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REPORT

June 2018

Global research

People analytics:

driving business
performance with
people data

The CIPD is the professional body for HR and people development. The not-for-profit organisation champions better work and working lives and has been setting the benchmark for excellence in people and organisation development for more than 100 years. It has more than 145,000 members across the world, provides thought leadership through independent research on the world of work, and offers professional training and accreditation for those working in HR and learning and development.

Workday is a leading provider of enterprise cloud applications for finance and human resources. Founded in 2005, Workday delivers financial management, human capital management, and analytics applications designed for the world's largest companies, educational institutions, and government agencies. Organizations ranging from medium-sized businesses to Fortune 50 enterprises have selected Workday.

Report

People analytics: driving business performance with people data

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1 Foreword from the CIPD

Data and technology are at the very forefront of innovation in HR as they are in so many parts of business today. As many organisations modernise and incorporate data and technology into their workforce practices, we see many new opportunities emerging to use people data to better understand who our workforce are, how they work, and what work means to them. Insights from people data offer the opportunity to change the way workforce decisions are made in organisations, from those driven by instinct or habit alone to those which are evidence-based and focused on developing long-term, positive outcomes. Even the most basic people data itself holds considerable potential value to organisations when used correctly, as we are seeing through the recent insights from gender pay gap reporting.

It's not only inside organisations where people data has the potential to shape work for the better. External stakeholders such as investors, regulators and, increasingly, prospective employees are seeking people and organisational data to shape their understanding of organisations. Measurement and reporting of the workforce is enabling HR to uncover previously hidden aspects of work, and in some cases even shaping the relationship employees have with their organisations. From understanding the movement of pickers around fulfilment warehouses to spotting patterns in decisions of investment bankers on the trading floor, people data is more and more becoming part of how we gain insights to improve performance and productivity, but also the engagement and positive experience of work for people.

Integral to all of this is the concept of transparency. We know that openness and integrity are essential in maintaining trust, and we must be transparent in where and how we use data and information about people, even beyond the requirements of the GDPR regulations. But transparency externally on people and organisational data is increasingly expected, and is equally essential in building trust and confidence with all external organisational stakeholders.

However, there is still much further to go if organisations are to realise the true value of people data. The HR profession needs to progress more on investing and building their skills for understanding and using data, and there needs to be strong connection across businesses between people data and other organisational and business measures. Confidence and capability are still considerable barriers that prevent many HR professionals from using people data, and many organisations have fallen behind in the investment in systems and good bases of integrated data in the HR domain, relative to other areas of business. Technology including AI can help in connecting disparate data sources, and very importantly in helping to provide analysis, visualisation and insight.

Leading organisations are investing more in this space, and the interest in people analytics is accelerating. Sharing of experience, good practices, and what can be used in scalable cost-effective ways even in the smallest businesses is something we want to help with, and this insightful and extensive research with our partners at Workday helps to do that.

This report sheds light on opportunities globally for people analytics to further develop and embed into the HR profession. And, by looking across to our colleagues in other areas of business, we can see the exciting role people data can play in helping organisations to understand their people better and help them to realise their full potential.

Peter Cheese
CEO, CIPD

2 Foreword from Workday

Following Workday's successful sponsorship of the *HR Outlook* survey over the last two years, we are pleased to partner with the CIPD to produce the *People Analytics: Driving business performance with people data* report. The study aligns perfectly with Workday's commitment to helping our customers improve the quality of their people decisions through better data and insights.

The potential benefits of analytics and data have been well documented, and as this research clearly shows, businesses exhibiting strong people analytics cultures achieve stronger business performance than those who don't. Yet, while the business case for people analytics may be clear, the journey to get there has its roadblocks. Organisations face a multitude of challenges from the outset, from initially gathering the data, through to securing the information in accordance with a constantly evolving regulatory landscape, including the European Union's General Data Protection Regulation (GDPR). From storing and managing data through to businesses ensuring they are granting data access only to the right people, there are numerous compliance challenges for businesses to contend with.

And then we have the great analytics skills debate. How do organisations find or train the right talent to lead the people analytics revolution? Data is only useful if it is interpreted effectively and in a fashion that business leaders can use. That means having the right analytical skills at the organisation's disposal. Similarly, people analytics should be available in real time and on demand so that they can be quickly used to make effective decisions.

Historically, there has been a degree of separation between transactional HR systems and reporting tools, with data copied across periodically from one to the other. Not only has this led to delays in using people data for decision-making, but it also raises questions about the accuracy and integrity of the data, given it has to be reintegrated before it is analysed. This data ages quickly and lives in a silo, disconnected from the business processes or strategies it should be used to support.

The emergence of the GDPR only intensifies the need for better management of HR data and indeed how people analytics should be delivered. At Workday, we're seeing organisations shift towards the general trend of keeping their people data securely within their HR system. Having faced the rigours of GDPR, it's important that businesses can meet future changes in regulatory compliance and that is best achieved by keeping employee data in one system. Organisations should use their HR system as the central point for people analytics, meaning they should import non-HR data back into the system rather than export HR information to external data lakes or tools.

This is evident with modern technology, including Workday, bringing together all people data into one place and securing it via a single security model. Bringing together reporting and analytics directly into the HR system means there is no need for separate reporting tools. We hope you find the research useful as you continue your people analytics journey and we look forward to hearing your thoughts.

Gonzalo Bedit

President, EMEA and APJ, Workday

3 Introduction

In 2004 Lawler, Levenson and Boudreau published their paper *HR Metrics and Analytics: Use and impact*. Their important work signalled a changing world in which HR needed to modernise with a new focus on data. HR capability regarding workforce data (or ‘metrics’) and analytics was at that time considered to be lacking, and strategic HR management was not yet using data to drive business decisions. To overcome this Lawler and colleagues called for HR analytics to break free of the function to have impact, by integrating across the business. HR analytics was to become critical practice for all business functions, not just HR.

To put this provocation in context: in 2004 the world of work was in the middle of very radical change, enabled by technological innovation and drive by rapid improvements in computing capabilities. At the same time as HR was challenged to modernise, USB sticks became the established norm for data transfer. The language of ‘the internet of things’ had not yet been coined. Facebook was only a year old. At the beginning of the so-called data explosion in 2004, Lawler and colleagues were calling for HR to step up and lead the business towards using people data to drive business impacts. They were calling for something revolutionary to happen in the HR profession.

Fourteen years on, the workplace has in some ways radically changed, and in others stayed very much the same. While some technology- and knowledge-based organisations have taken to flexible working practices that make the most of the digital revolution, the ‘always on’ culture of technology-enabled work has blurred the boundary between work and personal life. The rapid increase in digitally connected devices means that very many data points now exist from which organisations can understand their workforce in more detail. Personal fitness technology collects heart-rate data and enables stress rates to be calculated. Warehouse pickers have their productivity measured and performance set in real time. Workplace data is now more available than ever to the business, and the HR profession is uniquely positioned to understand, through people data and insights, if and how the workforce is contributing to overall business performance.

Performance, however, is not the only outcome HR analytics can shine a light on: HR has access to measures above and beyond performance that connect to important workplace concepts: issues relating to corporate culture, well-being and elements of work related to job quality (for example engagement and satisfaction with work) are all to varying extents measureable, and today could be better understood through people analytics (Charlwood et al 2017). With rising debates on the quality of modern work (for example Taylor et al 2017, Gifford 2018), the data organisations collect about their workforce has increasing weight and importance for numerous internal and external stakeholders.

HR analytics to people analytics: is there a difference?

