the methodology on one company. Testing the framework allows for identification of blind spots, a rigorous assessment of its applicability, and the design of precise measurement techniques for each impact dimension. The difficulty in conducting this case study rests on the lack of corporate disclosure on many of the data items we need as part of our methodology. After searching for adequate disclosure across several companies we find one company that provides meaningful transparency on many of the dimensions we seek to measure. This organization is Intel, a technology company based in the United States that is classified as part of the Semiconductor industry. The company's US-based revenue in 2018 was over $14 billion, and it operated with 52,618 employees in the United States. Intel's stated purpose is to "create world-changing technology that enriches the lives of every person on earth."[7]

Intel is widely recognized by ratings agencies focused on sustainability and corporate responsibility. The company also publicly discloses significant detail regarding their employment practices. All employers in the United States are required to file an EEO-1 Report with the Equal Employment Opportunity Commission (EEOC), including the EEO-1 Component 2 which provides employee pay information broken down by race, sex, and ethnicity.[8] In 2018 Intel was the only company in the Russell 1000 Index (representing over 90% of U.S. market capitalization in the equity market) to disclose their wage data disaggregated by gender, race, and ethnicity.[9]

While there are other dimensions in which Intel data is not disclosed with similar granularity, the employee demographic and wage data is a substantial foundation for the IWAI analysis, and thus drove our team's decision to use Intel as an illustration of the employment impact framework in action. Below, we use Intel data to demonstrate how each dimension of the employment impact framework can be used for meaningful analysis. We detail the calculations used to monetize outcomes in each of our dimensions, including the best-in-class benchmarks that are applied throughout the framework. The employment impact for Intel in 2018 is summarized in Table 1 below. The following sub-sections of this chapter detail the rationale for inclusion of each dimension, the monetization methodology, and the application to Intel as a case study.

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[7] For additional information on Intel, including their primary business units, financials, and company values, please visit www.intel.com.

[8] Throughout this paper we use race and ethnicity terms as defined by the EEOC. For more information, see: https://www.eeoc.gov/employers/eeo-1-survey/eeo-1-instruction-booklet

[9] Intel's 2017 and 2018 EEO-1 Pay Data disclosure is available here: https://www.intel.com/content/dam/www/public/us/en/documents/corporate-information/2017-2018-eeo-1-pay-disclosure-report.pdf

Table 1: Intel Employment Impact 2018

Dimension	Impact		% Revenue	% EBITDA	% Salaries
Employee Impact					
Wage Quality	$	6,503,438,571	45.47%	98.97%	88.92%
Career Advancement	$	(48,980,821)	-0.34%	-0.75%	-0.67%
Opportunity	$	(415,218,670)	-2.90%	-6.32%	-5.68%
Health and Wellbeing	$	(263,223,199)	-1.84%	-4.01%	-3.60%
Subtotal	**$**	**5,776,015,881**	**40.38%**	**87.90%**	**78.98%**
Labor Community Impact					
Diversity	$	(2,319,192,138)	-16.21%	-35.29%	-31.71%
Location	$	401,391,204	2.81%	6.11%	5.49%
Subtotal	**$**	**(1,917,800,935)**	**-13.41%**	**-29.19%**	**-26.22%**
Total Impact	**$**	**3,858,214,947**	**26.97%**	**58.71%**	**52.76%**

Employee Impacts

The following four dimensions (*wage quality, career advancement, opportunity, and health and wellbeing)* demonstrate organizational impact on its current workforce.

A. Wage Quality

Contribution to Employment Impact

Wage quality is a global issue with deep implications for addressing poverty and inequality around the world, while income is a widely accepted social determinant of health outcomes (Bravemen and Gottlieb, 2014; Vionnet and Haut, 2018). The principle of fair wages was established as a basic human right by the United Nations and the International Labor Organization, and is enshrined by standard-setters such as the Business and Human Rights Coalition, SASB, GRI, and the GIIN. Estimates of the total number of people working below the living wage globally are difficult to ascertain due to the highly varied nature of labor markets across geographies. In 2018, the World Bank estimated that half of the global population was living on less than $5.50 per day, which is the poverty-level standard in upper-middle income countries, meaning 3.4 billion people earned insufficient income to meet their basic needs (World Bank, 2018). Substantial wage quality disparities exist both across geographical regions and demographic groups (ILO, 2020). In 2019, the average living wage – the income needed for basic needs to be met with financial independence – in the U.S. for a family of four (two children and two working adults) was $16.54 per day, or $68,808 annually,[10] roughly $5,000 greater than the annual median household income.[11] The federal minimum wage in the US has been stagnant at $7.25 since 2009. In 2019, 1.6 million hourly workers were paid at or below

[10] MIT Living Wage Calculator is available at: https://livingwage.mit.edu/.
[11] Federal Research Bank of St. Louis. Real Median Household Income in the United Stated. Available at: https://fred.stlouisfed.org/series/MEHOINUSA672N.

the federal minimum wage.[12] While the minimum wage varies greatly across states and even within certain cities (up to $15), a disparity remains between the living wage and the legal minimum wage.

Wages are not only frequently below livable standards; growth is stagnant, and wage inequality has grown substantially. Globally, workers in the top decile of labor income earned $7,475 per person per month (PPP) in 2017, while those in the bottom decile earned $22 PPP (ILO, 2019). This gap is wider in poorer countries, meaning the most vulnerable workers earning the lowest wages are also facing the highest levels of inequality (ILO, 2019). In the US, minority groups are more likely to be paid poverty-level wages than White employees, with Black workers being 1.5 times more likely and Hispanic workers being two times as likely (Economic Policy Institute, 2018).

Despite the fundamental importance of earned income, only 54% of employees in the United States were satisfied with their current wages in a 2019 study (Rothwell and Crabtree, 2019). High levels of wage dissatisfaction are not surprising considering poor wage growth and rising inequality. In the United States, productivity rose 96.7% from 1948 to 1973 and hourly compensation rose 91.3% in the same period. However, from 1973 to 2014 productivity increased 72.4%, yet hourly compensation only rose by 9.2% (Bivens and Mishel, 2015). Moreover, the effects of this decoupling were not evenly distributed across the population. Between 1976 and 2006, real income for the bottom income quintile rose $900 (6.3%), while real income rose $76,500 (79.9%) for the top quintile and $745,100 (232.0%) for the top 1% (Wisman, 2013). The income share held by the top 0.01% income share has reached 6%, surpassing the historic levels reached just prior to the Great Depression (Saez, 2018).

In addition to the foundational importance of the living wage, organizations create varied impact through the scale of their workforce. The intrinsic value of employment is corroborated through extensive and varied fields of research, including the profound negative impact of unemployment on life satisfaction (Blanchflower and Oswald, 2004; Clark and Oswald, 1994; Young, 2012). As wages increase, there exists an inflection point at which the incremental impact received from every additional dollar paid in salary begins to decrease. Research suggests the marginal utility of income decreases as income increases (Layard et al., 2008; Jebb et al., 2018; Diener et al., 1993), and in some cases show no relationship (Easterlin, 2005) particularly in the context of higher incomes (Frey and Stutzer, 2010). By providing a method of differentiating the impact of $1,000,000 in net wages paid to ten employees and one employee, the marginal impact of income rewards firms for employing a greater number of employees and provides a measure of the intrinsic value of employment that appears to exist beyond the nominal wage paid.

Wage quality can be vastly different for employees within the same firm, and structural inequalities are often reinforced by pay inequity. A wealth of data demonstrates that women earn lower wages than their

[12] U.S. Bureau of Labor Statistics. Characteristics of minimum wage workers, 2019. April 2020. Available at: https://www.bls.gov/opub/reports/minimum-wage/2019/home.htm.

male colleagues performing equal work (Blau and Kahn, 2017), often due to lower initial starting salary offers for identical positions (Moss-Racusin, et al., 2012). The unexplained gender pay gap is used by economists to demonstrate the impact of discrimination on the pay differential between male and female workers in research that controls for factors such as race, education, experience, union status, and region (Blau and Kahn, 2017). This figure declined from 49% in 1980 to 38% in 2010 (Blau and Kahn, 2017). Racial wage inequalities also exist, including within-occupation differences that are found to increase in higher-earning occupations (Grodsky and Pager, 2001). In the United States, the unexplained variation in the wage disparity between White and Black workers increased from 1979 – 2016 between both male and female workers (Daly et al., 2017). Due to these persisting disparities, we include a measure of the controlled wage gap by comparing the salaries of men and women at equivalent job levels.[13]

Currently, there is highly varied and vastly insufficient data regarding each of the three components of the *wage quality* analysis. Firms frequently report the average salary paid at their organization, which provides limited insight into whether there are portions of the workforce earning below the living wage. Consumer and investor actions have recently led to an increase of disclosure of the CEO pay gap, which provides a very limited view of potential wage inequality and incentive misalignment at firms (Rouen, 2020) but does not allow for the comprehensive analysis of wage impact that is possible through analysis of the wage utility within a company. Finally, there is increased pressure to disclose pay equity statistics, but the use of average salary figures and the lack of standardized metrics leads to low quality data with limited value for application and comparison.

Monetization Methodology

The monetization method for *wage quality* impact uses a compensation cost approach to measure the quality of wages paid by an organization. Benchmarking at the living wage incentives firms to pay salaries that are at least equivalent to the living wage.[14] The marginal impact of income incentivizes firms to focus on the wages paid to mid- and low-level employees, the portion of the population that has been historically disenfranchised from the gains of economic growth. Appendix 2 describes the marginal impact of income function and its application to *wage quality* impact in detail. The principle of pay equity promotes equal pay for equal work. Appendix 2 shows the wage equity calculations.

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[13] As opposed to the controlled wage gap, the uncontrolled wage gap measures the difference in male and female salaries across all jobs. The *opportunity* dimension addresses this wage gap because an explanatory factor of this gap is that women are less likely to hold top management and high paying positions than men.

[14] The living wage is determined from the MIT Living Wage Calculator, which provides detailed living wage data for all U.S. counties and metropolitan statistical areas. MIT Living Wage Calculator is available at: https://livingwage.mit.edu/.

The following steps describe the *wage quality* monetization process:

A1) Determine the total unadjusted salaries paid by the firm:[15]

*Total unadjusted salaries paid = Sum of (Number of employees in each salary band * Average salary in band)*

A2) Determine the appropriate annualized living wage for employee location $_j$. We use a conservative estimate from the MIT Living Wage Calculator assuming 2 working adults and 2 children in each household.

*Annualized Living Wage = Hourly Living Wage * 2080 working hours*

A3) Determine the total wages paid below living wage:

*Wages paid below living wage = Number of employees earning less than local living wage * Actual salaries paid*

A4) Calculate the living wage adjusted salaries paid by subtracting the total amount of wages paid by the firm that are below the annualized living wage (3) and subtract from total wages paid (1).

Livable wage adjusted salaries paid = Total wages paid (A1) – Wages paid below living wage (A3)

A5) Determine a continuous function that describes the decreasing marginal impact of income (see Appendix 2)

A6) Pass all wages through the marginal impact of income function

A7) Sum all resulting values to produce the utility adjusted net wages

A8) Identify the number of employees in each race and ethnic group disaggregated by gender (hereafter referred to simply as "group") in occupation category $_l$

A9) Determine the average salary for employees for each group in occupation category $_l$

Average salary for group = Total salaries paid to group $_j$ */ Number of employees in group* $_j$

A10) For each occupation category *l*, calculate the difference between the average salary paid to White male employees and minority group $_j$ employees, and multiply the resulting value by (8) to determine the per-group wage gap:

Per-group wage gap = (Average salary paid to White males in occupation category $_l$ *– Average salary paid to group* $_j$ *in occupation category* $_l$ *) * Number of employees in group* $_j$ *in occupation category* $_l$

A11) Determine the total **wage equity impact:**

Total wage equity impact = Sum of per-group wage gaps (A10)

A12) Determine the **equity adjusted salaries:**

[15] There are multiple ways to obtain this data. We use the EEO-1 Component 2 data in the case study below to develop an estimated total salary amount based on the number of employees and average salary in each band.

Equity adjusted salaries = Utility-adjusted wages paid (A7) – Wage equity impact (A11)

A13) Determine total **wage quality impact:**

Wage quality impact = Unadjusted salaries (A1) – Salaries below living wage (A3) – Marginal Utility Adjustment (A7) – Wage Equity Impact (A11)

Intel Case Study

Intel's exemplary disclosure of wage data, as discussed previously, facilitates the analysis in this dimension. We use the workforce demographic and pay disclosures found in Intel's EEO-1 Component 2 Report to showcase the wage impact monetization methodology. Intel's 2018 EEO-1 Component 2 Report lists the number of employees whose salaries are within set salary bands for each EEOC job category. We determine the total number of employees within each salary band and then use the middle value of the wage bracket to calculate the total estimated salaries paid by Intel.[16] Total salaries are then adjusted by the living wage and the marginal impact of income.

An average living wage of $38,345 is calculated for Intel. This value is the weighted average of the living wages based on the geographic distribution of Intel's employees. We apply the living wage for a family of four (with two working adults) for each county in which Intel discloses the number of employees (96% of domestic labor force disclosed) and create a weighted average based on the number of employees in each county.[17] All average salaries below this are considered to have zero impact and removed. All resulting non-zero average salaries are then adjusted per the marginal impact of income as described in Appendix 2.

The EEO-1 Component 2 Report provides salary and job level data by race/ethnicity and gender groups. We use these data to calculate the wage equity component of wage impact. Within occupation categories, we calculate the average salary for each group. We then subtract the average salary for each group from the average salary of White male employees. If the resulting value is non-negative (i.e. White males on average have a higher salary), we multiply this value by the number of group employees in each group within the respective occupation category to produce a monetized impact value. The sum of the resulting products is the wage equity contribution to the wage impact dimension. Moreover, this is a negative impact value as it is a penalty against the adjusted total salaries value. We find the total negative impact of wage equity to be ($465 million). Asian women have the largest negative impact and account for over 30% of the total impact. The next largest groups – White women followed by Asian men – both have

[16] Intel does not provide information on the total wages paid in different geographies.

[17] See the *location* dimension for a more detailed explanation of Intel's employee geographic disclosures.

negative impacts less than half that of Asian women. Appendix 3 describes the negative impact from wage equity by occupation category and minority group.

As previously defined, *wage quality* impact is a measure of the total wages paid by an organization adjusted for a living wage benchmark, the marginal impact of income function, and wage equity within each occupation category. In this example, Intel is rewarded the $7.3 billion in estimated total wages paid. However, this value is reduced by average salaries paid below the living wage of $38,345 and scaled down by the marginal impact of income function. These adjustments result in a Utility-Adjusted Salaries value of $6.97 billion. Finally, based on our calculations there is a disparity between the average wages of White male employees and other employee groups, controlling for occupation categories. To compensate for this wage gap, the adjusted total salaries is reduced by total equity impact of $465 million. Therefore, the final *wage quality* impact value is $6.5 billion, as summarized below in Table 2.

Table 2: Intel Wage Quality Impact

Wage Quality Impact	
Total Unadjusted Salaries	$7,313,439,500
Salaries Below Living Wage	($43,190,560)
Living Wage Adjusted Salaries	$7,270,248,940
Marginal Utility Adjustment	($301,322,044)
Utility-adjusted Salaries	$6,968,926,896
Equity disparity	($465,488,325)
Equity-adjusted Salaries	$6,503,438,571
Wage Quality Impact	**$6,503,438,571**

B. Career Advancement

Contribution to Employment Impact

Formal and informal learning opportunities in the workplace are considered a core element of job quality, according to the OECD Job Quality Framework (Cazes et al, 2015). At the same time, the world is facing widening skills gaps and an amplified need for new types of workforce development (OECD, 2019, OECD Employment Outlook 2019: The future of work). Many companies offer training and skills development opportunities to their employees, but their effectiveness is measured primarily by inputs (such as dollars spent on training) rather than outcomes, such as worker promotions or increased earnings based on professional development (Kotsantonis and Serafeim 2020).

Workers across all income levels agree on the importance and value of employer-provided career opportunities (Rothwell and Crabtree, 2019). Career development is consistently valued highly by workers.

In a study of 43 factors affecting job satisfaction (including compensation, corporate culture, and job-specific training), career advancement opportunities *within their own organization* were rated in the top 10 factors rated as "very important" (SHRM, 2016). While employees value professional development through formal or informal training, opportunities for advancement within one's own organization is rated higher than job-specific training as well as general career development opportunities, indicating they are most interested in growth that is recognized and rewarded by their own firm (SHRM, 2016).

Despite the clear importance of career advancement opportunities to workers, many employers are falling short. In a 2019 study conducted in the United States, 74% of workers rated career advancement opportunities as important but only 48% reported they were satisfied with their access to these opportunities (Rothwell and Crabtree, 2019). Furthermore, there is significant disparity in access to career advancement opportunities. Across OECD countries, 60% of high-skill workers participate in some form of training, compared to only 20% of low-skill workers (OECD, 2020: OECD Employment Outlook 2019: The Future of Work). Workers earning within the top 10% of wages were nearly two times more likely than those in the bottom 20% of earnings to express satisfaction with career advancement opportunities (Rothwell and Crabtree, 2019). Women and under-represented minorities are promoted at a slower rate, despite equivalent qualifications (Silva, 2010). Women are also less likely than men to have mentors who act as sponsors that advocate and fight for their mentees promotion to the next level (Ibarra et al., 2010).

The need for investment in skill development is amplified by the rapid changes underway in the global economy. McKinsey Global Institute estimates that automation could displace 400 million workers (or 15% of global FTEs) by 2030, with up to 800 million workers at risk if the adoption of automation is accelerated. These workers will require re-skilling, and in some cases will need to change occupational categories altogether, to avoid the risk of unemployment and/or underemployment (McKinsey, 2017). In the United States, a recent study suggests up to 25% of jobs are at risk of automation (Muro, et al., 2019).This trend is likely to exacerbate existing inequalities, with the risk of automation disproportionately affecting low-wage, low-skilled workers (Kotsantonis and Serafeim, 2020). [18]

In the US, skill needs are growing in traditionally low and middle-skills jobs (Holzer, 2015), with the latter expected to increase as baby boomers transition into retirement (Kochan, 2012). Simultaneously, employers report difficulty filling middle-skills positions while reported on-the-job training is in decline in the US (Holzer, et al. 2015), and globally up to 40% of employers report challenges filling jobs due to job

[18] Of course, automation is not the only labor market shift with profound implications for workers. The aging population will increase the need for healthcare workers, the impact of the climate crisis and the shift to a greener economy will create employment demands, and the "marketization" of previously unpaid domestic work (such as childcare) are among some of the most prominent trends predicted to increase labor demand (Manyika et al, 2017). Some analyses predict that not only will occupational categories shift in the coming decade, but the type of skills in higher demand will be interpersonal and people-management skills that are more difficult to automate (Bakhshi, et al., 2017). This growth will require development of skills and knowledge to keep pace.

shortages (Bakhshi, et al., 2017). Companies not only have the ability to address their own skills shortages directly through on-the-job training and development opportunities (McKinsey, 2017), they are also best positioned to fill middle-skills gaps by promoting career pathways rather than developing isolated skill-sets (Kochan, et al., 2012). Firms also have an important role to play in enabling adult learning through interaction with colleagues, promoting individual agency and decision-making, and fostering a culture of learning and development (World Economic Forum, 2017).

The diversity of training and learning modalities that occur in the workplace make it critical to measure not just inputs (such as dollars spent on formal training), but outcomes that influence employees directly. A leading example is the common reporting metric of percentage of employees participating in training. While this activity has been shown to have a strong influence on productivity (a measure of primary concern to employers), it has a much weaker influence on wage growth (a measure that is arguably of much higher concern to employees, rather than employers) (Konings and Vanormelingen, 2015 and Dearden, et al., 2016). Successful career advancement initiatives result in increased lifetime earnings for employees (Kochan, 2012), and can be applied in new contexts (World Economic Forum, 2017). Due to the value placed on internal advancement opportunities by employees (SHRM 2016) and the importance of demonstrating outcomes rather than simply inputs, our framework measures the increased earnings due to internal mobility. The methodology is described below.

Monetization Methodology

The following steps describe the core process of measuring *career advancement* impact based on data disclosed to the EEOC. Similar calculations are possible using employee data obtained from firm human resource records. The monetization technique applied uses compensation costs in the form of foregone wages.

B1)Identify the following company data:

a. Total number of employees ($Year_{t,}$ $Year_{t-1},$)
b. Turnover rate ($Year_{t,}$ $Year_{t-1}$)
c. Total number of employees by occupational category ($Year_{t,}$ $Year_{t-1}$)
d. Average salary by occupational category ($Year_{t}$)
e. New hires by occupational category
f. Positions filled by internal candidates

B2) Determine the Total Number of Positions filled in the year (by occupational category). If not available from company records, it can be calculated as follows:

Replacement positions filled = Turnover rate in $Year_t$ *(B1.b) * Number of employees in* $Year_{t-1}$ *(B1.a)*

New positions created and filled in $Year_t$ = Change in total number of employees from $Year_{t-1}$ to $Year_{t}$,

Total Positions Filled = Replacement positions filled + New positions filled

B3) Determine the number of positions filled from external hire (by occupational category).

B4) Determine the number of positions filled internally (by occupational category).

Number of positions filled internally = Total positions filled (B2) – Number of positions filled from external hire (B3)

B5) Determine the **Internal Mobility Rate** (by occupational category)

Internal Mobility Rate = Number of positions filled internally (B4) / Total Positions Filled (B2)

B6) Identify the average % salary increase with internal promotion at the company, or use publicly available data as a proxy.[19] In the example below, we use the average increase with promotion for the Manufacturing Industry of 14.2% (Yildirmaz, et al., 2019).

B7) Identify the category-level internal mobility rate best-in-class benchmark. In this example, we use a benchmark of 54% internal mobility (Bidwell, 2014). Benchmarks are likely to increase with higher-level positions (Yildirmaz, et al., 2019).

B8) Determine the **career advancement impact** at the firm by calculating the difference between the internal mobility benchmark and actual internal mobility rate and multiplying the difference by the average salary increase due to promotion at the firm and the number of positions filled in each category. Add the impact for each category to determine the total *career advancement* impact.

*Career advancement impact = (Company internal mobility rate (B5) – Benchmark internal mobility rate (B7)) * (Average salary (B1.d) * average salary % increase with promotion (68) * (Total Positions Filled (B2))*

Intel Case Study

In 2018, we calculate that Intel's final *career advancement impact* is ($49 million). This calculation is conducted at the aggregate company level, using the data as presented in Table 3 and described above. Intel's negative career advancement impact shows the missed human capital development opportunity within the firm. Only 15% of positions filled by the company in 2018 were filled by internal candidates. Critically, this analysis can and should be conducted at a disaggregated level with available data, showing results within gender, race, and ethnic groups.

[19] While not all internal mobility results in salary increase, we use this figure to include the value of career advancement, knowledge, and skill development that occurs as employees are given new opportunities. This approach is consistent with the OECD Future of Work analysis which uses wages to proxy for skills development (OECD Employment Outlook, 2019). Companies can ensure value is accurately captured by using payroll and recruitment data regarding employee role changes.

Table 3: Intel Career Advancement Impact

	Company Data	2016	2017	2018	Notes/Assumptions
A	Number of employees (total)	50,263	51,267	52,618	
B	Company growth		2%	3%	
C	Undesired turnover (global)	3.9%	4.1%	4.8%	Source: Intel CSR Report, 2018
D	Turnover rate*	8.9%	9.1%	9.8%	Intel hire and exit report, 2016 (8909). Assume same growth as (C)
E	Replacement positions			5,049	Employees 2017 * Turnover 2018
F	New positions created			1,351	Employees 2018 - Employees 2017
G	Total positions filled			6,400	E + F
H	New employees hired (US)	5,183	5,287	5,426	Intel hire and exit report 2016 (5183). Assume same growth as (B)
I	Internal promotions/transfers			974	G - H
J	Internal mobility rate			15%	I / G
K	Internal mobility vs. benchmark			-39%	Bidwell, 2014 rate of internal promotion (54%)
L	Surplus/Gap internal mobility (employees)			(2,482)	G * K
M	Average increase with promotion/transfer			14%	Assume internal mobility is rewarded by salary increase
N	Average salary			138,991	
O	**Career Advancement Impact**			**($48,980,821)**	L * M * N

C. Opportunity

Contribution to Employment Impact

Across the world, women and minorities are most often relegated to poor quality, low-wage work (Rothwell and Crabtree, 2019; ILO, 2017). The United States formal labor force has become increasingly diverse over the past decades as participation increased among women and racial and ethnic minority groups (Toossi, 2002; Burns et al, 2012). However, despite outnumbering Non-Hispanic or Latino White men by a margin of three to one within the labor force,[20] women and minorities are disproportionately under-represented across occupational categories. In 2012, amongst all Fortune 500 companies, only 25 had non-White CEOs and 25 had women CEOs.[21] By 2019, the number of female Fortune 500 CEOs had only risen to 33.[22] Despite improvements over the past decade (Deloitte, 2018), diversity across firm hierarchy is still lacking as managerial and the highest paying positions are disproportionately held by White men (Tomaskovic-Devery and Hoyt, 2019).[23] Occupational segregation along gender lines is present in labor markets across the world, and is the largest contributor to the wage gap between men and women (Cortes, 2018).

Bias begins at the point of recruitment and hiring, when occupational sorting funnels employees into different roles at different rates, despite applicants having equal qualifications (Silva, 2010). The result of this (often unconscious) bias is a disproportionate number of women and minorities in support, service, non-technical, and non-management roles. These positions earn lower wages, and are more likely to be hourly or part-time compared to positions in other occupational categories (and therefore may lack access to benefits). Low wages have a "scarring effect" similar to unemployment; despite advancement, lower starting wages inhibit these employees for the rest of their careers (Penner, 2008). In a 2001 study of labor outcomes among Black and White men, 20% of the race gap in earnings was attributed to occupational sorting of Black employees into lower-wage positions (when controlling for all other individual characteristics) (Grodsky and Pager, 2001).

Occupational sorting and unconscious bias negatively impact employees across each of the other employment dimensions discussed in this paper. The impact manifests by stifling salaries, limiting access to non-wage benefits, slowing career advancement, disproportionately exposing low-wage and minority

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[20] United States Bureau of Labor Statistics. Labor force statistics from the current population survey. Available at: https://www.bls.gov/cps/demographics.htm.

[21] Diversity, Inc. staff. 2012. Where's the diversity in Fortune 500 CEOs? Available at: http://www.diversityinc.com/diversity-facts/wheres-the-diversity-in-fortune-500-ceos/

[22] Fortune. 2019. The Fortune 500 has more diversity than ever before. Available at: https://fortune.com/2019/05/16/fortune-500-female-ceos/

[23] Tomaskovic-Devery and Hoyt (2019) collect data from the Equal Employment Opportunity Commission (EEOC) and tabulate the percent of each EEOC occupation category held by gender and race/ethnicity. White workers (normally driven by men) are disproportionately represented in all occupation categories associated with higher wages and career advancement opportunities (e.g. "executives", "managers", "professionals", etc.).

workers to health and safety risks, and contributing to decreased job satisfaction (Rothwell and Crabtree, 2019; Penner 2008). For female employees, some scholars argue that wage gaps are most substantially attributed to occupational sorting (hiring women for some roles and not for others), rather than other forms of discrimination (Penner 2008, Petersen and Morgan 1995; Fernandez and Weinberg, 1997).

Despite the requirement to file EEOC disclosures regarding gender, race, and ethnicity across occupational categories, very few companies public share this information. Those who do share information regarding opportunity at their firm often produce industry or firm-specific reports, for example demonstrating the percentage of women and minorities in technical roles.[24] A lack of standardization leaves room for misleading data, and inhibits opportunities for comparison and improvement.

Monetization Methodology

Our monetization process is underpinned by the tenet that a company's hierarchy should reflect the demographics of the company as a whole. Compensation cost (in the form of lost wages) is used to calculate impact. The impact calculation process first identifies two groups of employees – those in "high salary" positions and those in "average salary" positions. Occupation categories with the highest average salary are incrementally added to the "high salary" group until that group represents at least 10% of the total employee population.[25] All other employees are allocated to the "average salary" group. A weighted average salary for the "high salary" and "average salary" groups is calculated. Additionally, the demographic composition of each group is calculated. For each minority group, their percentage representation in the "high salary" group is subtracted by their representation in the "average salary" group to determine a standard "opportunity penalty" representing the wage differentials experienced by employees across the firm. This value is multiplied by the number of employees in the "average salary" group (total employees multiplied by 0.90) to determine the total opportunity gap across the firm.[26]

The *opportunity* dimension monetizes the impact of unequal access to employment within an organization, using the "high salary" group to represent firm hierarchy. As such, a large (negative) *opportunity* impact describes a firm where minority group employees predominantly hold lower salaried positions. Many firms with a proactive approach to improving opportunity within their organizations

[24] To illustrate differences in the approach to diversity reporting, see Facebook (https://diversity.fb.com/read-report/) and Citigroup (https://www.citigroup.com/citi/diversity/annualreport.htm).
[25] 10% is chosen as the threshold to ensure the "high salary" group is reflective of the highest paying positions in a company that are not exclusively in the executive and senior management categories. Future empirical research as more data become available will be used to reassess the 10% threshold to ensure it is reflective of a range of employment opportunities across the firm.
[26] Companies may find they can artificially reduce their negative *opportunity* impact by increasing the percentage of company employees in the "high salary" group, thus decreasing the employees in the "average salary" group. To ensure the opportunity penalty is reflective of the organization as a whole, we hold 90% of total employees as a constant across firms. This cap prevents this potential source of bias and promotes comparability across companies.

conduct analyses of representation across industry or company-specific occupational categories (for example, they may analyze the percentage of women in technical roles). This provides meaningful information for recruitment, hiring, and internal mobility. The IWAI framework presents a standardized approach to produce comparable figures across companies and industries, and is complementary to other analyses.

The following steps describe the core process of measuring *opportunity* impact:

C1) Identify the number of total number of employees at each occupational category$_l$

C2) Identify the number of employees in minority group $_j$ at occupational category $_l$

C3) Determine the average salary for each occupational category$_l$

C4) Determine the "high salary" group by incrementally adding the occupational categories with the highest remaining average salary until the "high salary" group accounts for at least 10% of total employees

C5) Allocate all occupational categories not in the "high salary" group to the "average salary" group

C6) Determine the percentage of employees in minority group$_j$ for the "high salary" and "average salary" group

C7) Determine the weighted average salary for the "high salary" and "average salary" groups

C8) Determine the **opportunity impact** for each minority group$_j$.[27]

*Opportunity impact for minority group $_j$ = (% of minority group$_j$ employees in "high salary" group - % of minority group$_j$ employees in "low salary" group) * (Total number of employees at firm * 90%) * (Average salary of "high salary" group – average salary of "low salary" group)*

C9) Repeat steps (C1) through (C8) for all minority groups and sum resulting values to determine the total *opportunity* impact

Opportunity impact = Sum of opportunity penalty (difference between "high salary" and "average salary" groups) for all minority groups within the organization

Intel Case Study

We use Intel's 2018 EEO-1 Component 2 Report data to calculate *opportunity* employment impact. Using the above described methodology, we calculate *opportunity* impact for each sex-race/ethnicity group as defined by the EEOC. The EEO-1 Component 2 Report provides seven occupational categories, as well as

[27] There is no impact for a surplus or over-representation of employees in a given group, therefore if *(% of minority group$_j$ employees in "high salary" group - % of minority group$_j$ employees in "low salary" group)* is greater than zero, zero impact is applied to the account.

their corresponding average salary levels. The steps described in the methodology above are repeated for each occupational category to determine the expected demographic representation.

In order to determine the occupational categories in the "high salary" group and "average salary" group, the average salaries of each of the seven occupational categories described in Intel's EEO-1 report are calculated. The Executive/Senior Officials & Managers category has the highest average salary ($208,000), followed by Sales Workers ($193,613) and First/Mid Officials & Managers ($190,010). These three occupational categories have the highest average salaries at Intel. Moreover, these occupational categories account for 0.1%, 1.3%, and 13% of all Intel employees, respectively. Executive/Senior Officials & Managers is first added to the "high salary" group, followed by Sales Workers. This brings the "high salary" group to 1.4% of all employees. First/Officials & Managers is next added which brings the "high salary" group to 14.4%. The "high salary" group now covers at least 10% of the total employees of the company.[28]

The weighted average salary for the "high salary" group is $190,458 and $130,315 for the "average salary" group. Therefore, the difference between these two values is used to monetize the representation gap between the "high salary" group and "average salary" group for each minority group.

Table 4 describes the *opportunity* impact for each gender-race/ethnicity group calculated using this methodology. All values represent negative impacts, as employees are negatively impacted by inequitable job category representation. Overall, the total *opportunity* impact for Intel in 2018 is ($415 million). Representation disparities between male and female employees are fairly even, resulting in a negative impact of $220 million for men and $195 million for females. The largest individual negative impacts are driven by Asian females ($174 million) and Asian men ($108 million). Notably, while Black men represent only 3.4% of total employees at Intel, they bear 9% of the total *opportunity* impact (a negative impact of $37 million out of the total $415 million). Asian men, on the other hand, face a very large *opportunity* impact ($108 million, and 26% of the total impact) that is proportional to their overall representation in the workforce (25.6% of total employees). Asian women are only 12.6% of total employees at Intel but carry 42% of the negative opportunity impact.