People analytics, HR analytics, human capital analytics are all terms used to describe the practice of applying analysis processes to workforce data to understand workforce-related business issues (for more information see Charlwood et al 2017, Houghton 2017). Very few papers have been published that provide an evidence-based view on the topic. For a definition of HR analytics, we build on the recent evidence-based review by Marler and Boudreau (2017), which describes the concept in the following way:

'HR analytics consists of a number of processes, enabled by technology, that use descriptive, visual and statistical methods to interpret people data and HR processes. These analytical processes are related to key ideas such as human capital, HR systems and processes, organisational performance, and also consider external benchmarking data.'

Marler and Boudreau 2017

We therefore suggest that people analytics is a re-badging of the concept of HR analytics, and adopt this terminology in this report.

4 People analytics: enabling data-driven insights

People data can be recognised as a form of evidence, important for improving decision-making by professionals, including HR. Evidence-based practice recognises people data as part of 'organisational internal data', one of four forms of evidence alongside scientific literature, professional expertise, and stakeholder values and concerns (Barends et al 2014). Evidence-based practice *'helps management to critically evaluate the validity, generalizability and applicability of evidence'* and makes a favourable outcome more likely (CEBMA 2018). It is important, therefore, that the HR profession understands people data if it is to become more evidence-based and improve decision-making, within the function and across its internal and external stakeholders (Houghton 2017).

People analytics practice is undertaken to provide executives, HR professionals and line managers with information needed for workforce support and HR analytics, for example employee performance feedback, impact of performance pay and alignment between workforce costs, business strategy and employee performance (Aral et al 2012). Research has shown that organisations are applying HR analytics to a broad array of workforce issues – moving beyond descriptive analytics and basic data reporting towards the realm of predictive analytics insights (Falletta 2014). Numerous systems and tools are available that provide a multitude of outputs, from basic reporting of 'people metrics' or 'HR metrics' and descriptive analytics through to predictive and prescriptive analytics (Bassi 2011, Evans 2012). Table 1 outlines these areas further.

Table 1: Analytics types (adapted from Evans 2012)

Type	Description	Reference
Descriptive analytics: for example HR metrics, HR reporting, HR benchmarking, HR scorecard	Summarise data into meaningful charts and reports, often representing trends over time. Lagging data of historical insights.	Evans 2012
Predictive analytics: for example intention to leave, predicted sick days per period	Using historical data to predict future outcomes using data to model relationships between variables and then extrapolating these relationships forward in time. Predictive analytics helps to highlight relationships undetectable through standard descriptive methods. Able to offer trend analysis and forecasting. Combination of lagging data to creating leading indicators.	Evans 2012
Prescriptive analytics: for example combination of product turnover data, pricing strategy, and worker rota to design optimal opportunity for successful sales	Using optimisation to identify the best alternatives to minimise or maximise an objective. The mathematical and statistical techniques of predictive analytics can also be combined with optimisation to make decisions that take into account the uncertainty in the data.	Evans 2012

People analytics: hype or reality?

For some, the lack of robust, high-quality studies of analytics practice and outcomes risk labelling people analytics as a well-established fad. While analytics practice may have value-adding capacity, if it is treated as a fad without a long-term investment perspective in mind, there is little impetus to invest in the analytics capabilities of people functions, nor invest in the development of the analytics value chain (Platanou and Mäkelä 2016, Angrave et al 2016). A lack of insight into the mechanics of analytics practice, poor bridging of the academic and practice gap, and a ‘journalistic approach’ to analytics outcomes have all been highlighted as reasons why, to date, HR analytics has risked becoming a fad that may not reach its value-adding potential (Rasmussen and Ulrich 2015).

That people analytics scholarship tends to, like other business analytics domains, not cross-reference analytics disciplines (for example process analytics and customer/user analytics) is a critique both of the body of knowledge around business analytics in its various guises, and the resulting utilisation of analytical capability within organisations (Holsapple et al 2014). It is perhaps for this reason that there is a push to centralise analytics functions and capability across all analytics domains, but this itself possesses risks, particularly with the interpretation and utilisation of the outcomes of analytics processes (for example the interpretation of workforce issues outside of an ethical frame).

That being said, researchers suggest that continued hype surrounding HR/people analytics is one of the reasons why there is the perception of widescale adoption of analytics practices and an implicit belief in the utility of analytics activities and outcomes, irrespective of any supporting published evidence (Platanou and Mäkelä 2016). There is little evidence of whether people analytics practice has become business-as-usual (BAU) in organisations. It is for these reasons that further research is needed to map differing perspectives on analytics practice, and to investigate how people analytics practice works, and the levels of adoption of these practices (Charlwood et al 2017). This research aims to help prompt further investigation into people analytics practice by highlighting the emerging trends, and surfacing the tensions between multiple perspectives on people analytics outcomes.

For some time experts have called for people analytics practice to become mainstream in the HR profession and targeted towards a broader set of HR issues – moving out of the

centres-of-excellence model, and instead analytics skills being widely adopted by more generalist HR professionals (Levenson 2011, Rasmussen and Ulrich 2015). These ideas have been picked up by the broader data science community and those who are operating with prescriptive analytics practice in mind; here outsourced models from the HR function are integrating people data alongside other forms of business information (BI): for example sales rates, product turnover. The combination of these data sets through technology suites offers an opportunity for people analytics to form part of the overall business data suite, and services are now offering this capability. This does, however, raise some important questions about the knowledge of non-HR analysts regarding people issues; in particular, if HR relinquishes people analytics practice to non-HR functions, how will HR capability change, and is it likely that key people risks, which need data to be understood fully, will be managed effectively?

Beyond HR: why people data matters to a broader set of stakeholders

External stakeholders are increasingly interested in measures relating to workforce information. In the UK regulators such as the Financial Reporting Council and Financial Conduct Authority have increased their engagement on workforce issues, particularly corporate culture (FRC 2017, FCA 2018). CIPD research into the investor perspective has shown that there is interest in the environmental, social and governance (ESG) investment community towards workforce information (Houghton et al 2017). And work by the Pensions and Lifetime Savings Association on workforce disclosures, and the Shareaction-led Workforce Disclosure Initiative have continued to highlight the importance of workforce information to institutional investors and the ethical investment community (PLSA 2017, Shareaction 2018). For example, human capital disclosure has been shown to positively impact organisational performance, as measured by market-to-book ratio and return on assets – particularly in knowledge-based sectors (Lin et al 2012).

The link between functions for people data has been a subject of much research, particularly with the development of integrated data suites. The CIPD's own research into the use of human capital data and the development of a cross-functional measurement framework highlighted the importance for developing shared perspectives and narratives regarding human capital information (Hesketh 2014, Houghton and Spence 2016).

People data also features increasingly in debates regarding 'good work'. In the UK the *Taylor Review of Modern Working Practices* initiated a debate on the quality of modern work in the UK (Taylor et al 2017); and the findings of the first comprehensive measure of UK job quality by the CIPD highlighted that robust information on business action towards improving job quality is severely lacking (Gifford 2018). The UK job quality agenda is itself heavily reliant on the evidence of change coming from organisations, and it is the form of this evidence as 'people data' that shows why such information is now of considerable value to organisations and their stakeholders.

Understanding performance through people analytics: the role of people risk

People analytics and people data are often cited as an important tool for understanding the role of people in creating value in organisations, particularly through the measuring and reporting of performance (McCracken et al 2017). Data regarding the workforce is a critical element that is required for illustrating the people and performance link. As such,

a number of models have been developed to illustrate how people analytics can help to uncover the relationship between data and outcomes.