[28] Occupational categories should be added to the "high salary" group until 10% of total employees are accounted for within the group. However, companies should balance adhering to this benchmark with maintaining the "high salary" group as an accurate representation of the highest paying salaries. For example, consider a company where the two highest average salary occupational categories of the firm produce a "high salary" group that is 9% of the total employees of the firm. The occupational category with the next highest average salary represents 30% of total firm employees and has a significantly lower average salary than the occupational categories already included in the "high salary" group, In order to ensure the "high salary" group remains an accurate reflection of the high paying salaries, the company in question should not include the next occupation category and continue with a "high salary" group that is only 9% of total employees.

Table 4: Intel Opportunity Impact

	White	Black	NHPI	Asian	American Indian	Two+	Hispanic/Latino
Male							
Employees in “Average Salary" Positions (%)	33.9%	3.6%	0.2%	26.1%	0.6%	1.1%	7.3%
Employees in "High Salary" Positions (%)	44.4%	2.3%	0.2%	22.3%	0.5%	0.7%	5.2%
Net Male Impact	$0	($36,851,098)	($1,189,748)	($107,673,061)	($1,494,710)	($11,725,305)	($61,256,495)
Female							
Employees in "Average Salary" Positions (%)	9.5%	1.2%	0.1%	13.7%	0.2%	0.4%	2.3%
Employees in "High Salary" Positions (%)	13.5%	1.0%	0.0%	7.5%	0.2%	0.3%	1.9%
Net Female Impact	$0	($4,945,982)	($961,589)	($173,922,540)	($1,126,495)	($3,319,750)	($10,751,899)
Total Male Impact	($220,190,416)						
Total Female Impact	($195,028,254)						
Total Opportunity Impact	($415,218,670)						

D. Health and Wellbeing

Contribution to Employment Impact

Every job influences employee health, whether through the physical effects of the workplace, the benefits reaped through effective workplace health and wellbeing (HWB) programs (Goetzel, 2014), or the psychological weight of an unsafe environment (OECD, 2019). Health and safety risks take different forms in every occupation – frontline healthcare workers with insufficient personal protective equipment (PPE) to safely care for patients with COVID-19, the long-term deleterious effects of toxic air quality, or instances of gender-based harassment or violence.

There is growing momentum regarding the intrinsic connection between employment and health. For example, use of the Health Enhancement Research Organization (HERO) Health and Wellbeing Best Practice Scorecard has reached over 2,500 companies since the online tool launched in 2009. Results from the HERO scorecard allow companies to benchmark their progress against their peers, track progress over time, and contribute to academic research on the impact of corporate practices on employee health (Rosenbaum, et al 2020).). The expanded understanding of the connection between work and wellbeing is codified in the "Culture of Health" framework (COH), which argues that organizations impact health in four ways: through environmental health, community health, consumer health, and employee health (Quelch, 2016). At a global level, the OECD measures "job strain" as a risk factor for worker well-being (defined as the combination of excessive demands combined with insufficient resources) (Cazes, et al 2015). Better standardization and quality of metrics is critical to avoid what many have termed "health-washing" (promoting health without actually improving health), according to many experts working at the intersection of business and health (Serafeim, Rischbieth, and Koh 2020).

Health and wellbeing matters deeply to employees. In a 2017 analysis of the OECD Better Life Index, researchers found that Health Conditions had the largest impact on self-reported life satisfaction of respondents when compared to other factors (Tsurumi and Managi, 2017). These findings support earlier research in which health status requires the highest value to maintain life satisfaction, for example a 2008 study in which a decline in health from excellent to very poor is associated with a payment of GBP 480,000, significantly higher than the valuation of other factors such an unemployment and marital status (Powdthawee, 2008).

The most basic measurement of employee health is the incidence of illness and injury resulting from work, often referred to as occupational safety and health and enforced through agencies such as the ILO and state Departments of Labor. Due to the fundamental interconnectedness of employment and health, as well as the barriers many marginalized workers face in voicing concerns in the workplace, formally reported incidents likely reflect only a fraction of the impact of employment on health and safety.

Nevertheless, in 2019 the International Labor Organization (ILO) estimated that nearly 2.3 million workers around the world suffered injuries or diseases that originated in the workplace, while approximately 500 million others survived occupational accidents and illnesses (ILO, 2020, The enormous burden of poor working conditions). Workplace health and safety risks are disproportionately higher for low-income workers and minorities, and women suffer greater work-related physical and mental health outcomes (Seabury, et al., 2017; Campos-Serna, 2013). Although it is widely agreed that employers have a responsibility to protect employees' health and safety, many workers are forced to make decisions that prioritize their economic livelihoods over their wellbeing.

Incidents of harassment (whether sexual, physical, or non-physical) are vastly underrepresented in official statistics, with the United States EEOC reporting that less than 25% of cases are formally reported.[29] While the #MeToo movement arguably contributed to a reduction in the most extreme forms of sexual harassment, there was a subsequent increase in reports of more covert types of gender-based harassment (Keplinger, et al., 2019). Beyond the #MeToo movement, experts argue that the declining tolerance of obvert sexual and gender-based harassment is resulting in an increase in more subtle forms of discrimination, as evidenced by high rates of incivility and bullying (Sabbath, et al., 2018). In the United Kingdom, studies show as many as 3 out of 5 employees suffer mental health issues due to work or a work-related factor (Business in the Community, 2018).

Many argue that companies are not only responsible for protecting employee safety but also have a critical role to play in proactively managing and improving worker wellbeing through access to health services, and lifestyle and chronic disease management (Quelch, et al., 2016; Coalition for Inclusive Capitalism, 2019). Access to high quality healthcare is an essential part of employment quality with deep implications for worker wellbeing.[30] Lack of access to health insurance results in greater morbidity and premature mortality, and an overall loss of valuable health capital (Miller, et al., 2014). However, access is highly unequal. In the US, 78% of full-time workers say that their employer offers them health insurance,

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[29] EEOC, https://www.eeoc.gov/select-task-force-study-harassment-workplace.

[30] The universe of employer-provided benefits may include health and retirement insurance, paid sick leave, family leave, dependent care, retirement saving and financial planning, and professional and career development (Rothwell and Crabtree, 2019). While each are important to employees, we focus on healthcare, paid sick leave, and family friendly benefits and suggest additional measurement of other areas in the future. It is worth noting that significant differences in workplace benefits exist across the globe (Willis Towers Watson, 2017). For example, Estonia, Bulgaria, Japan, and Lithuania mandate over a year's worth of paid leave for new parents, whereas Australia, New Zealand, Switzerland, and Ireland require fewer than 10 weeks (Livingston and Thomas, 2019). With regards to sick leave, Australia, Germany, and Norway, among eight other countries, guarantee full pay for workers recovering from a five-day illness; on the other hand, the United States, Canada, and Japan have no national policy requiring employers to provide sick leave for workers (Heymann et al, 2009). The significant variation in provision of benefits highlights the importance of country specific benchmarks in assessing both the access and quality of benefits provided by companies.

only 34% of part-time workers say the same. Only 37% of workers in the bottom 20% income quintile had access to employer health insurance, compared to 90% of those in the mid-to-top income group (Rothwell and Crabtree, 2019).

Lifestyle and chronic disease management programs are regarded highly not only for providing cost-savings to employers and improving business performance metrics (such as productivity), but for directly improving employee health outcomes (Goetzel, 2014). Research shows that organizations that improve their internal COH scores have significant positive influence on employee health outcomes, including decreased risk for high body-mass index (BMI), high blood pressure, and improvements in alcohol use and nutrition habits (Henke, et al., 2019). The 2018 National Compensation survey in the US found that over 40% of private employers provide workplace wellbeing programs, however significant disparities exist across wage-levels and industries (Acosta et al, 2018). Large organizations are more likely to take action to improve lifestyle and chronic disease management (Acosta et al, 2018).

Employers further impact worker health through access to Paid Sick Leave. Evidence shows that that a lack of paid sick leave is associated with an increase in delayed care costs and lost wages (National Partnership, 2020). As with other important factors influencing employee health, 78% of full-time workers have access to paid sick leave or vacation, but that number drops to 33% for part-time workers (Pew Research Center, 2016). Disparities across wage levels also persist, with only 31% of individuals in the lowest income group reporting access to paid sick leave, compared to 81% in the mid-to-highest income group ((Rothwell and Crabtree, 2019). Employees report that healthcare/medical benefits, paid time off, and flexibility to balance life and work (for example, family friendly workplace practices) are considered among the three most important benefits to workers in the US (SHRM, 2016).

Finally, research shows that access to family friendly benefits, including fair scheduling, backup dependent care, and direct dependent care support, have a strong impact on labor force participation and earnings (Schochet, 2019). The absence of adequate gender-neutral family leave policies and childcare support contribute to both gender inequity and lost wages for caretakers (Schochet, 2019). Access to family friendly workplace benefits also vary widely by wage level. Among workers in the top wage quartile in the US, 21% have access to childcare support, compared to only 4% of workers in the lowest quartile (Bureau of Labor Statistics, 2019). The gap for flexible workplace policies is wider, at 21% of the top quartile and 1% of the bottom quartile (Bureau of Labor Statistics, 2019).

The monetization pathways for each Health and Wellbeing sub-dimension is described below. These sub-dimensions provide a meaningful starting point, and may be expanded upon and tailored for organizational and geographical context as appropriate.

Monetization Methodology

The steps below describe the core process of measuring Health and Wellbeing impact across six sub-dimensions:

1. *Safety (Injury and Illness)*
2. *Culture (Harassment and Incivility)*
3. *Healthcare*
4. *Chronic Disease and Lifestyle Management*
5. *Paid Sick Leave*
6. *Family Friendly Workplace*

While these analyses do not represent a comprehensive evaluation of how health and wellbeing is impacted by employment, they provide a meaningful start. Each sub-dimension uses both compensation cost and value transfer techniques for valuation.

Part One: Safety (Injury and Illness)

D1) Identify the annual incident rate. If available, disaggregate the incidents by injury (type) and illness. If disaggregated data is not available, use an appropriate proxy.

D2) Convert the incident rate into the number of incidents in the study year. In this example, we use the Occupational Health and Safety Administration Total Recordable Incident Rate (TRIR), which is calculated by multiplying the number of recordable cases by 200,000 and then dividing the product by the total labor hours in the company. We therefore multiply the incident rate by the total number of labor hours (number of employees * hours worked per year), and divide by 200,000.

*Number of incidents = (TRIR * Total Labor Hours) / 200,000*

D3) Identify the direct (medical) and indirect (non-medical, for example lost earnings) cost of injury and illness. For this study, we use figures derived from the U.S. based Survey of Occupational Injuries and Illnesses and National Council on Compensation Insurance (Leigh, 2011). The average cost per injury is $217,112, and the average cost per illness is $26,496.

Table 5: Cost of Workplace Incidents, Leigh 2011 (Non-Fatal)

Incident Category	Injuries	Disease	Data Reference
Total Incidents Analyzed	855,962	462,704	Table 1, Table 2
Direct and Indirect Costs			
Medical	$ 53,682	$ 6,851	Table 3
Lost earnings	$ 102,166	$ 13,724	Table 3
Fringe benefits	$ 27,279	$ 1,837	Table 3
Home production	$ 33,985	$ 4,085	Table 3
Total Costs	$ 217,112	$ 26,496	Sum

D4) Determine a best-in-class benchmark for recordable incidents. The IWAI uses the Good Jobs Institute aspirational benchmark of zero, therefore all recorded incidents are monetized for impact (Good Jobs Institute, 2020).

D5) Determine the total cost of injuries. Data regarding the percentage of incidents that are injuries is available at the company level. In absence of that data, national or industry-level data can be used.

*Total cost of injuries = (Number of incidents (D2) * % of incidents that are injuries) * Cost per injury (D3)*

D6) Determine the total cost of illnesses following the same process in (D5).

D7) Determine the **total recordable incident impact**:

Total recordable incident rate = Total cost of injuries (D5) + Total cost of illnesses (D6)

Part Two: Culture (Harassment and Incivility)

D8) Determine the number of employees experiencing non-physical sexual harassment.[31] If this number is not available, follow steps (D9) – (D11).

D9) Determine the number of female employees who experienced harassment based on best available research. We find a figure of 24% based on a meta-analysis of workplace harassment in the United States (Ilies et al, 2003). Multiply the rate by the total number of employees.

*Total number of female employees experiencing harassment = Total number of female employees * % experiencing harassment (24%)*

D10) Determine the percentage of EEOC claims filed by male employees in the industry. This data is available through the EEOC. In this study we access the data through the Center for American Progress, which shows that 25% of claims in the Manufacturing industry were filed by male employees in 2018 (Center for American Progress, 2018). We therefore assume 75% of incidents are suffered by female employees and 25% by male employees.

D11) Determine the total number of female and male employees experiencing non-physical sexual harassment:

*Total employees experiencing harassment = Number of male employees experiencing harassment (D10) = ((D9)/75% *25%) + Number of female employees experiencing harassment (D9)*

D12) Determine the total cost of harassment in the workplace using the monetization factor of 19,700 EUR (at current exchange rate) (True Price Foundation, 2020).

[31] Note: if using officially filed reports of sexual harassment, the number represents less than 30% of true incidences. Add an additional 70% based on underreporting (EEOC Task Force). Researchers suggest as low as 1 in 10 incidents are reported (Shaw et al, 2018). This data can also be collected from anonymized employee surveys.

*Impact of harassment = Number of employees experiencing harassment (D8) or (D11) * 19,700 EUR*

D13) Determine the number of individuals experiencing incivility through direct employee surveys. If this number is unavailable, use an evidence-based proxy. In the example below, we use 21% based on research from 2018 (Sabbath, et al., 2018).

*Number of employees experiencing incivility = Total number of employees * Incivility rate (e.g. 21%)*

D14) Determine the total cost of incivility in the workplace, using the incremental mental health costs associated with experiencing at least one type of incivility ($1,557) (Sabbath, et al., 2018).

*Impact of incivility = Number of employees experiencing incivility (D13) * $1,557*

D15) Determine the **total health impact of workplace culture**:

Total health impact of culture = Total cost of harassment (D12) + Total cost of incivility (D13)

Part Three: Monetization of Healthcare Impact

Health insurance impact is monetized by connecting health plan quality, proxied using consumer satisfaction ratings, with health capital foregone per year. Health capital is the present value of utility resulting from an individual's lifetime supply of health and takes into consideration the value people have for their health beyond their future earnings (Miller, et al., 2004). The monetization technique of value transfer is used in application of the health capital data, which quantifies the individual, family, firm, and external economic costs of un-insurance. While the Miller study is representative of the United States, results should be interpreted in context of the time passed since publication, as well as the tiered approach described below.

D16) Identify the following public data:

a. Total number of employees
b. Company health insurance plans and their consumer satisfaction ratings

D17) Determine the average consumer satisfaction of health insurance plans, using the consumer satisfaction ratings. In our methodology, we use the publicly available NCQA consumer satisfaction ratings, which range from 0 (worst) to 5 (best).

Average Consumer Satisfaction = (Plan 1 Rating + Plan 2 Rating + Plan 3 Rating…) / Number of Plans

D18) Identify a benchmark for health capital foregone per year for the uninsured. We use data from Health Affairs to apply a benchmark of $1,645 foregone per year for the uninsured (Miller, et al., 2004).

D19) Create a tiered system to match consumer satisfaction ratings to health capital foregone. We assume a linear relationship between tiers and health capital foregone up until a consumer satisfaction rating of 3.56, the average rating for commercial health plans (JD Power, 2018). We associate any rating above the average with zero health capital foregone. Our tiers are displayed in Table 6 below.

Table 6: Health Plan Rating Tiers

	Rating Min	**Rating Max**	**Health Capital Foregone**
Tier 1 (Best)	3.57	5.00	$ -
Tier 2	1.79	3.56	$ 548
Tier 3 (Worst)	1.00	1.78	$ 1,097
Uninsured	0.00	0.00	$ 1,645

D20) Apply the tiered system to determine the health capital foregone per year per employee. For example, an average consumer satisfaction rating of 2.5 it is in Tier 2, which corresponds to $548 of health capital forgone per person per year

D21) Determine the **total health capital foregone**:

*Total Health Capital Foregone= Health Capital Foregone Per Year per Employee (D20) * Number of Employees*

Part Four: Lifestyle and Chronic Disease Management

D18) Determine the total number of employees in the firm.

D19) Determine the percentage of employees participating in a health and wellbeing (HWB) program that includes both lifestyle management and chronic disease management:

HWB program participation rate = Number of employees in HWB program / Total number of employees at firm

D20) Identify the number of employees participating in HWB program:

HWB participants = (HWB participation rate (D19) total employees in firm*

D21) Determine the change in health outcomes from HWB program (in the example table below, we analyze the change in patients with hypertension moving from uncontrolled to controlled status).

D22) Determine the number of employees at risk of targeted health outcome in the HWB program cohort using health risk assessment (HRA) or biometric screening data from the HWB program. In our example, we assume 20% of employees have hypertension based on most recent available CDC data (Fryar et al, 2017).

*At risk employees in HWB program cohort = Risk factor (20%) * (HWB participants (D20))*

D23) Determine the number of employees at risk of targeted health outcome in the HWB participation surplus/gap using the same rate used in (D22):

*At risk employees in HWB participant surplus/gap = Risk factor (20%) * HWB participants (D20)*

D24) Find the *cost or savings of the health outcome* you are analyzing (e.g. uncontrolled hypertension). We use data from Kockaya and Werthemier (2011) to identify a savings of $1206 per person per year due to increased compliance associated with moving to controlled hypertension status from uncontrolled hypertension status. We call this health outcome $_x$.

D25) Determine the **HWB health outcome quality impact**:

*HWB quality impact = (Actual change in health impact (D21)) * At risk employees in HWB program cohort (D22) * Cost of health outcome* $_x$ *(D24)*

D26) Repeat steps for other health outcomes of interest. Note that it is only possible to achieve zero or positive impact in this sub-dimension. Sum each one to identify the **total value gained through HWB Lifestyle Management Intervention**:

HWB Program Impact = (Cost of health outcome $_x$ *quality impact (D25)) + (Cost of health outcome* $_y$ *quality impact) + … + (Cost of health outcome* $_z$ *quality impact)*

Part Five: Monetization of Paid Sick Leave Impact

Paid sick leave impact has two components for monetization: 1) the total value gained (lost) through wages gained (lost) and 2) the average increase in delayed care costs due to inadequate access to paid sick days. The valuation is based on compensation costs (including lost wages) and value transfer (healthcare costs due to delayed medical care). The steps are as follows:

D27) Identify the following public data:

a. Total number of employees
b. Average Daily Salary
c. Number of Sick Days Provided

D28) Identify a benchmark for best-in-class number of paid sick leave days. We use data from the National Institutes of Health to apply a benchmark of 10 days (DeRigne, 2018).

D29) Determine how many days of sick leave the company gives, in comparison to the best-in-class benchmark:

Surplus (Shortage) Days of Paid Sick Leave =Company Policy Days of Sick Leave (D27.c) - Best-in-Class Days of Sick Leave (D28)

D30) Determine the **total value gained (lost) through wages saved(lost) due to paid sick leave**:

*Total value gained (lost) through Paid Sick Leave = Surplus (Shortage) of Paid Sick Leave (D29) * Average Daily Salary (D27.b) * Number of Employees (D27.a)*

D31) Identify the average percentage point increase of people reporting delayed care for self or family members between workers with sick leave and workers without any sick leave. We use research from the Institute of Women's Policy Research, which states that 14.7% of people with paid sick days report delayed medical care and 20.6% of people without paid sick days report delayed medical care (Miller, et al., 2011). We obtain a benchmark of 20.6%-14.7% = 5.9 percentage points for the average increase in % reporting delayed care due to lack of any sick leave benefit.

D32) Determine a best-in-class benchmark for the number of sick leave days provided. The Bureau of Labor Statistics states that workers in private industry, on average, received 7 days of sick leave per year at 1 year of service.[32]

D33) Create a tiered system to match days of sick leave provided and percentage point increase in reporting delayed care. We assume a linear relationship between tiers and increase in reporting delayed care. Any company that provides the average number of sick leave days (7) or more sees a 0-percentage point increase in employees reporting delayed care. Our tiers are displayed below in Table 7.

Table 7: Increases in Delayed Care

	Sick Days Min	Sick Days Max	Increase in Reporting Delayed Care
Tier 1 (Best)	7.0	-	0.00 percentage points
Tier 2	3.5	7.0	1.96 percentage points
Tier 3 (Worst)	0	3.5	3.93 percentage points
No Sick Days	0	0	5.90 percentage points

D34) Determine a benchmark for increased total costs due to delayed care. We use data from the American Heart Association that identifies $6,628 as the total cost number due to delayed care for patients experiencing heart failure (Thomas, et al., 2019). Although we recognize that this number most accurately

[32] U.S. Bureau of Labor Statistics, 2019. Private industry workers with sick leave benefits received 8 days per year at 20 years of service. Available at: https://bls.gov

reflects the costs of delayed care for *heart failure patients*, we extrapolate the $6,628 to represent the increased total costs due to delayed care, in general. Because this number only captures one health condition, we believe this represents a conservative estimate of the impact of delayed care, as most patients have comorbidities.

D35) Determine the **average increase in costs due to delayed care**:

*Average Increase in Costs due to Delayed Care = Average Percentage Point Increase in People Reporting Delayed Care (D33) * Increased Total Costs due to Delayed Care (D34)* Number of Employees (D27.a)*

D36) Determine the **total value gained (lost) due Paid Sick Leave**:

Total Value Gained (Lost) due to Paid Sick Leave = Total Wages Gained (Lost) due to Paid Sick Leave (D30) + Total Costs due to Delayed Care (D35)

Part Six: Monetization of Family Friendly Workplace Impact

Family friendly workplace impact is monetized by determining (1) the total value gained (lost) through unpaid parental leave, which we measure in terms of lost/surplus wages, and (2) total value gained (lost) through childcare support. The valuation technique includes compensation cost (lost wages) as well as market price (direct childcare costs for children under 6).

D37) Identify the following public data:

a. Total number of female and male employees
b. Average weekly and hourly salary
c. Weeks of paid parental leave provided
d. Average amount of childcare support
e. Number of hours of backup dependent care provided

D38) Proxy for the number of female employees with children under the age of 6:

*Number of Female Employees with Children under the Age of 6 = Number of Female Employees * Percentage of Female Labor Force with Children under 6*

D39) Proxy for the number of male employees with children under the age of 6:

*Number of Male Employees with Children under the Age of 6 = Number of Male Employees * Percentage of Male Labor Force with Children under 6*

D40) Identify an appropriate paid parental leave benchmark. While research suggests 26 weeks is best practice (Schulte, et al., 2017; SHRM, 2019), we use data from JUST Capital to apply a benchmark of 16 weeks that better matches current practice in the United States (George, Y., 2019).

D41) Determine how many weeks of paid family leave the company gives in comparison to the best-in-class companies' weeks of family leave. Do the following for both female and male employees, as some companies have gender-specific policies (as well as policies that exclude adoptive parents and other types of parental leave):

Surplus (Shortage) Weeks of Leave = Company Policy Weeks of Leave (D37.c) – Benchmark weeks of paid parental leave (D40)

D42) Determine the **wage replacement value** for parental leave, which differs based on company practice and local policy regulations. This framework uses the proposed wage replacement rate from the Brookings Institute: 75% of the first $400 of weekly wages, plus 50% of all remaining weekly wages. It is capped at maximum Social Security taxable earnings (Ruhm, 2017).

D43) Determine the **total value gained (lost) due to parental leave**. If the company provides more than the best-in-class amount of leave, the positive impact can be thought of as the marginal income provided from supplementary paid leave. For example, for female employees:

*Total value gained (lost) from parental leave for Female Employees = Number of Female Employees with Children under 6 (D38) * Surplus (Shortage) Weeks of Leave (D41) * Average Weekly Wage Replacement (D42)*

D44) Determine the average amount of family friendly benefits provided, if a direct monetary value is not readily available from the company.[33] For example, companies may choose to provide discounts on tuition at childcare centers. The equation below monetizes the impact of a childcare tuition discount:

*Average Amount of Childcare Support = Discount on Childcare Tuition * Average Weekly Cost of Tuition per Week * Number of Weeks of Childcare*

D45) Determine the **total childcare support provided**:

*Total Value Gained from Childcare Support = Average Amount of Childcare Support * Number of Total Employees with Children under 6*

D46) Determine the number of backup childcare hours provided for working parents.

D47) Determine the **value gained due to backup childcare** hours provided:

*Total Value Gained due to Backup Childcare = Total hours of backup childcare provided * Average hourly wage * Number of employees with children under 6 (D38) + (D39)*

D48) Determine the **total value gained (lost) through family friendly workplace** benefits for qualified employees:

[33] The impact of other types of family friendly workplace programs can also be monetized. This example uses a discount provided for childcare costs. Some companies provide on-site childcare options (which reduce commuting cost for caregivers and eliminate the need for backup childcare solutions), some offer flexible spending accounts for employees, and others have flexible work arrangements for caregivers.

Total value gained (lost) through family friendly benefits = Total wages gained (lost) through parental leave (D42) + Total value gained through childcare support (D48)+ Total value gained through backup childcare services (D47)

Intel Case Study

The total impact of Health and Wellbeing at Intel in 2018 was ($263 million), as presented below in Table 8. There are six sub-dimensions of health and wellbeing impact in the impact-weighted accounting methodology, each expanded upon in more detail below. Each sub-dimension uses data directly from Intel as available, and substitution of proxy data is noted as needed.

Table 8: Intel Total Health and Wellbeing Impact

Health and Wellbeing	**Impact**	
Safety	$	(71,182,672)
Culture	$	(122,551,660)
Healthcare	$	(28,852,203)
Lifestyle and Chronic Disease	$	507,543
Paid Sick Leave	$	-
Family Friendly Workplace	$	(41,144,207)
Total Impact	**$**	**(263,223,199)**

Intel company information used for these analyses is provided in Appendix 4. The number of employees, gender representation of employees, and average weekly salary data was provided by Intel. For purposes of demonstration, we assume that all employees have equal access to programs, services, and benefits. The weighted average cost of childcare was calculated using information about the number of Intel employees per state, as delineated above in the *Monetization of Family Friendly Workplace Impact* section. Consumer satisfaction with Healthcare Plans was estimated using NCQA consumer satisfaction ratings; the NCQA does not cover all private insurers, and any insurance plans not included in the NCQA were omitted. Intel does not publish public information on the number of sick days provided to employees, therefore data from Glassdoor that was submitted by Intel's employees was used to proxy for the company's paid sick leave policy.

Part One: Safety (Injury and Illness)

Intel discloses its OSHA recordable incident rate in their annual Corporate Sustainability Report. In 2018, Intel had an incident rate of .69. Table 13 below shows how the methodology described above is applied to Intel's data for 2018. The cost data applied includes both direct medical costs, as well as costs related to lost earnings, and lost productivity at home (Leigh, 2011). While the medical costs may not be borne directly by the employee (depending on the terms of their healthcare access), these costs are important to include as they provide a proxy for other commonly used metrics to estimate the direct impact on individuals health (e.g. quality adjusted life years or QALYs). OSHA reporting requirements cover all employers with more than ten employees in the United States, which allows for comparability across organizations. The European Agency for Safety and Health at Work and the International Labour Organization are highly reputable sources of comparable data for other countries.

Intel does not report the breakdown of injuries and illnesses within their incident rate. We apply a rate of 85% injuries and 15% illness based on 2018 data from the semiconductor industry (334413) obtained through the Bureau of Labor Statistics. In addition to the OSHA TRIR rate, Intel also discloses selected additional data that can be analyzed for management decision-making For example, they report that cumulative trauma disorders (CTDs), which are typically related to ergonomics, were the most prevalent type of injury reported in 2018. This information could be used to calculate a more specific cost of injury for Intel, and would assist management in taking targeted action to improve workplace health. This level of detail is exemplary, and is not typical among most companies. For the purpose of replicability, we use the general incident rate below. Intel's total safety impact is ($71 million), as demonstrated in Table 9 below.

Table 9: Intel Safety Impact

			2018	Notes/Assumptions
A	Total Recordable Incident Rate		0.69	OSHA Rate
B	Labor hours		109,445,440	
C	Number of Incidents		378	A * B / 200,000
D	Number of Injuries		321	C * 85%
E	Cost per injury	$	217,112	
F	Total cost of non-fatal injuries	$	69,681,967	D * E
G	Cost per illness	$	26,496	
H	Number of illnesses		57	C * 15%
I	Total company cost of non-fatal illness	$	1,500,705	G * H
J	**Value of non-fatal injury and illness**	**$**	**71,182,672**	
K	Benchmark: incident rate**		-	Good Jobs Institute
L	**Total Recordable Incident Rate Impact**	**$**	**(71,182,672)**	

** Leigh, 2011*

*** Good Jobs Institute*

Part Two: Workplace Culture Impact

In our second sub-dimension of Health and Wellbeing, we drill down into the health-related outcomes of workplace culture. Table 10 below shows the impact of sexual harassment and workplace incivility, both issues of high importance for which improvement is hindered by under-reporting. Intel did not disclose information regarding harassment or incivility in 2018, therefore we use the closest data available to impute the potential health impact. Information gathered from an employee-level survey at Intel could be very swiftly replaced in the analysis below.

The total Workplace Culture impact at Intel is ($122 million), driven primarily by non-physical sexual harassment incidence. Values for both components are conservative, as they are used for demonstration purposes and therefore represent only a portion of potential impacts. For example, the harassment methodology does not include physical sexual harassment, physical harassment, or other forms of physical or psychological impacts experienced at the workplace. The figure for incivility is also conservative, as it excludes the impact of bullying (which would increase the percentage of effected employees in Row I from 21% to 26%) (Sabbath, et al., 2018). In future analyses, disaggregated data for incivility is critical, as evidence clearly shows that women and minorities face significantly higher risk of being victims of this type of behavior in the workplace (Berdahl and Moore, 2006).

Table 10: Intel Workplace Culture Impact

	Workplace Culture Impact		Notes/Assumptions
A	Female employees	14,162	
B	Female employees experiencing sexual harassment*	3,399	A * 24%
C	Male employees	38,456	
D	Male employees experiencing sexual harassment**	1,133	(B/75%)*25%
E	Total employees experiencing sexual harassment	4,532	
F	Cost per worker of non-physical sexual harassment (EUR)	19,700	True Price Monetization Factors
G	Cost per worker of non-physical sexual harassment (USD)	$ 23,246	Statista exchange rate 1:1.18
H	**Cost of sexual harassment (non-physical)**	**$ (105,347,153)**	**G * E**
I	% employees experiencing at least 1 type of incivility (exclusion, humiliation/ridicule/withholding information)**	21%	Proxy data using conservative estimate (+5% if bullying included)
J	Mental health costs due to incivility	$ 1,557	Incremental medical costs associated with one type of incivility or bullying (Sabbath 2018)
K	**Cost of workplace incivility**	**$ (17,204,507)**	
L	**Total**	**$ (122,551,660)**	**L + H**

* Based on meta-analysis of females experiencing workplace harassment (Ilies et al, 2003). This figure can be replaced by actual numbers from employee surveys and EEOC claims, however it must be significantly adjusted upwards based on evidence of drastic underreporting (up to 70% of incidents are not reported). For more information see EEOC Task Force data:

https://www.eeoc.gov/select-task-force-study-harassment-workplace

** 25% of claims are filed by males in Manufacturing industry (Center for American Progress, 2018).

Part Three: Healthcare

Table 11 below presents the calculations for the impact of insufficient health insurance on employees, resulting in a negative value of ($29 million) for FY 2018. Health Capital Foregone per Year is estimated using the Health Plan Rating Tiers described in the methodology above. Intel's healthcare provision is below average quality, resulting in the negative value below.

Table 11: Intel Healthcare Impact

Calculations		
Number of Employees		52,618
Consumer Satisfaction (CS)		2.32
Health Capital Foregone pppy	$	548
Total Value Lost	**$**	**(28,852,203)**

Part Four: Lifestyle and Chronic Disease Impact

The lifestyle and chronic disease sub-dimension works in close partnership with the safety sub-dimension. HWB programs have a strong emphasis on prevention, and is therefore a valuable leading indicator, while the recordable incident rate is an important lagging indicator for organizations to manage. The impact from Intel's Health and Wellbeing (HWB) program is $507,543. A best-in-class health and wellbeing program requires three elements: lifestyle management intervention, disease management intervention, and access to care (Coalition for Inclusive Capitalism, 2019). The Intel CSR report disclosed that 12,165 US-based employees were enrolled in the Intel Vitality program, which includes programming related to mindset, nutrition, movement, and wellness. These activities are categorized as Lifestyle Management. Intel's onsite Health for Life Centers and employer-provided healthcare provide access to care. Intel also published a white paper in 2018 highlighting its Connected Care program, including outcomes related to disease management. We therefore conclude that Intel addressed all three components of an effective health and wellbeing program as defined above.