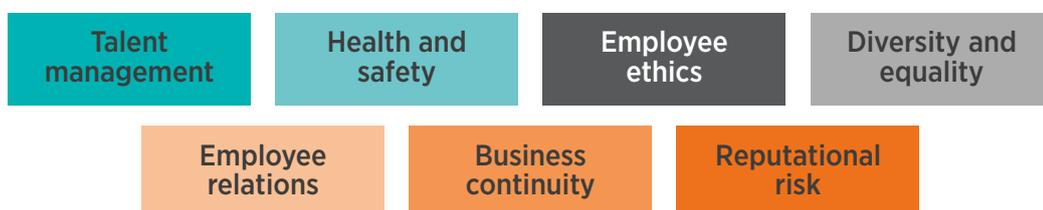
In their work exploring *human capital analytics*, Boudreau and Cascio apply the LAMP model – logic, analytics, measures and process – to demonstrate why a ‘push’ approach to improving analytics uptake can influence performance. They argue that the receptive aspect of this relationship – ‘the pull’ element – further drives utilisation of analytics. They define five key conditions that need to be in place for pull to be effective (Boudreau and Cascio 2017):

- 1 receiving the analytics on time according to needs
- 2 attending to analytics: analytics outputs having utility and value to users
- 3 trusting analytics: users must believe the information they receive to apply it
- 4 focusing on pivotal decisions using analytics
- 5 understanding the implications of decisions and recognising the need to evidence using human capital analytics.

HR outcomes are framed from a performance perspective for the vast majority of HR practices, with little attention paid to the risks associated with pursuing these performance outcomes (Becker and Smidt 2016). From a financial perspective, risk is associated with any decision to invest in human capital or the HRM practices which support it – and any investment in either of these elements carries with it uncertainty of financial return/return on investment (Bhattacharya and Wright 2005). In reaction to this some have gone so far as to argue the case for an HR audit capability, using data to assess both the performance of the function and the focus on quality outcomes (Wall and Wood 2005). However, this audit capability, driven by data from the HR function, would only be useful if it has both the quality of data required and an appropriate language to convey relationships of value creation and value capture. HR audit may be in practice difficult to achieve within the current HR function; nevertheless, a focus on measurement and reporting is critical, particularly if aspects of human capital risk are to be both understood and managed effectively.

The forthcoming CIPD report *Hidden Figures: How workforce data is missing from corporate reports* (McCracken et al 2018) measured the extent to which UK FTSE 100 firms report on human capital risk, or ‘people risk’. The work defined seven areas of people risk, which are outlined in Figure 1.

Figure 1: Seven dimensions of people risk (CIPD 2018)



McCracken et al (2018) found that organisations are still developing their understanding of people risk reporting. A key issue highlighted was the extent to which FTSE 100 annual reports failed to adequately detail the type and content of the people risk issue, one potential barrier to this being the quality of internal people data and analytics. Therefore, people analytics could play an important role in enabling better people risk management and better people risk reporting by large organisations.

5 Purpose of the study: key questions

In this study we explore the following questions:

- 1 To what extent is people analytics practice driving organisation performance and delivering value to stakeholders, and how does it differ according to geographic, demographic and professional variables?
- 2 To what extent is the HR function capable when conducting people analytics using people data?
- 3 To what extent is workforce/human capital risk measured using people analytics?

Methodology

The CIPD and Workday conducted an online cross-sectional survey of HR and non-HR professionals between February 2018 and April 2018. The sample included a mix of seniorities and professional backgrounds: 33% were HR professionals, 27% were finance professionals and 39% were from other professional groups, such as marketing, management or sales. Respondents were based in the UK and Ireland, Middle East and North Africa (MENA), South East Asia (SE Asia), and the US. In total, 3,852 individuals responded to the survey. The online survey was distributed by YouGov, which was topped up by convenience sampling across CIPD networks. The demographics for each region can be seen in Table 2.

Table 2 outlines the total proportion of respondents by region and function (percentages rounded to the nearest whole figure).

Table 2: Respondent demographics

Type	Professional background	N	%
UK and Ireland	HR	586	15
	Finance	298	8
	Other profession	804	21
	UK and Ireland total	1,688	44
SE Asia	HR	389	21
	Finance	420	10
	Other profession	306	11
	Asia total	1,115	29
MENA	HR	182	5
	Finance	158	4
	Other profession	303	8
	MENA total	643	17
US	HR	131	3
	Finance	169	4
	Other profession	106	3
	US total	406	11
Global total		3,852	

6 Findings

This section is split into six sub-sections, each exploring key findings from the survey:

- 1 people data at the organisation level: strategy, culture and performance
- 2 professional perspectives on people data: how are different professions using data?
- 3 HR capability: is HR ready to deliver value through people analytics?
- 4 types of people data in use
- 5 business value and risk: is people analytics adding value?
- 6 future trends: how is the people analytics practice evolving?

1 People data at the organisation level: strategy, culture and performance

Key findings

People analytics culture is positively associated with overall business performance.

We found that 65% of those who work in a strong people analytics culture said that their business performance was strong when compared with competitors, but only 32% of those in weak analytics cultures report strong business performance.

People analytics culture is positively associated with business and HR strategy, suggesting that improving people strategy influences **people analytics culture**. Data shows that **people analytics culture** varies across geographies, with only 36% of UK respondents believing they have a strong people analytics culture, compared with 37% in the US, 52% in MENA and 54% in SE Asia.

HR professionals who have a negative perception of their organisation's HR strategy are significantly less likely to use people data in their practice, suggesting that strategic alignment and engagement by HR professionals is important for improving the use of people data.

HR professionals who view HR strategy and business strategy as integrated in their organisations are significantly more likely to use people data in their practice, suggesting that improving the link between business strategy and HR strategy may help to improve the use of people data by HR professionals.

To understand the overall impact of people analytics in organisations we investigated the relationship between three important concepts: overall organisational culture, people analytics culture, and overall business performance. We use these concepts to appreciate at the strategic level how people analytics is conducted and the outcomes being generated.

Understanding overall organisational culture

We asked all respondents to describe their overarching organisational culture. We defined four culture types:

- **Family feel:** an organisation with a family feel, held together by loyalty and tradition. Leaders are viewed as mentors or parents.
- **Formalised:** a formalised and structured place to work, where procedures govern what people do and hold people together.
- **Dynamic:** a dynamic, entrepreneurial, and creative place to work. People stick their necks out and take risks.

- **Results focused:** a result-oriented organisation whose major concern is with getting the job done. People are competitive and goal-oriented, and are held together by an emphasis on winning.

Of the 3,852 global respondents, 19% believed their organisation had a family feel culture, 47% had a formalised culture, 8% had a dynamic culture, and 27% had a results-focused culture. This data is used later to explore if and how business culture influences the type and impact of people analytics practice that is undertaken in organisations.

Defining people analytics culture

Many organisations build people analytics capability for the purposes of achieving a degree of competitive advantage through their workforce data, but research has shown that HR's ability to influence is often limited – data therefore offers a way to improve non-HR perspectives of the function (Falletta 2014). There is a common perception of people analytics being the preserve of an elite few organisations that have the resource to invest in complex systems and are able to attract and develop the right skill-sets to conduct data analytics. However, the advent of cloud-based IT solutions means that there are technology suites that offer to 'democratise' analytics practice to a broader community of professionals who operate in smaller firms, with artificial intelligence (AI) frequently noted as an enabler (Holden 2017).

While technology suites offer the opportunity to bring people analytics (and evidence) to more HR professionals, in reality the receiving system (the organisation, the function and the team) for the technology must be both prepared and willing to adopt new practice. This concept of **people analytics culture** is one such area that may be important to delivering successful outcomes from practice. Key questions being investigated in relation to this are: what can be done at the individual and team level to improve the outcomes of analytics practice? And if practice is to evolve, how can the analytics capability become embedded within the functions using it, and enhanced in the eyes of the users (or 'consumers') of analytics outputs, whomever they may be in the organisation?