Table 12 below analyzes the impact achieved through Intel's chronic disease management program, as measured through change in health risk. There are nine health risks in the standard Health Risk Assessment, and each one can be monetized for impact. For the purposes of demonstration, our model uses only one metric – hypertension – as an example of the potential impact of an effective employee wellbeing program. It is therefore a very conservative estimate. Workplace HWB program participation rates vary widely depending on many factors, including leadership support and use of financial incentives. Intel's participation rate is 20%.

Due to limited availability of data, there are a number of notable assumptions in the illustration below. Intel does not provide information regarding improvements (or lack of improvements) in health risk due to the Intel Vitality workplace wellbeing program. We therefore use data from Intel's Connected Care program as an indication of the company's performance regarding employee health (see Row E). The percentage of employees with hypertension is derived from national (CDC) data. However, a comprehensive workplace wellbeing program includes biometric/HRA data and will therefore have accurate workforce-level information rather than proxy figures for risk levels within the workforce. Companies will also have the opportunity to include all nine standard Health Risk Assessment areas, therefore the positive value created may be much greater than that presented below. Positive value will also increase as employee participation increases.

Table 12: Lifestyle and Chronic Disease Impact

	Lifestyle and Chronic Disease Management			Notes/Assumptions
A	Employees		52,618	
B	Employee participation in HWB program*		12,165	
C	Estimated % of employees with hypertension *		20%	CDC, average of 18-39 and 40-59 age groups
D	Participating employees with hypertension		2,476	
E	% HBP moving from controlled to uncontrolled		17%	Data from Intel's Connected Care program
F	Patients with improved compliance		420.85	
G	Cost savings from hypertension compliance pppy**	$	1,206	Cost savings adjusted to 2018 value
H	Value of improved compliance	**$**	**507,543**	Health outcome quality measure
I	**Total Company Impact of HWB Intervention**	**$**	**507,543**	**H * I**

*There are 9 health risks in the standard Health Risk Assessment which measure effects of Lifestyle Management interventions. Each one can be monetized for impact. This model analyzes hypertension due to its strong empirical impact on other health outcomes.

** Kockaya and Wertheimer, 2011.

Part Five: Paid Sick Leave

Table 13 presents the calculations for the impact of insufficient paid sick leave on employees. If our Glassdoor estimate for Intel's paid sick leave days is accurate (10 days), then Intel has a satisfactory paid sick leave program, resulting in a net loss of $0 million for FY 2018. The value for delayed medical care is also zero, due to the number of Paid Sick Days provided by Intel.

Table 13: Intel Sick Leave Impact

Benchmarks		
Best in Class Days of Sick Leave		10
US Average Number of Sick Leave Days Provided		7
Calculations		
Number of Employees		52,618
Company Average Daily Salary	$	491.76
Days of Unpaid Sick Leave		0
Lost Wages due to Unpaid Leave	**$**	**-**
Average Increase in % Reporting Delayed Care		0.00
Increased Total Costs due to Delayed Care	$	6,628
Total Cost Due to Delayed Care	$	-
Total Value Lost	$	-

Part Six: Family Friendly Workplace

Table 14 below presents the calculations for the impact of family friendly workplace benefits at Intel, resulting in a negative value of ($44 million) for FY 2018. More detailed calculations for labor force participation, number of employees with children under the age of 6, and the weighted average cost of childcare can be found in Appendix 4. The negative value below is generated from weeks of parental leave provided during the study year. While Intel shows room to improve to reach a best-in-class standard for parental leave the company creates value through childcare support and backup childcare services. Notably, Intel's public website currently states that the company provides 12 weeks of paid family leave for both male and female employees in 2020. The increased gender-neutral parental leave, while still below the benchmark of 16 weeks, would reduce Intel's parental leave impact from ($41 million) to ($15 million).

Table 14: Intel Family Friendly Workplace Impact

	Family Friendly Workplace Factors	Male	Female	Total	Notes/Assumptions
A	# of Employees w/ Children Under 6	2,953	1,656	4,610	*Appendix 4*
B	Surplus/Gap Parental Leave Provided	(8)	(8)		*Benchmark - Actual*
C	Eligible wage replacement*	$ 1,379	$ 1,379		
D	**Value gained/lost from Parental Leave**	$ (32,591,325)	$ (18,279,218)	**$ (50,870,544)**	*A * B * C*
E	# of Employees w/ Children Under 6	2,953	1,656	4,610	
F	Average Amount of Childcare Support	$ 1,495	$ 1,495	$ 1,495	*Appendix B*
G	**Total Value Gained through Childcare Support**	$ 4,415,938	$ 2,476,730	**$ 6,892,668**	*E * F*
H	# of Employees w/ Children Under 6	2,953	1,656	4,610	*Appendix 4*
I	Hours of Backup Childcare Provided	10	10	10	*Intel, 2015*
J	Company Average Hourly Salary	$ 61	$ 61	$ 61	*Appendix 4*
K	**Total Value Gained through Backup Childcare**	$ 1,815,452	$ 1,018,217	**$ 2,833,669**	*M * N * O*
L	Value gained(lost) from parental leave			$ (50,870,544)	*D*
M	Value gained from childcare support			$ 6,892,668	*G*
N	Value gained from backup childcare			$ 2,833,669	*K*
O	**Total Value Gained (Lost) through Family Friendly Workplace**			**$ (41,144,207)**	*L + M + N*

*See Methodology Step D42

Labor Community Impacts

Organizations have positive and negative impacts through their employment practices on the broader labor community. Below, we explore two important areas of impact: *diversity* and *location*. These examples are not exhaustive, and there is significant opportunity for additional analysis. For example, a future area of focus may include the impact attributed to organizations based on their suppliers' employment impact. We envision a process by which companies (such as Intel) will be allocated a percentage of their suppliers' impact-weighted accounting value based on the overall share of the supplier's revenues derived from the company in question. For a very simple example, imagine a company that created $2 billion in employment impact. If 20% of that company's sales were to Intel, then Intel could carry 20% of the total employment impact of that supplier on its own calculation ($400 million). Attribution of supply chain impacts is in alignment with standards such as GRI 202-1 (risk of child and forced labor), WEF Common Metrics (Nature Loss and Fresh Water Availability), and the United Nations Guiding Principles on Business and Human Rights. It is therefore an important area for future impact-weighted accounting measurement

The labor community impact dimensions calculated below, *diversity* and *location*, have a total impact of ($1.9 billion) when applied to Intel. The importance of each dimension to measurement of employment impact, the methodology for monetization, and the application to Intel to demonstrate feasibility is explained in more detail in the following sub-sections.

E. Diversity

Contribution to Employment Impact

Barriers to employment are a fundamental driver of socioeconomic inequality. Disparities in labor force outcomes across gender, ethnic, and racial groups can be largely attributed to systematic bias (Charles, et al., 2018; Perea, 2011; Yemane and Fernández-Reino, 2019). Progress towards equal employment access is highly varied geographically, and has been faster for some groups than others. There are deep remaining inequalities in access to employment in the US and globally. White men in the US have the highest access to work (BLS, 2020, Table A-2. Employment status of the civilian population by race, sex, and age),[34] while Black men and women are nearly twice as likely to be unemployed as White men or women.[35] The

[34] United States Bureau of Labor Statistics. Employment Projects. Available at: https://www.bls.gov/lau/ptable14full2019.htm
[35] United States Bureau of Labor Statistics. Table A-2 Employment Status. Available at: https://www.bls.gov/news.release/empsit.t02.htm.

monumental job losses in 2020 during the COVID-19 pandemic have been disproportionately suffered by women and minorities, who continue to bear a larger burden of unemployment.[36]

Structural inequalities contribute to barriers to entry in the labor market. For example, between 2007 and 2016, 70% of new jobs were listed as requiring a 4-year college degree (BLS, 2017),[37] however over 60% of the workforce over the age of 25 does not have a college degree (Opportunity@Work and Accenture, 2020), and college enrollment varies significantly by race/ethnicity (NCES, 2017).[38] In addition to hiring bias, women face the additional challenge of conforming to working schedules that for the most part are often infeasible for individuals caring for children or other dependents (who are disproportionately female) (NWLC, 2019). Lack of family friendly workplace practices (analyzed in the Health and Wellbeing dimension) and the oversized share of domestic responsibilities contributes negatively to female labor force participation (Schochet, 2019; BLS, 2017; Glynn, 2018).

It is critical to note the extreme heterogeneity of female and minority representation across industries, sectors, and job types. For example, in the US women make up a disproportionate number of the voluntary part-time workforce (with childcare and family/personal obligations cited as a primary reason for part-time status), and have much greater representation in the healthcare industry than in technology and manufacturing (BLS, 2017; BLS, 2019, Quality of life benefits: Access, private industry workers; Penner 2008; Cortes 2018). Black and Latino workers are more likely to work part-time schedules, with minority women most likely to be in low-paying service work (Economic Policy Institute, 2020; Cajner et al., 2017; Cohen and Casselman, 2020). White men have greater access to high paying jobs, an advantage that is strengthened in states with larger minority workforces (Tomaskovic-Devery and Hoyt, 2019).

Women and minorities face substantial bias and discrimination in recruitment and hiring, as evidenced by extensive research (Zschrint and Ruedin, 2016). Correspondence tests, in which two identical applicants apply to the same position with one differentiating characteristic (gender, race, ethnicity) show discrimination exists across geographies and sectors (Zschrint and Ruedin, 2016; Rich 2014). A meta-analysis conducted in 2016 found that minority group applicants had 49% lower odds of receiving a job interview when compared to equally qualified candidates (Zschrint and Ruedin, 2016). Gender-based bias in correspondence analyses is also significant, although there is variation across industries (Baert, 2018).

As with other human capital disclosures, diversity metrics are highly varied across organizations and contexts. Pressure from investors, regulators, and consumers lead to isolated and idiosyncratic

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[36] Georgetown University Center on Education and the Workforce. https://cew.georgetown.edu/cew-reports/jobtracker/#jobs-tracking

[37] United States Bureau of Labor Statistics. https://www.bls.gov/opub/ted/2017/occupations-typically-requiring-high-school-for-entry-lost-1-3-million-jobs-may-2007-16.htm

[38] In 2016, the percentage of 18-24 year olds enrolled in college in the US by race/ethnicity was as follows: Total 41%, White 42%, Black 36%, Hispanic 39%, Asian 58%, Pacific Islander 36%, American Indian/Alaska Native 19%, and Two or more races 42%. NCES: https://nces.ed.gov/programs/raceindicators/indicator_REA.asp

availability of data. For example, protests in the United States and across the world in 2020 regarding anti-Black racism and police brutality has invigorated calls for greater, more uniform disclosure on hiring, retention, and compensation of minorities (Mahoney and Bixby, 2020; George, 2020). A swell of activism surrounding the #MeToo movement has arguably contributed to improved data regarding gender within organizations (Billings, et al.,2019). While more companies are beginning to disclose basic diversity figures such as "percent women (minorities) employed" and "percent women (minorities) in management," only 3% of Fortune 500 companies shared complete employee demographic data in 2017.

We highlight the issue of firm *diversity* because unequal access to employment contributes to significant disparities in labor force outcomes (Cajner et al., 2017). The monetization methodology is described below.

Monetization Methodology

Our methodology for monetizing *diversity* impact posits that the gender and racial/ethnic demographics of a firm should reflect the demographics of the local population, using the most recent, specific data available (e.g. in the United States, we use the demographics at the county level). The monetization methodology identifies the number of women and minorities that should be employed at the firm for equal parity between workforce demographics and population demographics. The number of additional employees for each underrepresented demographic group is multiplied by a wage penalty, producing a monetary value that reflects the negative *diversity* impact for the respective underrepresented group. The following steps describe the core process of calculating diversity impact.

E1) Determine the total number of employees at the firm.

E2) Identify the number of employees in minority group $_j$.

E3) Determine the 'expected' proportion of employees in minority group $_j$ by examining local demographic data (e.g. if 15% of the local population is Asian women, the expected proportion of this group in the firm is also 15%).

E4) Determine the expected number of employees at the firm for minority group $_j$:

*Expected employees in group $_j$ = Total employees at firm (E1) * Local demographic benchmark (E3)*

E5) Determine the missing employees at the firm in minority group *j* required for parity:[39]

Missing employees in group $_j$ = Expected employees in group j (E4) – Number of actual employees in group $_j$ (E2)

[39] If this number is positive, there is no under-representation of this group, and the impact is zero (0).

E6) Determine the monetized diversity impact for minority group $_j$:

*Monetized diversity impact for group $_j$: Missing employees in group $_j$ (E6) * Weighted average of the "average salary" group (C7)*[40]

E7) Repeat steps E2 through E6 for each group.

E8) Sum the values produced in step (E7) for each minority group to determine the total monetized ***diversity*** impact:

Diversity impact = Sum of monetized diversity impact for employees in each demographic group

Intel Case Study

Diversity impact addresses the representation of minority groups within an organization. We use Intel's EEO-1 Component 2 Report to demonstrate the application of the *diversity* impact monetization methodology. The Report provides the number of employees in each occupation category by gender and race/ethnicity. Therefore, minority group$_j$ is a gender-race/ethnicity group (e.g. Asian women or Black men). Steps (2) and (3) are calculated with this definition of minority group$_j$.

We find a ($2.32 billion) *diversity* impact for Intel, with nearly $2 billion derived from lack of female representation (see Table 15 below). The group with the largest associated negative impact is White women. White women make up 10.1% of Intel's current workforce, but are 27.3% of the local populations, resulting in a ($1.2 billion) negative impact. Hispanic or Latino women have the second largest impact at ($542 million), followed by Hispanic or Latino men at ($236 million).

An important finding is that Asian men and Asian women have no negative *diversity* impact, as both groups are overrepresented at Intel. For example, Asian men account for 25.6% of Intel's employees but are only 7.0% of the local demographics. While Asian men and women have no negative *diversity* impact, they have the largest and second largest *opportunity* impacts. Conversely, White women have the largest *diversity* impact, but no *opportunity* impact. These two cases highlight the collaborative nature of the *opportunity* and *diversity* dimensions. *Diversity* impact captures overall representation of demographic groups across an organization. *Opportunity* impact captures the representation of demographic groups within an organization's hierarchy, conditional on the overall representation found in the *diversity* dimension. For example, organizations that have very little diversity (or little diversity for a specific demographic group) and, as such, have large, negative *diversity* impact are likely to have small *opportunity* impacts. If there are no diverse employees in the organization to elevate to higher positions, there can be no negative *opportunity* impact. The opposite scenario is also true. Only organizations with strong diversity practices (small *diversity* impact) are more likely to have large *opportunity* impacts.

[40] A description for the calculation of the "average salary" group is provided in the *opportunity* impact dimension.

Table 15: Intel Diversity Impact

	White	Black	NHPI	Asian	American Indian	Two+	Hispanic/Latino
Male							
Current Employees	18,621	1,775	102	13,446	294	532	3,686
Current Employees (%)	35.4%	3.4%	0.2%	25.6%	0.6%	1.0%	7.0%
Local Demographics	26.6%	2.4%	0.3%	7.0%	0.9%	2.1%	10.4%
Missing Employees	N/A	N/A	36	N/A	200	552	1,812
Net Male Impact	$0	$0	($4,722,095)	$0	($26,073,412)	($71,983,428)	($236,175,094)
Female							
Current Employees	5,290	612	36	6,722	101	205	18,621
Current Employees (%)	10.1%	1.2%	0.1%	12.8%	0.2%	0.4%	2.3%
Local Demographics	27.3%	2.3%	0.3%	7.4%	1.0%	2.1%	10.2%
Missing Employees	9,053	578	101	N/A	404	894	4,166
Net Female Impact	($1,179,754,002)	($75,261,033)	($13,150,553)	$0	($52,647,343)	($116,506,776)	($542,918,403)
Total Male Impact	($338,954,029)						
Total Female Impact	($1,980,238,109)						
Total Diversity Impact	($2,319,192,138)						

F. Location

Contribution to Employment Impact

Access to work is inequitable across geographies, as evidenced by dramatically varying levels of unemployment both between countries and across rural and urban divides (ILO, 2020, World employment and social outlook: Trends 2020). Extensive labor market research shows myriad geographical disparities in access to work and particularly access to decent, quality work (ILO, 2020, World employment and social outlook: Trends 2020). Unemployment rates are rising among low-income countries compared to lower-middle income and upper-middle income groupings (ILO, 2020, World employment and social outlook: Trends 2020), with serious consequences for workers.[41] The share of labor income varies greatly (and is significantly hindered by data availability outside of formal labor markets), however, the importance of employment opportunities to individual health and prosperity is universally accepted (Gomis, 2019; Gibb, et al., 2014). For previously employed individuals, instances of unemployment stigmatizes reemployment attempts, creating a future barrier to work similar to those faced by people with a criminal record (Pager, 2008) or mothers re-entering the workforce (Correll et al., 2007). Eventually reemployment is often at a lower pay (Gangl, 2006; Fuller 2008) and recovers only two-thirds the initial harm from job loss (Young, 2012). Moreover, life satisfaction declines sharply during unemployment and remains low until new employment is found (Blanchflower and Oswald, 2004; Clark and Oswald, 1994) and little can be done to ameliorate the stress of unemployment (Young, 2012).

In the United States, jobs in rural area have historically been production and manufacturing focused, making them more vulnerable to business cycles, foreign competition, and technological displacements (McGranahan, 1988), and resulting in a higher likelihood of permanent job loss (Glasmeier and Salant, 2006). Following the 2008 Financial Crisis, metropolitan areas recovered to pre-crisis levels of job growth by 2013, while rural areas were harder hit and have yet to fully rebuild.[42] Employment in rural areas is more likely to be dominated by large, singular employers, leaving communities at high risk of skyrocketing unemployment if those companies close their doors.[43]

Job creation is a highly tracked indicator for firms, investors, development institutions, and many other stakeholders.[44] However, it is uncommon to measure the incremental impact of employment

[41] While unemployment rates are highly varied across the world, it is also necessary to note the fundamentally distinct nature of labor markets across different geographies that make these data important to analyze critically. For example, unemployment rates do not account for critical differences in participation in other areas of work such as the informal economy or unpaid caregiving and domestic labor.

[42] Analysis by Steven Beda using Integrate Public Microdata Series. Data available at: https://usa.ipums.org/usa/

[43] Adamy, J. and Overberg, P. One Nation, Divisible: Rural America is the New 'Inner City'. *Wall Street Journal*. May 26, 2017. Available at: https://www.wsj.com/articles/rural-america-is-the-new-inner-city-1495817008.

[44] See examples from the Global Reporting Initiative, the Global Impact Investing Network, the World Economic Forum Common Metrics, among others.

opportunities within the local economic context. The *location* dimension incentivizes firms to create employment opportunities where they are most needed. In geographical areas with low unemployment, the availability of jobs for those seeking jobs should be high.[45] In areas where unemployment is high, job availability is less, and thus the jobs that are available are of greater impact. Alternatively, when unemployment is low but employment opportunities are consolidated with a small number of employers, employment alternatives are limited and thus existing employment opportunities are of greater impact.

Critically, the analysis works in close concert with the other 7 dimensions of employment impact to ensure that firms are creating high quality (and not simply low cost) jobs in any area in which they operate.

Monetization Methodology

The monetization methodology for *location* impact measures a firm's contribution to local employment opportunities. If the firm provides optionality by bringing new jobs to an area of high unemployment and makes a significant contribution to the existing job market, then the *location* impact of the firm increases. Optionality is measured by the local unemployment rate and contribution is measured by a firm's input to the local unemployment rate (i.e. the expected initial increase in the local unemployment rate if the company were to shutter operations). *Location* impact is monetized by utilizing the additional income beyond unemployment benefits, an employee would on average receive from being employed by the firm.

The following steps describe the core monetization methodology for *location* impact:

F1) Identify the number of employees at firm location $_l$

F2) Identify total employed individuals from local unemployment statistics for firm location $_l$

F3) Identify total unemployed individuals from local unemployment statistics for firm location $_l$

F4) Identify maximum yearly unemployment benefits for firm location $_l$[46]

F5) Identify average salary of firm employees

F6) Determine the incremental wages received due to employment:

Incremental wages received = Average salary of firm employees (G5) – Maximum yearly unemployment benefits (F4)

[45] This assumes unemployment is not artificially being decreased through discouraged job searchers leaving the labor force. Additionally, unemployment could be high and job availability be high if the skills/education of the population do not match the required skills/education of the jobs available.

[46] Our methodology uses unemployment benefits as a counterfactual for income earned through employment at the organization we are studying, but does not make any assumption regarding the potential real employment status of individuals in absence of the organization's operational status in its current location(s).

F7) Determine the hypothesized local unemployment rate if the firm did not exist in location $_l$:

Hypothesized local unemployment without firm = (Employees at firm location $_l$ (F1) + Total unemployed individuals in location $_l$ (F3) / ((Total employed individuals (F2) + Total unemployed individuals (F3))

F8) Determine the *location* impact for firm location $_l$

*Location impact = Incremental wages received due to firm employment (F6) * Hypothesized unemployment rate without firm (F7)*

F9) Repeat steps (F1) through (F8) for each firm location and sum the resulting values to produce the total ***location*** impact value.

*Location impact = Sum of (incremental wages received due to firm employment * Hypothesized unemployment rate without firm) at each location*

Intel Case Study

Intel publically discloses location data on 50,700 of their U.S. employees, 96% of their total domestic labor force per their 2018 EEO-1 Component 2 Report. Intel discloses the total number of employees at eight of their major locations. We map each location to its respective county, and collect county level employment data from the U.S. Bureau of Labor Statistics.[47,48] We also collect unemployment benefit data at the state level. Each state varies in the maximum weekly benefit available and the number of week unemployment benefits can be collected. To produce conservative estimates, we assume all unemployed individuals would receive maximum yearly unemployment benefits (maximum weekly benefits multiplied the maximum number of weeks unemployment benefits can be collected).

From Intel's 2018 EEO-1 Component 2 Report, we calculate the average employee salary to be $138,991. We subtract the maximum yearly unemployment value from the average employee salary to determine the additional income, beyond unemployment, an individual would receive from being employed at Intel, relative to local unemployment benefit policies. To measure Intel's contribution to the stability of local employment, we calculate a new unemployment rate which is the employment rate if Intel were to shutter operations, laying off all employees. Finally, a monetized *location* impact value is calculated for each location by multiplying the additional income from employment by the number of employees and the

[47] Labor Force Data by county is available from the Bureau of Labor Statistics at: https://www.bls.gov/lau/. We use 2019 annual averages for our analysis.

[48] We use county level employment data to allow for the fact that employees do not necessarily live in a different city from where their place of employment is located. Employees may choose to live farther away from their place of employment for a plethora of reasons (e.g. lower cost of real estate, geographic preference, family proximity, etc.). While it is less likely most employees live within the same city as their company is located, the proportion of employees living within the county their company is located is likely much higher, and hence why we use county employment data.

new unemployment rate. Table 16 lists *location* impact values for each Intel location and describes the input data for calculate impact values.

We calculate a total *location* impact of $401 million. Much of the total location impact is driven by the Hillsboro, Oregon location. While this location employs the most Intel employees (21,000), it is also the location with the largest relative contribution to local employment. The reported county unemployment rate for Hillsboro is 3.1%. However, if we were to remove the employment opportunities Intel provides to the local job market, the local unemployment rate would jump to 9.5%. In general Intel operates in locations with low unemployment rates and where it is not a major contributor to local employment. After Hillsboro, Rio Rancho, New Mexico is the location in which Intel provides the largest relative contribution to local unemployment. While Intel only employs 1,200 employees in Rio Rancho, if those 1,200 lost their jobs local unemployment would jump from 4.8% to 6.6%.

Table 16: Intel Location Impact

Location	County	Employed (County)	Unemployed (County)	Unemployment Rate (County)	Maximum Weekly Unemployment Benefits (State)	Maximum Weeks of Benefits (State)	Maximum Yearly Unemployment Income	Additional Income from Employment	New Unemployment Rate	Intel Employees	Impact
Austin, Texas	Travis	722,054	19,047	2.6%	$521	26	$13,546	$125,445	2.8%	1,700	$5,970,090
Chandler, Arizona	Maricopa	2,217,656	92,847	4.0%	$240	20	$4,800	$134,191	4.5%	12,000	$73,072,638
Folsom, California	Sacramento	686,298	26,096	3.7%	$450	26	$11,700	$127,291	4.5%	6,000	$34,409,655
Fort Collins, Colorado	Larimer	201,624	4,859	2.4%	$597	26	$15,522	$123,469	2.6%	600	$1,958,568
Hillsboro, Oregon	Washington	315,008	9,998	3.1%	$648	26	$16,848	$122,143	9.5%	21,000	$244,641,945
Rio Rancho, New Mexico	Sandoval	63,268	3,207	4.8%	$542	26	$14,092	$124,899	6.6%	1,200	$9,936,322
Santa Clara, California	Santa Clara	1,027,527	26,196	2.5%	$450	26	$11,700	$127,291	3.1%	6,500	$25,673,196
San Jose, California	Santa Clara	1,027,527	26,196	2.5%	$450	26	$11,700	$127,291	2.6%	1,700	$5,728,789
Total Impact	$401,391,204										

G. Total Employment Impact

Intel Corporation created a total positive impact of $3.9 billion through employment in 2018, including $5.8 billion targeting employees, and ($1.9 billion) targeting the broader labor community. This is a significant amount, representing 27% percent of US revenue, 59% of US EBITDA and 53% of total estimated salaries paid in the United States. This substantial value was previously not measured or disclosed by Intel, and signals to peers, investors, and broader stakeholders that there is sizable social impact through positive employment practices. The analysis also illuminates potential to create additional value for employees through improved performance in many employment dimensions, which are demonstrated below in monetary values that can be reflected in accounting statements for the first time. The total employment impact for Intel is presented in Table 17.

Table 17: Intel Total Employment Impact (United States)

Dimension	Impact		% Revenue	% EBITDA	% Salaries
Employee Impact					
Wage Quality	$	6,503,438,571	45.47%	98.97%	88.92%
Career Advancement	$	(48,980,821)	-0.34%	-0.75%	-0.67%
Opportunity	$	(415,218,670)	-2.90%	-6.32%	-5.68%
Health and Wellbeing	$	(263,223,199)	-1.84%	-4.01%	-3.60%
Subtotal	**$**	**5,776,015,881**	**40.38%**	**87.90%**	**78.98%**
Labor Community Impact					
Diversity	$	(2,319,192,138)	-16.21%	-35.29%	-31.71%
Location	$	401,391,204	2.81%	6.11%	5.49%
Subtotal	**$**	**(1,917,800,935)**	**-13.41%**	**-29.19%**	**-26.22%**
Total Impact	**$**	**3,858,214,947**	**26.97%**	**58.71%**	**52.76%**

As described in Section 2 above, one of the sub-dimensions included above is monetized using imputed data: *workplace culture* (within the *health and wellbeing* dimension). The total employment impact for Intel in 2018 excluding these areas is $4 billion (a reduction in negative impact of $122 million).

In order for the figures Table 17 to be most actionable and relevant to investors, managers, employees, and customers, they must be integrated within Intel's financial statements, and become part of the language of managerial and investment decision-making.

6. Accounting Treatment of Employment Impact

A few key points arise from the company case study and subsequent discussion regarding accounting for employment impact. First, the starting point of the methodology is crediting companies with the amount of wages they have paid to employees above living wage (adjusting for the marginal utility of income and equity). From that starting point, most dimensions have a debit effect reducing the positive employment impact. Exceptions include location that credits companies for employing individuals in areas with limited employment opportunities and health and wellbeing, which rewards companies for superior performance on those dimensions. Therefore, theoretically a company's maximum employment impact would be the total wages paid plus any positive location impact for companies with employees in high unemployment areas and any additional credits for health and wellbeing. A company's minimum employment impact could be negative. This would be the case for a company that pays only a limited number of employees very high wages, many employees below living wage, offers bad benefits, exhibits little career advancement among employees, demonstrates unequal access to job opportunities among demographic groups, and has poor health and wellbeing outcomes.

Accounting for organizational impact on employees presents new challenges and opportunities that go beyond the process of monetization described in depth in Section 5. Current accounting practices consider employees primarily as a cost-driver. The bulk of expenses are evident in a firm's Selling, General, & Administrative (SG&A) expenditures within the income statement, with the highest cost driver by far consisting of salaries and wages. Many companies also incur significant payroll expenses in Research and Development as well, while other activities such as employee training are also accounted for exclusively as costs. This approach to accounting for human capital is limited, and is disconnected from the adage touting employees as a company's greatest *asset* (Rouen, 2019). Further, when recognized within financial statements exclusively as an expense, employees are left vulnerable to under-investment, or even to elimination by managers seeking to improve the appearance of their bottom line.

We propose a recording of employment impact within the income statement and balance sheet of an organization. Careful attention is needed to determine the timing and classification of both income statement and balance sheet employment impacts. The income statement (here used to include the Statement of Other Comprehensive Income) will include same year effects of employment impact, recorded as either a positive amount for positive impacts or a negative amount for negative impacts. Each year, employment impact from the income statement will be carried over to the balance sheet and recognized as a form of equity (recorded as "accumulated other comprehensive income"). A corresponding entry would be either on the asset recognizing a human capital asset or a liability recognizing negative effects on employees. These balance sheet impacts would be carried over and amortized over time. The amortization schedule could be a function of employee turnover or based on how the impacts might manifest over time.

An illustration of the integration of employment impact is possible in the *health and wellbeing* dimension. Firms currently recognize expenditures related to employee health and wellbeing (HWB) programs within the income statement as a line item within SG&A, which results in reduced operating income. The IWAI employment framework, on the other hand, calculates a monetized value for health outcomes based on employee access to high quality HWB services, through the healthcare and lifestyle and chronic disease sub-dimensions. A company that pays more for a high quality HWB program may incur a larger expense within their income statement than a competitor who pays less for a lower-quality program. Under current accounting standards, with all else equal, the former company would report lower earnings than the latter. However, the IWAI employment impact framework presents a monetized value for improved employee health outcomes, which would be recognized as a positive impact in the income statement. Likewise, a company with poor participation and/or low quality HWB programming would demonstrate negative impact in this employment impact dimension, resulting in an expense recorded on the income statement. There is a clear connection between HWB and employee health outcomes (see Section 5D above), as well as between health outcomes and job satisfaction, turnover, and productivity (Bakotic, 2016; Gubler, et al., 2018; Halkos, 2010; Platis and Bousinakis, 2015; Singh and Loncar, 2010). Properly and comprehensively accounting for HWB as more than a recurring cost, either through an adjustment to income or a as a balance sheet entry, has significant potential to more accurately analyze both business and employee outcomes while incentivizing businesses to improve employee well-being.

Consider the example of salaries, as illustrated through the Intel case study. The accounting treatment of *wage quality* is demonstrated in Table 18 below through a mock snapshot of Intel's 2018 income statement. Currently, salaries are recorded solely as an operating expense. There are various options for an accounting treatment that realigns management incentives and creates transparency employee treatment. One potential solution is an adjustment to Other Comprehensive Income by including the unadjusted salary value as a positive impact adjustment, and the quality-based adjustments for living wage, marginal utility, and wage equity as a negative impact adjustment. The final impact on income is the value of wage quality impact as demonstrated in Table 2 (Section 5).

Table 18: Example Accounting Treatment for Wage Quality Impact, Intel

Income Statement	2018	Notes
Positive Impact Adjustment		
Total Unadjusted Salaries	$7,313,439,500	
Negative Impact Adjustment		
Salaries Below Living Wage	($43,190,560)	Negative impact adjustment
Marginal Utility Adjustment	($301,322,044)	Negative impact adjustment
Wage Equity Adjustment	($465,488,325)	Negative impact adjustment
Wage Quality Impact-Weighted Increase in Income	**$6,503,438,571**	**Wage Quality Impact**

7. Application and Scale Up

Employment impact-weighted accounting statements are a powerful tool for managers, investors, and consumers. As with financial statements, the ability to compare outcomes between firms and across industries is of utmost importance. In Table 19 we present findings for three additional US-headquartered firms: Apple, Costco, and Merck. We choose these three firms because they represent a wide cross section of sectors (technology, consumer staples, and healthcare) and because they also provide relatively good disclosure on employment practices. The variation across firms begins to tell an interesting story. For example, note the significant value lost through poor diversity and opportunity across companies. This represents the reality that racial minorities and women are still underrepresented in the workforce and especially among higher paying jobs. Merck emerges ahead of the other companies on those dimensions, due primarily to more female representation in the workforce. However, low representation of racial and ethnic minorities at the firm result in a diversity penalty of 15% of total salaries paid. Despite the company's leadership in public disclosure regarding diversity and inclusion, Intel has the highest diversity penalty as a percentage of total salaries (32%), with Apple following at (25%) and Costco with the lowest penalty of (8%). We see greater similarity regarding opportunity impact (the representation of minority groups at different levels within the organization), with Intel at 5.7% of total salaries, Merck at 5.6%, Costco at 5.2%, and Merck at 3.9%. Costco's wage quality impact is reflective of its reputation as an employer with better pay practices relative to the industry.