In addition to defining the overall business culture, we include a measure of **people analytics culture**, a simple way to describe the qualities of people analytics practice. Through analysis we describe people analytics culture by measuring for three related items, which are commonly cited as important elements of people analytics practice: whether or not:

- organisations actively use HR analytics to tackle business problems (Davenport 2006, Kiron and Shockley 2011)
- management speaks frequently about the value and importance of HR data, transparency and insights
- line managers seek out HR data when making business decisions¹ (Davenport 2006).

A strong relationship between these concepts allows us to produce a composite score for **people analytics culture**. An average was computed, and we define a 'strong people analytics culture' as 2.49 and below, and a 'weak people analytics culture' as 2.5 and above.²

We found that:

- 47% of HR professionals believe their organisation has a strong people analytics culture, six percentage points higher than non-HR respondents (41%).
- Over half of SE Asia and MENA respondents believe they have a strong people analytics culture (54% and 52% respectively), compared with just over a third of UK respondents (35%) and US respondents (37%).

People analytics culture: linking to strategy and performance

Our analysis showed that people analytics culture relates to all but one aspect of HR strategy. There was no significant correlation between HR respondents perceiving there is not enough time and resource to implement effective HR strategy and operations, and their organisation's analytics culture.

However, analytics culture was found to have a **weak negative correlation** with human resources management having more power leading to better outcomes,³ suggesting that where the HR function lacks power, analytics is less embedded into organisational culture.

All other aspects of HR strategy positively correlate with analytics culture. There is a **moderate** link between 'HR and business strategy and analytics culture',⁴ 'HR strategy operation says what it means and means what it says',⁵ and 'management and HR agree on the way employees should be managed',⁶ suggesting that a strong HR strategy and strong analytics culture go hand in hand.

We asked non-HR respondents to comment on their organisation's performance in relation to their main competitors using a number of questions, including 'overall performance', and 'market share' and 'profit growth'. A composite score was then created for **overall business performance**, as reliability analysis indicated that business performance measures are strongly related across a number of areas, from sales growth to staff morale ($\alpha=0.87$). In sections following this, we use this measure of **overall business performance** to explore if and how the use of people data in organisations influences perspectives on overall firm performance, grouping respondents into 'strong performance', 'average performance' and 'low performance' organisations.⁷

By looking at **people analytics culture** we found that 65% of those who operate in a strong analytics culture report that their business has a strong performance in comparison with its competitors. In contrast, only 32% of those in a weak analytics culture report their business has a strong performance, representing a 33-point difference. In addition, half of those (50%) in a weak analytics culture report their business has an average performance, compared with under a third (30%) of those in strong analytics cultures.

Non-HR respondents in strong-performing businesses also gain the most value from the people data they receive. For example, business performance is associated with analytics and data being highly valued by business leaders,⁸ with those with strong business performance more likely to agree that data is valued by business leaders than average-performing organisations.⁹ They are also more likely to indicate HR analytics have a positive impact on business outcomes.¹⁰ Within strong-performing organisations, HR teams are more likely to be using analytics to develop relationships with internal stakeholders,¹¹ and in turn managers are more likely to be utilising HR analytics to influence stakeholders,¹² highlighting that workforce data can be used to influence stakeholders for positive business outcomes.

In addition, respondents from strong-performing organisations are more likely to trust the predictions made by HR analytics,¹³ with analysis indicating that those who rate their organisation's performance as average more likely than those in strong performance organisations to agree that workforce data predictions are too good to be true, and therefore untrustworthy.¹⁴

This could be in part due to enhanced data literacy and analytic skills in strong performance organisations; non-HR respondents who operate in this context are more likely to indicate that the HR team are experts at using people data¹⁵ and that their HR team has demonstrable numerical and statistical skills¹⁶ than those in average-performing organisations.¹⁷

Recommendations for improving people analytics practice

- **There is a link between people strategy and analytics culture illustrating that people strategy influenced the conditions in which strong people analytics cultures develop.** HR practitioners should look to ensure that they take the opportunity to foster strong people analytics cultures by recognising its value and importance at the strategic level. Findings appear to illustrate that strong people analytics cultures and good-quality HRM strategy are connected, and therefore both should be developed further.
- **HR practitioners should look to build people analytics cultures through people development and HR practice.** HR has an important role to play in fostering the qualities of good people analytics cultures. HR should look to further develop strong people analytics cultures by encouraging management dialogue as to the importance of people data, by ensuring line managers have access to people data for making business decisions, and by focusing the use of data on specific business problems.

2 Professional perspectives on people data: how are different professions using data?

Key findings

- Results show that ‘access to people data dashboards’, ‘having integrated HR and finance systems’ and ‘standardising people data’ are positively related to individual perceptions on **organisation performance**, suggesting that improving these three areas will improve overall organisation performance. This suggests that **visibility of data (for example in dashboard form) is connected to employee perspectives on firm performance**, with 73% of respondents from a strong performance business agreeing or strongly agreeing that they have access to a dashboard of people data, in comparison with 50% of those who indicated their business is of average performance.
- However, access to people data and insights is still very low: just over half (54%) of global respondents have access to people data and analytics. Almost two-fifths (39%) have no access to people data for decision-making purposes. Only 22% of respondents stated that they use people data and analytics on a daily basis when making decisions.
- Our data shows that **overarching business culture** influences the extent to which managers access people data, whether people data is standardised across the business, and whether HR and finance data is available through a single system. Organisations characterised as **family feel** are less likely to use people data dashboards, and are less likely to have integrated HR and finance systems.

The providers of analytics technology, who in various ways lead the debate on the impact of analytics, are clear in their diagnosis of the context of analytics practice and the impact it is having. Recent publications note increasing demand but poor supply: analytics culture and capability have been highlighted as important issues in Europe, for example (IBM 2017). Practitioner research by Harvard Business Review Analytics Service with Visier noted barriers to analytics practice for HR being inaccurate, inconsistent and inaccessible data, low analytical skills and low investment (Harvard Business Review Analytics Service 2014). The picture from vendors is one of significant potential, but poor practice, which is failing to realise value – although practice-based vendor-led research of this type does have drawbacks (Angrave et al 2016).

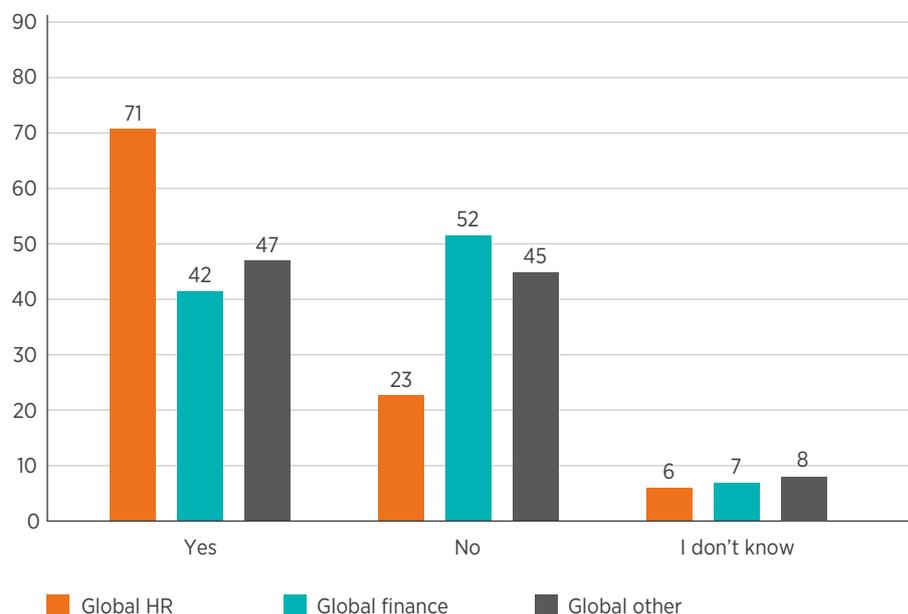
While accounts from industry tend to be overly optimistic as to the value and contribution of HR analytics, the research into practice is far less conclusive, and often contrasts with popular vendor perspectives. The dearth of literature into specific aspects of people analytics practice (for example system selection, standardisation procedures), and the lack of accounts from HR practitioners and non-HR practitioners on the realities of analytics in action, means that there are many questions that remain about the contribution and value of analytics in modern organisations. This research was designed to explore the multiple perspectives on people analytics practice, and make the case for further research into the detail of people analytics practice.

To understand the application of people data and analytics in practice, we explored the extent to which the three professional groups used people data and analytics in their roles, and the access they have to this information. We also investigated how access to people data is related to perspectives on organisation performance.

Who has access to people data for decision-making purposes?

We asked respondents to consider if and how they use people data in their role. Of the 3,852 global respondents to this question, just over half (54%) stated that they have access to people data and analytics. Two-fifths (40%) stated that they had no access to people data and analytics, and 6% did not know. The professional breakdowns are shown in Figure 2, and highlight how, as expected, HR professionals are more likely to agree that they have access to people data than non-HR professionals.

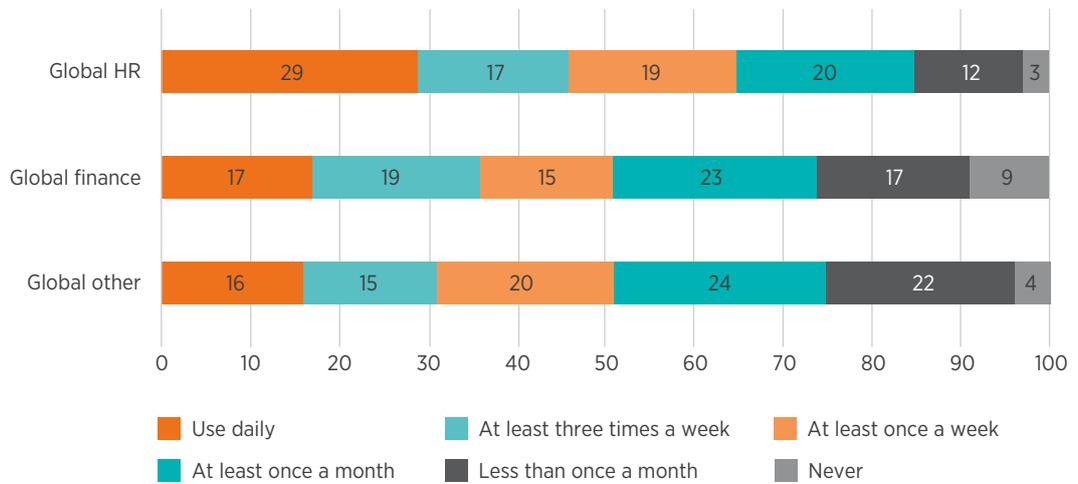
Figure 2: Do you have access to workforce/people data that is produced by your organisation? (%)



Base: global HR (n=1,288); global finance (n=1,045); global other (n=1,519)

Of those 2,064 that do have access to people data, we found that under a third (29%) of HR professionals globally are using people data to make decisions on a daily basis, compared with less than a fifth (17%) of finance professionals (see Figure 3).

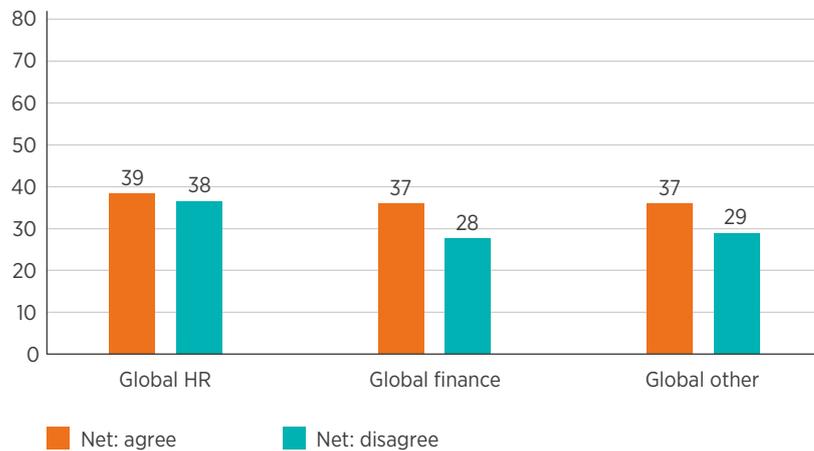
Figure 3: Frequency of use of workforce data/people data for decision-making (%)



Base: global HR (n=909); global finance (n=436); global other (n=719)

The integration of people data with other business information (BI) is often noted as a signal of effective people analytics practice that is not subject to the common barriers of unclear data definitions and ineffective IT solutions (Houghton and Spence 2016). We asked HR, finance and other professionals globally about their access to data through a single system and found around two-fifths of all professional groups note this solution is available to them (Figure 4).

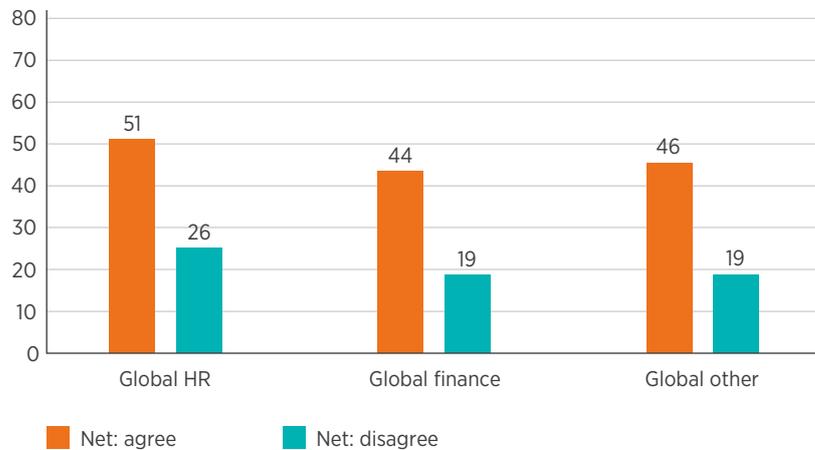
Figure 4: The HR and finance data systems in my organisation are accessible through one system (%)



Base: global HR (n=1,288); global finance (n=1,045); global other (n=1,519)

In addition to this we also asked about the extent to which managers have access to data through a dashboard of people data. The results show broad agreement across professions as to the extent to which people data dashboards are used by organisations, with only half of HR professionals globally stating their people data is presented to management through data dashboards.

Figure 5: Management have access to a people data dashboard (%)



Base: global HR (n=1,288); global finance (n=1,045); global other (n=1,519)

How does access to data relate to overall business performance and overarching business culture?

Using the composite score of **overall business performance**, we found that manager access to a dashboard of HR data,¹⁸ having HR and finance data systems accessible through one system¹⁹ and having standardised data across the business²⁰ all have a **moderate positive correlation** with business performance, highlighting the importance of access and visibility to overall performance measures. We found that 73% of respondents from a strong performance business agree or strongly agree that they have access to a dashboard of people data, in comparison with 50% of those who indicated their business is of average performance.