Other notable differences emerge from this cross-company analysis. At Merck, the total employee focused impact of ($2.1 billion) results in a per-employee figure of $92,862 (see Table 20 on the following pages). Excluding the value of *wage quality* impact results in a negative impact of ($7,990) per employee (approximately 9% of total value created). At Apple, on the other hand, a per person employment impact of $115,543 is reduced to ($3,275) in non-wage impact (only 3% of total impact) when only *opportunity*, *career advancement*, and *health and wellbeing* are monetized. These figures provide insight regarding opportunities for firms to improve job quality for employees and consequently create additional social value.

Table 19: Employment Impact-Weighted Accounts: Intel, Merck, Apple, Costco 2018[49]

	INTEL	MERCK	APPLE	COSTCO
Number of Employees	52,618	23,426	89,072	162,861
Revenue	$ 14,303,000,000	$ 18,212,000,000	$ 98,061,000,000	$ 102,286,000,000
EBITDA	$ 6,571,097,189	$ 5,885,506,597	$ 32,138,473,262	$ 3,865,000,000
Total Salaries Paid	$ 7,313,439,500	$ 2,412,642,901	$ 10,659,008,099	$ 11,570,732,081
Employee Impact				
Wage Quality (ex wage equity)	$ 6,968,926,896	$ 2,362,558,652	$ 10,583,352,871	$ 10,815,362,587
Career Advancement	$ (48,980,821)	$ (27,045,746)	$ 103,542,779	$ 11,261,283
Opportunity	$ (415,218,670)	$ (134,145,314)	$ (416,006,634)	$ (599,777,780)
Health +Wellbeing (partial FFW practices)	$ (41,144,207)	$ (25,992,473)	$ 20,738,712	$ (57,653,431)
Subtotal	**$ 6,463,583,198**	**$ 2,175,375,119**	**$ 10,291,627,728**	**$ 10,169,192,859**
Labor Community Impact				
Diversity	$ (2,319,192,138)	$ (351,452,127)	$ (2,709,616,423)	$ (940,026,964)
Location	$ 401,391,204	$ 105,763,520	$ 348,062,104	$ 390,159,336
Subtotal	**$ (1,917,800,935)**	**$ (245,688,607)**	**$ (2,361,554,319)**	**$ (549,867,629)**
Total Impact	**$ 4,545,782,264**	**$ 1,929,686,512**	**$ 7,930,073,409**	**$ 9,619,325,230**

[49] Notes:

1. Figures for Intel in Table 19 differ from those presented earlier in the paper, due sub-dimensions that were omitted for the sake of comparability across companies (e.g. data on Wage Equity was unavailable for Apple, Costco, and Merck and therefore not included in the analysis above). To calculate US EBITDA for Apple and Merck, we assume the same % of total EBITDA as US revenue/Total revenue.
2. Wage Quality does not include the Equity sub-dimension.
3. Apple and Costco disclosed limited data regarding turnover rates and new hires. Additional detail on methodology used for these calculations is available upon request.
4. Health and Wellbeing includes one out of six sub-dimensions (Family Friendly Workplace practices), and does not include childcare or backup care.
5. Location analysis is based on data for 87% of Apple employees, 87% of Merck employees and 96% of Intel employees. Locations for Costco employees are calculated based on company office and store data.
6. Due to poor data availability, location analyses for Apple and Costco were conducted at the State (rather than County) level. This may impact the values for Location, Wage Quality (living wage), and Health and Wellbeing impact.
7. Salary data for Merck, Apple, and Costco is from publicly available crowdsourced data. The approximate percentage of employees represented in the salary data is 34% for Merck, 70% for Apple, and 8.5% for Costco.

Table 20: Wage and Non-Wage Impacts of Employment: Intel, Merck, Apple, Costco

	INTEL	MERCK	APPLE	COSTCO
Total Employees	52,618	23,426	89,072	162,861
Total Employee Impact	$6,463,583,198	$2,175,375,119	$10,291,627,728	$10,169,192,859
Impact per Employee	$122,840	$92,862	$115,543	$62,441
Wage Quality Impact	$6,968,926,896	$2,362,558,652	$10,583,352,871	$10,815,362,587
Non-Wage Impact	-$505,343,698	-$187,183,533	-$291,725,143	-$646,169,728
Non-Wage Impact per Employee	-$9,604	-$7,990	-$3,275	-$3,968
Non-Wage as % of Employee Impact	-8%	-9%	-3%	-6%

8. Discussion

Like financial accounting, the impact-weighted accounting methodology provides a framework for standardizing previously disparate measures of impact (Serafeim, Zochowski and Downing 2019). The development and adoption of GAAP created a common language for financial analysis and disclosure, and allowed managers, investors, regulators, and the public to make decisions based on consistent and transparent information. Today, those same stakeholders need now make decisions based on a growing set of material environmental, social, and governance (ESG) related information (Freiberg, Rogers, and Serafeim 2019). There is clear appetite for data, but the information reaching concerned stakeholders often adds complexity rather than clarity.

Impact-weighted accounts that capture employment impact are a critical tool to answer this call for credible, standardized insight into firm practices and performance. Our methodology and analysis of Intel, Apple, Costco, and Merck demonstrates the feasibility of measuring firm employment impact. Moreover, our analysis was produced using publicly available data, allowing for comparability and scalability. As such, we can produce employment impact-weighted accounts for a range of companies using this methodology.

As the practice of impact-weighted accounting expands to other geographies, there will be necessary adjustments both to the methodology, and to the interpretation of the impact statements. For example, a company currently using IWA in Sweden is omitting the analysis of race-based *opportunity* and *diversity* impact due to legislation prohibiting collection of this data. Geographies in which benefits, such as health care, are typically provided by the government rather than private firms will see different results in that impact dimension as well. We predict these geographical differences will provide valuable insights to a range of audiences, including investors, managers, and policy-makers.

Although the current framework's use of publicly available data provides some limitations in terms of scope and specificity (e.g. the use of salary bands rather than individual employee salaries, and reliance on voluntary disclosure), we expect increasing stakeholder pressure will result in improved disclosures of company employment-related information and therefore a significant advantage from designing a methodology based on the use of this data. Dimensions included in the case study that use imputed data, such as the health and wellbeing sub-dimension measuring the impact of workplace culture, are important to embed in the impact-weighted accounting methodology to drive investor and market-level demand for increased transparency into organizational performance.

We furthermore predict companies will begin to develop impact-weighted accounting statements using the methodology presented in this paper, as well as the IWAI environmental and product impact methodologies (Freiberg, Park, Serafeim and Zochowski 2020; Serafeim and Trinh, 2020). Just like with financial statements, we expect that companies will include their own commentary (or Notes) to present additional detail regarding their measures. These Notes will provide valuable explanations to dimensions that may differ between IWAI's analysis and a company's internal analysis. For example, Intel conducts an analysis of their diversity and inclusion practices by measuring organizational demographics compared to the national "skilled labor" population.[50] Intel, therefore, reports full representation based on their use of a significantly different denominator, and provides an example of a divergence from the IWAI *diversity* impact methodology which measures organizational representation compared to local demographics. While Intel's analysis demonstrates progress towards diversity, the methodology inherently highlights existing inequalities that exist in access to education and opportunity that are required to be included in the skilled labor pool. We expect additional examples of divergence between the IWAI methodology and company-specific reporting practices will be illuminated as we move towards the proliferation of impact-weighted accounting. These Notes will provide valuable discussion to encourage greater standardization, comparability, and rigor in measuring employee outcomes. It is also important to note that valuation is one of many tools used to evaluate impact, and may be corroborated with other sources; this is similar to the process of due diligence in financial markets in which an educated buyer will use multiple sources to supplement a firm's financial statements.

Future research will expand application of the impact-weighted accounting methodology across additional sectors, as well as non-US geographies. In partnership with companies and investors, this analysis will further prove feasibility, and allow for valuable comparisons between firms and industries. A deeper dataset will allow us to explore potential relationships between the employment impact dimensions presented in this paper. For example, we will examine relationships between dimensions such as family friendly workplace benefits (*health and wellbeing)* and female representation (*opportunity and diversity)*, and preventative health and wellbeing (*lifestyle and chronic disease management)* programming and a firm's injury and illness rate (*safety)*. We will also prioritize inclusion of part-time, contract, and outsourced employees in future analyses, recognizing that workers without full time employment are at greater risk for negative impacts. Finally, we will draw from publicly available data to produce insights on how firms are creating value through employment, using the framework and methodology presented in this paper. Over time, the use of impact-weighted accounting for environmental, product, and employment impact will demonstrate the feasibility and necessity of standard Generally Accepted Impact Principles. Much like Generally Accepted Accounting Principles (GAAP), they will evolve, while providing a stable foundation for transparency and communication for a broad range of stakeholders.

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[50] Intel does not specify how the "skilled labor" population is defined. Intel's Diversity Newsroom report: https://newsroom.intel.com/news/intel-achieves-goal-full-us-workforce-representation-notes-just-beginning/?wapkw=full%20representation#gs.8zr12z

Appendix 1: Subjective Wellbeing Impact

This analysis is recommended as a parallel component of employment impact-weighted accounting. The rationale and methodology is provided below, as well as an illustration using Intel's crowdsourced employee satisfaction data. Despite the importance of measuring employee wellbeing, it is presented as supplemental due to the fundamentally interconnected nature of subjective well-being and the previously described employment impact dimensions (e.g. employee fulfillment is very likely to be impacted by their opportunities for career advancement, the quality of wages received, and other components of the employment impact framework). In the absence of causal inference data to determine the relationship between previously described employment impact dimensions and employee subjective wellbeing, the valuation described below should be interpreted in parallel to the previous dimensions.

Contribution to Employment Impact

A long stream of research illuminates the relationship between happiness at work and subjective well-being (SWB). SWB includes a wide range of terms and potential measures, including life satisfaction, purpose, and happiness (Fujiwara, et al., 2015). Critically, SWB analysis is based on self-reported responses from employees, giving workers a direct voice into job quality assessment.[51]

The foundational relationship between work and life is embodied in the "spillover hypothesis", which argues for a positive relationship between job satisfaction and life satisfaction with causality running both ways (Tait, et al., 1989; Bowling, et al., 2010). Notably, competing hypotheses of the relationship between job satisfaction and life satisfaction – namely segmentation, which argues that there is no association between the two, and compensation, which argues that high satisfaction in either life or job can "make up" for the other domain – have been largely disproven (Unanue, et al., 2017). The most common hypotheses in employee wellbeing literature draw a "bottom up" causal inference from job satisfaction to life satisfaction (rather than top-down from life satisfaction to job satisfaction, or bidirectional) (Unanue, et al., 2017). There is ongoing research into each of these causal hypotheses, however there is significant evidence to support the spillover effect and therefore establish a deep interdependence between life and job satisfaction.

There have been significant efforts to study and address the specific factors of employment that influence subjective wellbeing. The 2019 Great Jobs Study finds that 79% of workers who self-report they are in good quality jobs report high life satisfaction, while only 32% of workers in bad jobs report high life satisfaction (Rothwell and Crabtree, 2019). Further, a 2016 meta-analysis showed significant association

[51] For more information regarding the importance of stakeholder voice, refer to resources from 60 Decibels and the Global Impact Investing Network: https://www.60decibels.com/work and https://iris.thegiin.org/document/iris-for-incorporating-stakeholder-voice/

between the satisfaction of psychological needs, job satisfaction, and higher subjective wellbeing (Van den Broeck, et al., 2016). A 2017 study adds support to the influence of "needs satisfaction", which measures the extent to which individuals' basic psychological needs such as autonomy, competence, and relatedness[52] are met through their work (Unanue, et al., 2017). Many researchers strive to identify additional factors influencing job satisfaction and subjective wellbeing. For example, one study that analyzed data from the UK's Annual Population Survey found that creative occupations are statistically associated with higher levels of life satisfaction, worthwhileness, and happiness when compared to non-creative occupations (Fujiwara, et al., 2015). Additional research shows a significant influence of "non-financial" job characteristics on life satisfaction, including workplace trust and the quality of workplace social capital (Helliwell and Huang, 2005).

The relationship between job satisfaction and life satisfaction of deep importance because of the multifaceted implications of SWB. SWB has physiological effects, demonstrated by a depth of research proving the connection between happiness and health outcomes (Adler, 2017). SWB positively predicts health and longevity, including in longitudinal analysis, and when controlling for socioeconomic status, baseline health factors, and multiple other variables (Diener and Chan, 2011). Similarly, workplace factors associated with low job satisfaction, such as low levels of autonomy, have been associated with increased health risk such as coronary heart disease (Kuper and Marmot, 2003). In addition to the physiological importance of SWB, people place high importance on their happiness. A 2015 study of 13,000 individuals in the United States and United Kingdom found that life scenarios that maximized levels of happiness were rated above those with high rating levels for income, knowledge, career success, and family relationships (Adler, et al., 2015).

There has been important progress to note regarding the measurement of SWB. The OECD published Guidelines to Measuring Subjective Wellbeing (OECD, 2013) and also includes Life Satisfaction in its widely used Wellbeing Index.[53] The Impact Institute recommends including the Wellness Effects of Employment in company's Integrated Profit and Loss (IP&L) statements as a measure of human capital, due to the potential positive impacts of work on self-esteem, autonomy, and social relations (Reinier de Aldehart Toorop and Kuiper, J., 2019). Additional tools for analysis are emerging, such as The Workforce Purpose Index, which is based on research connecting meaningful relationships, a feeling of having an impact, and opportunities for growth to self-reported employee fulfillment (Imperative, 2019). Some companies are leading the way, such as ABN AMRO, a Dutch bank that calculated and published an annual

[52] The basic psychological needs for autonomy, competence, and relatedness are referred to as self-determination theory (SDT) and are the foundation of a large body of research. To explore the relationship between SDT and work, see Van de Broeck et al, 2016.
[53] For more information on the OECD Wellbeing Index, see: http://www.oecdbetterlifeindex.org/topics/life-satisfaction/

wellbeing impact value of EUR 250 million in 2019 using the IP&L methodology (ABN AMRO, 2020). These are important developments in signaling to employers and investors that worker wellbeing is deeply valuable.

Despite advances in measurements practices, employment-related SWB remains poor. Only 33% of workers surveyed in the Workforce Purpose Index reported they were fulfilled in 2015 (Imperative, 2019). Similar evidence from the 2019 Great Jobs Survey in the United States finds that only 40% of workers are in good quality jobs (defined as having high satisfaction rates across the ten job characteristics that workers rank as most important) (Rothwell and Crabtree, 2019). Further, the frequently-referenced concept of employee engagement tends to focus heavily on benefits to organizations (such as increased productivity or decreased turnover) rather than employee wellbeing (Robertson and Cooper, 2010). However, there is extensive research linking wellbeing to business outcomes, which suggests a mutual incentive between firms and employees in shifting focus to broader SWB measurement and management (Robertson and Cooper, 2010).

Monetization Methodology

The relationship between job satisfaction and life satisfaction has a substantial evidence base, as discussed above. Using this data, we employ the Life Satisfaction Approach (LSA) to valuation of non-market goods to monetize employee subjective wellbeing (Fujiwara and Campbell, 2011). The LSA can also be described as SWB valuation, which has been used to derive monetary values based on income equivalent figures for a range of goods and is distinct from willingness to pay and willingness to accept methodologies (Dolan and Fujiwara, 2016).

The basic steps to identify the Subjective Wellbeing Impact of employment are as follows:

G1) Identify the employee job satisfaction rate and normalize to a 0-10 scale. You can use data from an employee fulfillment or engagement study as well.

G2) Calculate the surplus or gap in employee satisfaction at your company compared to the best-in-class benchmark. For this analysis, we use 92% based on Glassdoor's Best Places to Work data.[54]

Satisfaction rate performance = Company satisfaction rate – Benchmark Satisfaction Rate

G3) Determine the surplus/gap in life satisfaction due to job satisfaction. We use the factor of 0.66 (Bowling, et al., 2010).[55]

[54] Glassdoor Best Places to Work data from 2020 reports a satisfaction rate of 4.6 out of 5 for the top employee-rated places to work. We convert 4.6/5 to a 0 – 10 scale to be comparable to other survey data.

[55] See Bowling, et al., 2010 Table 4: Job satisfaction Time 2 regressed on SWB Time 1, scaled to 0 - 10 point scale.

*Life satisfaction gap/surplus = Satisfaction rate performance (G2) * 0.6*

G4) Calculate the value gained or lost from the life satisfaction surplus/gap to determine the ***subjective wellbeing*** impact of employment at the firm. We use a monetization factor of $8,828 per one point increase in life satisfaction (Huang et al, 2018).[56] We assume even distribution across all employees.