Overall, those that agree they have analytics dashboards are more likely to agree their business outperforms their competitors,²¹ and have higher confidence interpreting analytics outputs²² and more frequently conduct basic data analysis²³ as well as more advanced forms of multivariate analysis.²⁴ The relationship between dashboard use and advanced analytics is slightly stronger than basic analytics, suggesting dashboard use is associated with more sophisticated data use.

Having access to and using HR and workforce data is also linked to overall business performance. Fifty-two per cent of those operating in a strong-performing business indicated they have access to people data, in comparison with 39% of those who indicated an average business performance. Just 8% of those who indicated that their organisation is being outperformed by competitors have access to people data; however, the sample size of this group is small and findings should be taken as indicative.

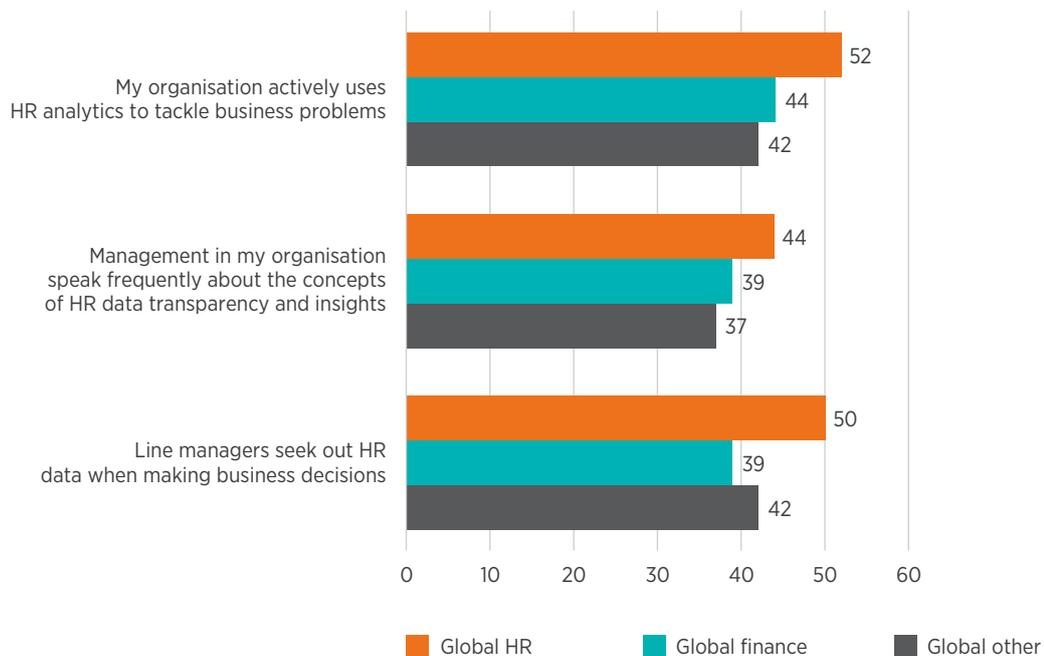
The survey showed that access to people data varied with organisational culture. For example, the extent to which managers have access to data differs significantly across cultures,²⁵ as does whether HR and finance information is accessible through one system,²⁶ and how far HR data is standardised across the business.²⁷ Specifically, organisations with a family feel are less likely to say their managers have access to a dashboard of HR data than dynamic cultures. Formalised and family feel organisations are less likely to say their HR and finance data systems are accessible through one system than dynamic organisations or that their data is standardised across the business.

In addition, respondents that agree their managers have access to a dashboard of HR data are also more likely to agree their organisation is effective at understanding workforce performance and productivity,²⁸ and that they use data to understand this challenge.²⁹

How are managers using people data in their roles?

We investigated the extent to which different professions globally are using people data. We found differences between responses of the different professional groups in the study, particularly with regards to the use of data for decision-making, and the perspective on organisation-level use of people data. The findings show that HR respondents are significantly more likely to agree that ‘line managers seek out HR data when making decisions’, that ‘management speak frequently about HR data transparency and insights’,³⁰ and that ‘HR analytics is actively used to tackle business problems’.³¹ However, only 52% of HR respondents agreed that their organisation is using people data to tackle organisation problems. It appears that HR professionals are currently over-optimistic about the use of people data by their non-HR colleagues, but are not seeing non-HR stakeholders use people data to inform their business decisions.

Figure 6: Use of data by different professional groups (strongly agree and agree) (%)

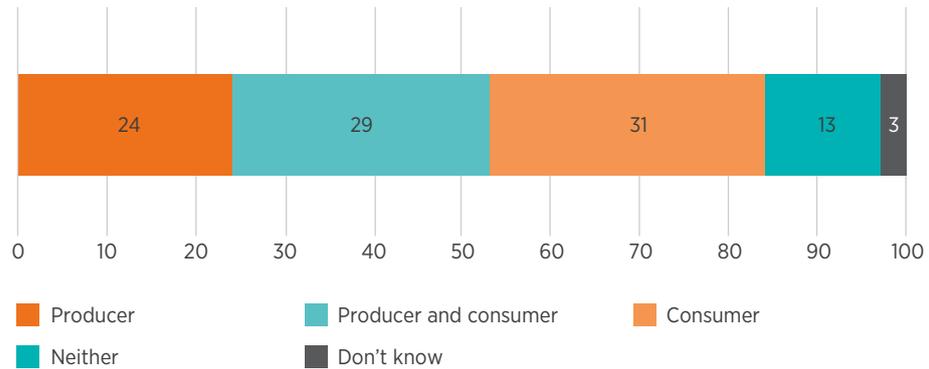


Base: global HR (n=1,288); global finance (n=1,045); global other (n=1,519)

Who are the producers or consumers of people analytics?

Respondents were asked to consider whether they identify as a producer of people data and analytics, a consumer of people data and analytics, whether they do both, or whether they are neither. Of the 1,970 global respondents who stated they have access to/use people data in their role, we found perspectives are fairly evenly split.

Figure 7: Production or consumption of people analytics (%)



Base: global respondents (n=1,970)

However, the professional groups differed in how they identify themselves.³² Twenty-seven per cent of HR professionals and 29% of finance professionals identified themselves as producers of people data, compared with 18% of other professionals. In contrast, 35% of other professionals identified themselves as consumers and users of workforce data, compared with 24% of HR and 27% of finance professionals. HR professionals were most likely to say they are producers and consumers of people data (36%), compared with 27% of finance and 28% of other professionals.

How respondents identify themselves as using workforce data also relates to a number of outcomes, such as non-HR respondents' perceptions of the value of HR. For example, those who identify as a producer of workforce data are more likely to agree they have access to relevant HR data than consumers.³³ In addition, those who identify as both producers and consumers are more likely to agree HR and analytics are valued by the leadership team.³⁴ Lastly, this group is also more likely to disagree that workforce data is too good to be true and is therefore untrustworthy, than all other groups,³⁵ perhaps highlighting that to understand the overall value of data, and to trust it, individuals have to be encouraged to both produce/analyse and consume/use people data.

Recommendations for improving people analytics practice

Data suggests that organisations that are using integrated HR and finance systems and building people data dashboards are also characterised by stronger organisation performance.³⁶ HR professionals should look to build their people data capability and systems with this in mind, as there are clear benefits arising from the use of integrated systems. Integration of systems between HR and finance is a useful way of ensuring both professions access and use people data in their decision-making.

Data shows that access to people data and analytics continues to be low for all professions. HR professionals should look to ensure that through reporting and engagement they ensure all line managers who may benefit from accessing people data are provided with the opportunity to use people data insights in their roles. Low access levels can be overcome with increased uptake of technology systems, and emphasis on improving accessibility by removing barriers (for example skills and confidence) in the users of technology.

Continued on next page

Enable professionals to be both producers/analysts and consumers/users of people data, as doing both appears to influence perspectives on data value and trustworthiness. Therefore HR and finance functions should look to encourage teams to adopt both approaches to people data, to build engagement with it, and to tackle issues related to its trust.

3 HR capability: is HR ready to deliver value through people analytics?

Key findings

- **Global respondents believe that the HR function is not capable of tackling business problems:** only 40% of global respondents believed that their HR function is able to use people data to solve business problems.
- **However, data shows a positive relationship between people analytics culture and confidence of working with people data,** suggesting that strong analytics cultures improve the confidence of HR professionals with regards to conducting people analytics in their roles.
- **There is untapped potential in UK HR professionals:** we found that 21% of UK HR professionals say they are confident or very confident with the more advanced techniques such as structural equation modelling, but only 6% of UK HR professionals say they use these in their day-to-day role, suggesting many HR professionals do not have the opportunity to use their skills.
- **Evaluation and calculation of returns on investment (ROI) of people analytics vary with geography:** UK professionals are the least likely to calculate the return on investment of their people data projects (24%), while in SE Asia over 58% of professionals agreed that they are calculating returns on investment for people data and analytics projects.

It is widely acknowledged that data analytics skills are becoming more important capabilities to build into the organisation, with many professions now calling for data science skills. However, there are fears of a data science skills shortfall in the labour market. For example, PwC noted that in 2015 there were 2.3 million open jobs asking for analytical skills in the US (PwC 2015), and a 2012 US study put the expected labour gap for skilled data analytics jobs at between 140,000 and 190,000 people in 2018 (Lazar 2012). In Europe the number of data scientists required by organisations by 2020 is expected to be 346,000 (ITPro 2017).

There are various opinions on the skills that are needed to be able to conduct big data analysis; at the broadest these are: *'big data, analysing data, and making decisions using data'* (Hardgrave 2013). This includes an understanding of the three types of analysis described earlier: descriptive, predictive and prescriptive (Watson 2013).

An often noted barrier to improving maturity of analytics practice is the capability to conduct people analytics effectively (CIPD 2017, Houghton 2017). This is a potential risk, as in the absence of analytical skills HR may cede people analytics to the IT and finance functions, where relevant data management and analytics capabilities tend to exist. In doing this, HR loses the opportunity to influence strategically on workforce issues, and is also removed from discussions relating to work and the workforce. This is clearly a negative outcome for both employees and the HR function, as workforce-related issues

risk being analysed and interpreted in functions that lack the professional capability and expertise that HR possess (Bassi 2011).

The risks of this lack of ownership by HR are potentially significant – in particular the modelling and data science methods with relation to workforce data. A non-HR view of human capital is often one of a fixed cost to be controlled (or arguably reduced) as opposed to a learned HR perspective that notes human capital as an investment to be managed and maintained. Here HR knowledge of the enhancing people processes such as engagement, leadership development and talent management is critical (Angrave et al 2016). Without such expertise, people analytics, and the algorithms which drive it, may end up being misaligned or even counter to the perspective of the HR function. Instead of enhancing the ability of the function to deliver sustainable value, it may instead orient the business further toward short-term financial control and objectives.

To further investigate the capability and capacity of HR functions, we draw on a number of important questions that explore:

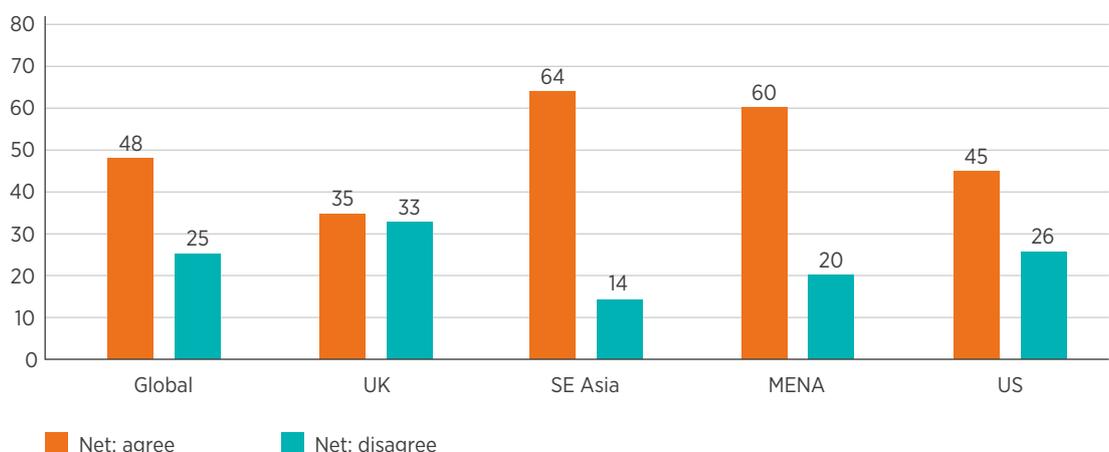
- function structure
- standardised practice/methodology
- key roles
- outsourcing from HR
- return on investment and impact evaluation.

How are people analytics functions structured?³⁷

We asked HR professionals to consider the current structure of their people analytics function (Figure 8). Analysis revealed a main effect of location, confirming that having an HR analytics centre of excellence is more commonplace in some regions than others.³⁸ Specifically, UK respondents are less likely to agree they have a centre of excellence than MENA or SE Asia respondents,³⁹ as were US respondents.⁴⁰

Figure 8: Centre of excellence/recognised analytics role (%)

‘There is an HR analytics centre of excellence/recognised analytics role or team which is available to advise and drive key HR analytics projects within the business.’



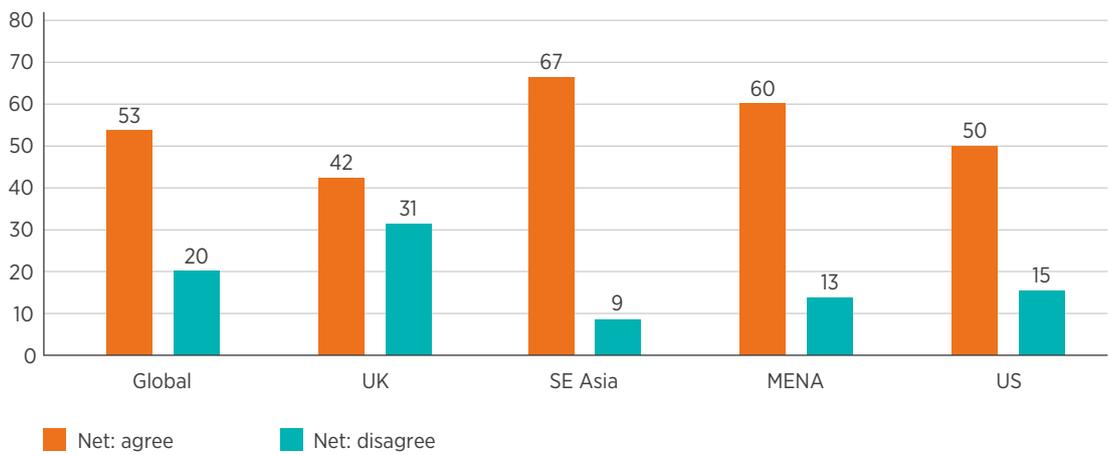
Base: global HR (n=1,288), UK HR (n=586), SE Asia HR (n=389), MENA HR (n=182), US HR (n=131)

We also investigated whether people analytics projects were being standardised by HR professionals (Figure 9), for example whether policies regarding analytics practice were clear, and if processes and procedures, such as data cleaning and data quality assurance,

were repeatable (not ad hoc). We found regional variation between the UK and the rest of the world,⁴¹ with SE Asia more likely to agree that they apply standard approaches to people analytics projects (67% net agreement). Respondents in MENA followed a similar trend, reporting that they too apply a standardised approach to people analytics projects (60% net agreement). However, the UK perspective differed, with only two-fifths of HR respondents agreeing that they are following a standardised approach, suggesting standard practices are presented with context-specific barriers in the UK.