*Subjective wellbeing impact = Life satisfaction surplus/gap (G3) * Value of increased life satisfaction per point ($8,828)* Total number of employees*

Intel Case Study

Intel did not publish an employee satisfaction rate publicly, therefore our team uses data from Glassdoor that was submitted by Intel's employees. We note that this uses imputed data as the source for analysis. While directly sourced data would be preferable, we find support in academic literature for the use of crowd-sourced information such as Glassdoor (Landers, et al., 2019). We find a satisfaction rate of 4.3 out of 5 for Intel employees, which we normalize to 7.9 on a 0-10 scale. Table 21 below presents the calculation for *subjective wellbeing* impact, resulting in a negative value of ($169 million) for FY 2018. In Table 22, we present *subjective wellbeing* impact for 25 additional companies using the same methodology.

Table 21: Intel Subjective Wellbeing Impact

	Subjective Wellbeing	**2018**
A	Number of employees	52,618
B	Employee job satisfaction	7.88
C	Best-in-class job satisfaction	8.43
D	Satisfaction surplus/gap	(0.55)
E	Impact of job satisfaction on life satisfaction	0.66
F	Surplus/gap life satisfaction from job satisfaction	-0.363
G	Value of 1 point increase in life satisfaction	$8,825
H	Value gained/lost from surplus/gap in life satisfaction	($3,203)
I	**Total Subjective Wellbeing impact**	**$ (168,560,448)**

[56] A one-off income loss of $10,000 AUD lowers life satisfaction by 0.8 units (p. 134, see also Table 2). We assume even distribution to calculate a value of $12,500 AUD per 1 unit of life satisfaction, and convert to USD at 1 AUD to .706 USD per study year rates (2018).

Table 22: Subjective Wellbeing Impact 2018

Company	Employees	Employee Satisfaction	Surplus/Gap from Best-in-Class	Job impact on life	Total Impact	Impact per Employee
Nvidia	6,033	8.6	0.18	0.12	$ 6,442,188	$ 1,068
Facebook	19,679	8.4	-	0.00	$ -	$ -
Salesforce	21,148	8.1	(0.37)	-0.24	$ (45,164,726)	$ (2,136)
Boston Scientific	15,371	8.1	(0.37)	-0.24	$ (32,827,076)	$ (2,136)
Intuit	5,911	7.9	(0.55)	-0.36	$ (18,935,741)	$ (3,203)
Adobe	10,600	7.9	(0.55)	-0.36	$ (33,956,835)	$ (3,203)
Intel	52,618	7.9	(0.55)	-0.36	$ (168,560,448)	$ (3,203)
Cisco	37,209	7.7	(0.73)	-0.48	$ (158,930,802)	$ (4,271)
Apple	89,072	7.7	(0.73)	-0.48	$ (380,453,234)	$ (4,271)
Splunk	3,149	7.5	(0.92)	-0.61	$ (16,812,905)	$ (5,339)
Costco	163,681	7.5	(0.92)	-0.61	$ (873,913,319)	$ (5,339)
Merck	23,426	7.3	(1.10)	-0.73	$ (150,089,211)	$ (6,407)
Costco	162,861	7.3	(1.10)	-0.73	$ (1,043,442,284)	$ (6,407)
Citrix	4,008	7.2	(1.28)	-0.85	$ (29,958,898)	$ (7,475)
Accenture	51,856	7.2	(1.28)	-0.85	$ (387,611,932)	$ (7,475)
Juniper	4,192	7.2	(1.28)	-0.85	$ (31,334,257)	$ (7,475)
Servicenow	21,148	7.2	(1.28)	-0.85	$ (158,076,542)	$ (7,475)
Hewlett Packard Enterprise	16,354	7.0	(1.47)	-0.97	$ (139,705,680)	$ (8,543)
Lyft	2,338	7.0	(1.47)	-0.97	$ (19,972,599)	$ (8,543)
Bank of America	169,708	7.0	(1.47)	-0.97	$ (1,449,747,561)	$ (8,543)
Ebay	7,055	6.8	(1.65)	-1.09	$ (67,801,548)	$ (9,610)
PaloAlto	3,643	6.2	(2.20)	-1.45	$ (46,681,038)	$ (12,814)
Chipotle	73,643	6.2	(2.20)	-1.45	$ (943,654,038)	$ (12,814)
BNY Mellon	27,561	5.9	(2.57)	-1.69	$ (412,024,548)	$ (14,950)
MDU	12,836	5.9	(2.57)	-1.69	$ (191,892,424)	$ (14,950)

*2019 data

Additional companies at best in class benchmark ($0 impact): HubSpot, Lululemon, Google, In-N-Out Burger, Boston Consulting Group, Bain & Company, Facebook

Appendix 2: Wage Quality

Marginal Impact of Income Function

Drawing on research that suggests the marginal utility of income decreases as income increases (Layard et al., 2008; Jebb et al., 2018; Diener et al., 1993), we design a function to convert raw salaries into impact values at a marginally decreasing rate. The function is underpinned by two key principles: first, the functional form of the marginal rate, which should show accelerating reduction of the marginal utility of an additional dollar of wages for higher level of wages and, second, identification of an inflection point at which a raw wage should begin to reflect decreasing marginal returns. While we strive to design a functional form and identify an inflection point based on a broadly applicable methodology that is aligned with research on the marginal utility of income, more research is needed to empirically test the nature of the income-impact relationship. Such research could guide applications of the measurement of wage quality.

Functional Form

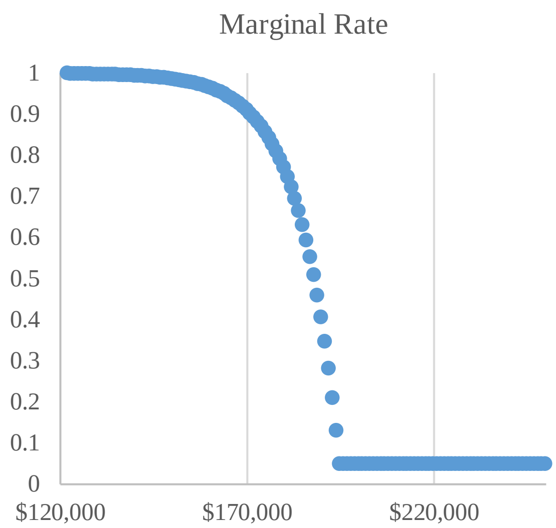
We design a function such that the marginal rate takes a negative exponential functional form. Therefore, the curve that describes the adjusted salaries is a natural logarithm. Exhibit A1 provides a visual representation of each function. The inclusion of the marginal impact of income function to our framework provides a method for distinguishing between a firm that pays 10 employees each $10,000,000 in salaries and a firm that pays 1,000 employees each $100,000 in salaries (both pay $100,000,000 in total salaries). The use of a negative exponential function to describe the marginal rate allows for a conservative approach to adjusting salaries above, but close to, the designated inflection point (discussed below). Exhibit A1, Marginal Rate, begins at $120,000 and shows the marginal rate reaches approximately $182,000 before falling bellowing 0.70. This translates into a salary of $182,000 being adjusted down by approximately $3,000, as shown in Table 23. We construct a discontinuity in the function when the marginal rate reaches 0.05, and set the marginal rate constant at 0.05 for all increased salary values. In this function, the discontinuity is reached at a raw salary of approximately $194,000, which is adjusted to $184,000. Incomes of this level are well above the 90th percentile for individual incomes in the United States, and while it is important to provide some incremental impact for salaries above this value, we posit that the incremental impact is very low compared to lower incomes.[57]

Inflection Point

Jebb et al. (2018) identify the income satiation level for life evaluation is $105,000 on average for North America. We use this value as the inflection point at which the marginal impact of incomes begins decreasing. However, just as the living wage varies across geographies, this average level of income satiation likely varies across geographies. According to the MIT living wage calculator, the average living wage in the US for a family of four (two children, two working adults) is $34,403. We calculate the average living wage for Intel employees to be $39,874, approximately 16% above the national average. To incorporate a contextual measure of location into the inflection point, we increase the average income satiation by 16%, moving from $105,000 to approximately $122,000. Based on the regional income satiation values in the Jebb et al analysis, as well as the availability of living wage estimates in other geographies, we can replicate this location-based adjustment in future analyses. Table 23 describes marginal rate and approximate adjusted salary for intervals of $10,000.

[57] U.S. Bureau of Labor Statistics. https://www.bls.gov/news.release/wkyeng.t05.htm.

Exhibit A1: Marginal Rate and Raw and Utility-Adjusted Salaries



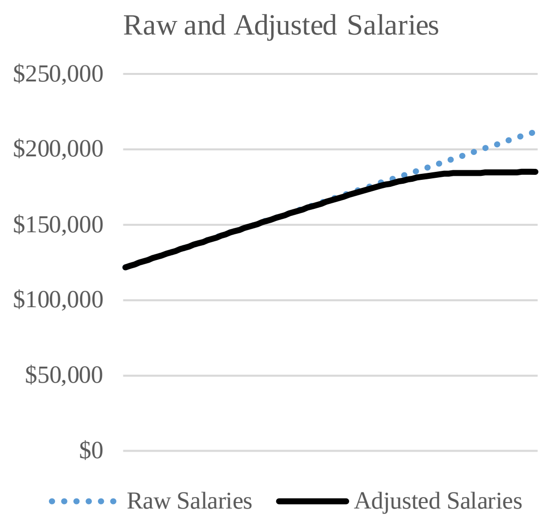


Table 23: Utility-Adjusted Salaries

Raw Salary	Marginal Rate	Adjusted Salary
$100,000	1.000	$100,000
$110,000	1.000	$110,000
$120,000	1.000	$120,000
$130,000	0.998	$129,684
$140,000	0.995	$139,650
$150,000	0.987	$149,562
$160,000	0.966	$159,332
$170,000	0.912	$168,736
$180,000	0.771	$177,190
$190,000	0.407	$183,179
$200,000	0.050	$184,450
$210,000	0.050	$184,950
$220,000	0.050	$185,450
$230,000	0.050	$185,950
$240,000	0.050	$186,450
$250,000	0.050	$186,950

Table 24: Intel Living Wage and Marginal Impact of Income Impact

Minimum Salary	Maximum Salary	Employees	Average Salary	Total Salaries	Living Wage?	Adjusted Average Salary	Adjusted Total Salaries
-	$19,239	637	$19,239	$12,255,243	N	$0	$0
$19,240	$24,439	237	$21,840	$5,175,962	N	$0	$0
$24,440	$30,679	338	$27,560	$9,315,111	N	$0	$0
$30,680	$38,999	472	$34,840	$16,444,244	N	$0	$0
$39,000	$49,919	713	$44,460	$31,699,624	Y	$44,460	$31,699,624
$49,920	$62,919	1587	$56,420	$89,537,747	Y	$56,420	$89,537,747
$62,920	$80,079	3921	$71,500	$280,349,540	Y	$71,500	$280,349,540
$80,080	$101,919	7441	$91,000	$677,127,280	Y	$91,000	$677,127,280
$101,920	$128,959	8999	$115,440	$1,038,840,061	Y	$115,440	$1,038,840,061
$128,960	$163,799	8973	$146,380	$1,313,463,254	Y	$146,288	$1,312,637,738
$163,800	$207,999	7926	$185,900	$1,473,439,437	Y	$181,452	$1,438,184,589
$208,000	-	11374	$208,000	$2,365,792,000	Y	$184,680	$2,100,550,320
Total Unadjusted Salaries		$7,313,439,500					
Total Adjusted Salaries		$6,968,926,896					

Appendix 3: Wage Equity Example

Table 25: Intel Wage Equity Impact

	White	Black	NHPI	Asian	American Indian	Two+	Hispanic or Latino
Male							
Executive/Senior Officials & Managers	$0	$0	$0	$0	$0	$0	$0
First/Mid Officials & Managers	$0	$1,874,742	$225,851	$0	$0	$647,789	$3,442,295
Professionals	$0	$34,881,200	$1,162,250	$67,243,936	$1,966,915	$8,436,916	$38,169,650
Technicians	$0	$3,151,998	$238,149	$2,512,800	$1,157,358	$1,509,898	$2,589,139
Sales Workers	$0	$163,361	$0	$0	$0	$23,225	$0
Administrative Support	$0	$73,798	$0	$0	$0	$8,312	$40,267
Craft Workers	$0	$217,249	$66,761	$37,611	$4,710	$138,886	$0
Net Male Impact	$0	$40,362,347	$1,693,010	$69,794,348	$3,128,983	$10,765,025	$44,241,350
Female							
Executive/Senior Officials & Managers	$0	$0	$0	$0	$0	$0	$0
First/Mid Officials & Managers	$5,969,813	$1,017,174	$0	$3,027,323	$246,619	$659,508	$1,672,349
Professionals	$60,581,959	$14,426,171	$390,212	$145,501,128	$1,634,883	$4,370,542	$38,169,650
Technicians	$6,544,841	$1,749,296	$439,536	$2,528,137	$350,593	$1,415,130	$2,589,139
Sales Workers	$492,408	$96,945	$0	$319,526	$0	$0	$0
Administrative Support	$0	$441,090	$0	$0	$0	$248,427	$40,267
Craft Workers	$433,333	$14,701	$0	$0	$58,641	$73,922	$0
Net Female Impact	$74,022,353	$17,745,377	$829,748	$151,376,114	$2,290,735	$6,767,529	$42,471,405
Total Equity Impact	$465,488,325						

Appendix 4: Health and Wellbeing Dimension Calculations

Table 26: Intel Company Information Used in Health and Wellbeing Analysis

Company Information	
Number of Employees (total)	52,618
# of Female Employees	14,162
# of Male Employees	38,456
Company Average Weekly Salary	$ 2,459
Company Average Hourly Salary	$ 61
Childcare	
Weighted Average Local Cost of Childcare	$ 9,968
Weeks of Paid Family Leave for Men (Working Mother)	8
Weeks of Paid Family Leave for Women (Working Mother)	8
Healthcare	
Consumer Satisfaction with Healthcare Plans	2.32
Sick Leave	
Company Provided Paid Sick Leave Days	10

Table 27: Labor Force Participation Rates Calculations

Labor Force Participation		**Notes/Assumptions/Sources**
Male Labor Force Participation Rate	69%	*Statista*
# of Men in US	151,800,000	*Census*
# of Men in Labor Force	104,893,800	
# of Fathers w/ Kids Under 18 in US	26,600,000	*Census*
LFPR for Fathers w/ Kids Under 18	93.40%	*Bureau of Labor Statistics*
# of Fathers in Labor Force	24,844,400	
% of MLF with Children Under 18	23.7%	
Female Labor Force Participation Rate	57.30%	*The Fed*

# of Women in US	157,000,000	*Census*
# of Women in Labor Force	89,961,000	
# of Mothers w/ Kids Under 18 in US	43,500,000	*InfoPlease*
LFPR for Mothers w/ Kids Under 18	74.60%	*Department of Labor*
# of Mothers in Labor Force	32,451,000	
% of FLF with Children under 18	36.1%	

Table 28. Intel Number of Employees w/ Children Under 6 Calculations

Number of Employees w/ Children Under 6		
Total Kids Under Age of 18 (mil)	73.4	*KidsCount*
Total kids Under Age of 6 (mil)	23.8	*ChildStats*
% of Minors Under Age 6	32.43%	
% of FLF with Children Under 18	36.1%	*Table 24*
% of FLF with Children Under 6 (Implied)	11.7%	
# of Female Intel Employees w/ Children Under 6	1,657	
% of MLF with Children Under 18	23.7%	*Table 24*
% of MLF with Children Under 6 (Implied)	7.7%	
# of Male Intel Employees w/ Children Under 6	2,953	

Table 29: Intel Average Amount of Childcare Support

Average Amount of Childcare Support*	
Discount/Tuition Support Provided	15%
Local cost of childcare (see Table 30)	$9,968
Average Amount of Childcare Support	$1,495

**For employees with children under age 6*

Table 30: Intel Weighted Average Cost of Childcare Calculation

Location (City)	Location (State)	Employees	% Employees	Cost of Childcare
Austin	Texas	1,700	3.4%	$ 7,062
Chandler	Arizona	12,000	23.7%	$ 8,547
Folsom	California	6,000	11.8%	$ 11,475
Fort Collins	Colorado	600	1.2%	$ 12,390
Hillsboro	Oregon	21,000	41.4%	$ 10,061
Rio Rancho	New Mexico	1,200	2.4%	$ 7,609
Santa Clara	California	6,500	12.8%	$ 11,475
San Jose	California	1,700	3.4%	$ 11,475
Total		**50,700**	**100.0%**	
Weighted Average Cost of Childcare		**$ 9,968**		

Note: Total employees is 52,618, however location information was available at time of analysis for 50,700

Source: Economic Policy Institute, 2019. Childcare Costs in the United States. Cost data from 2017-2019.

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