Figure 9: Standardised approach to people analytics projects (%)

'There is a standardised approach to conducting projects which use HR data/data about our workforce.'

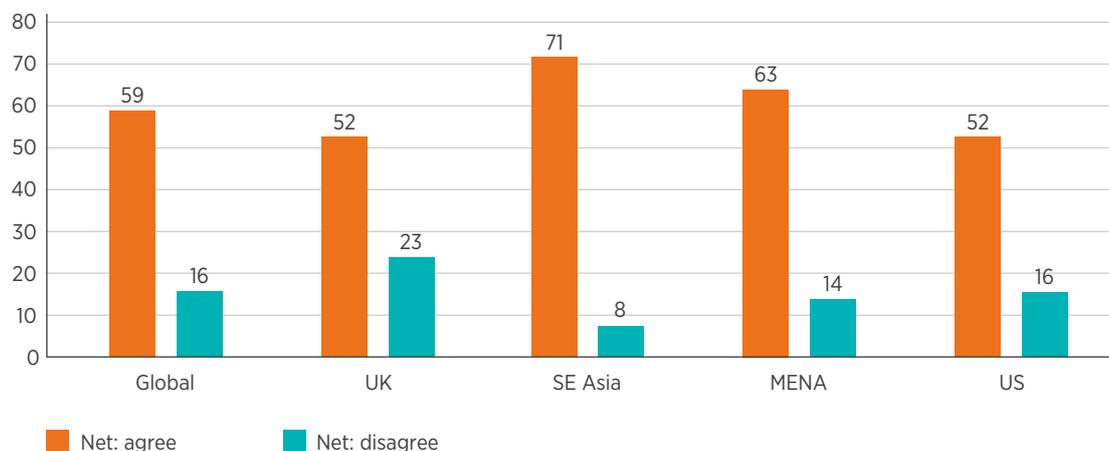


Base: global HR (n=1,288), UK HR (n=586), SE Asia HR (n=389), MENA HR (n=182), US HR (n=131)

In addition to considering the function level of people analytics capability, we also investigated the extent to which people analytics capability forms part of individual roles. Given the debate on the integration of numerical and data science skills into the people function, we looked to investigate how much people analytics factors in general analytics/BI data processing in organisations (Figure 10).

Figure 10: Key analytics roles (%)

*'There are key analytics roles across the organisation in which HR analytics is a core component.'*⁴²



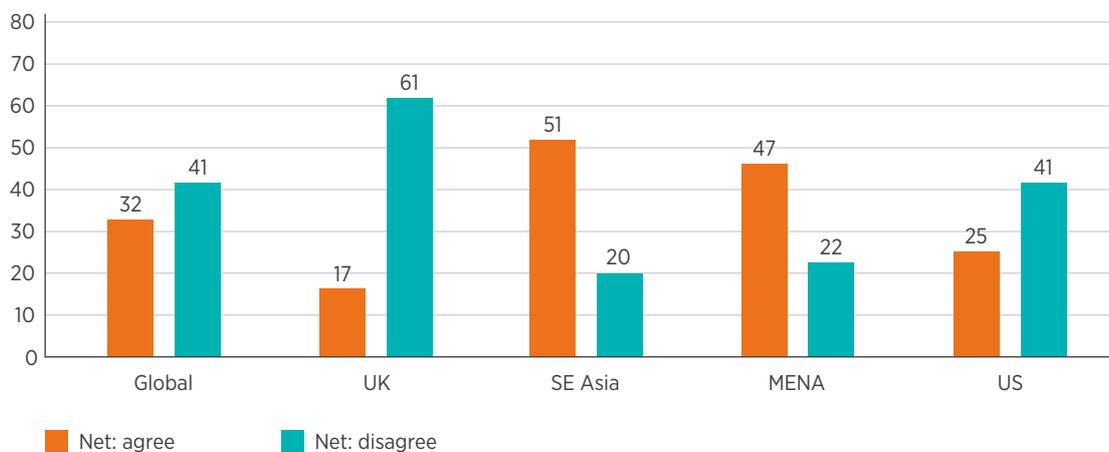
Base: global HR (n=1,288), UK HR (n=586), SE Asia HR (n=389), MENA HR (n=182), US HR (n=131)

Globally there was more application of analytics roles with a people analytics component, with 59% of all respondents agreeing that they have this capability in place. SE Asia and MENA responses were significantly different from those from the UK,⁴³ and respondents from the US were less likely to agree than Asia respondents,⁴⁴ suggesting that this aspect of people analytics is still subject to some geographic variation.

In addition to this we explored the extent to which people analytics practice remains within the HR function or is outsourced, either to an external provider, or to another business function internally (for example business information) (Figure 11).

Figure 11: Outsourcing of analytics functions (%)

*'The majority of HR analytics activity is outsourced from the HR function, either to an internal data analytics function, or to an external supplier.'*⁴⁵



Base: global HR (n=1,288), UK HR (n=586), SE Asia HR (n=389), MENA HR (n=182), US HR (n=131)

The UK response is significantly different from the findings for both SE Asia and MENA, which suggests these regions follow an outsourced approach (51% and 47% in net agreement respectively⁴⁶). In the UK there is no significant correlation between outsourcing of people analytics and agreement that the HR team have demonstrable statistical skills, as rated by HR professionals (although this approaches significance), and the correlation is negative.⁴⁷ Therefore, it may be that UK people analytics outsourcing may be related to lack of in-house skill, or access to data in-house.

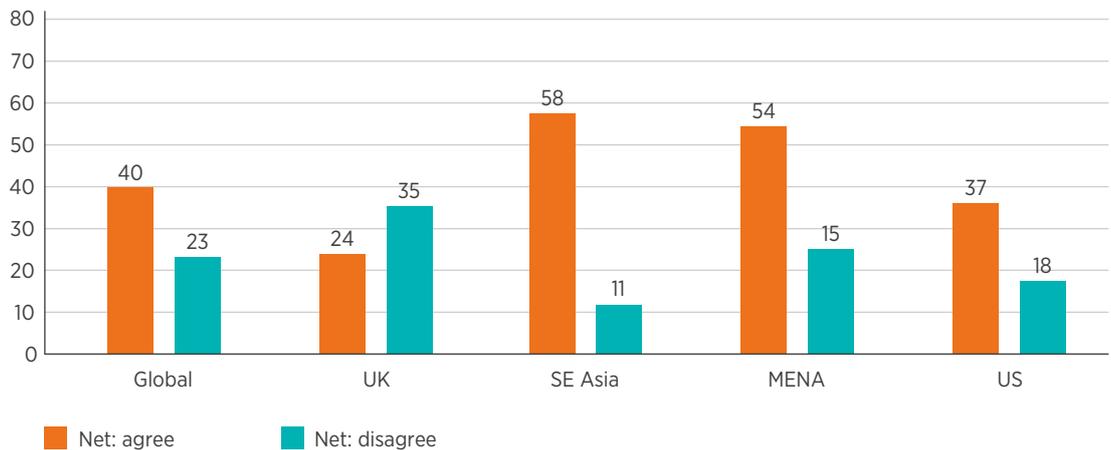
In other regions, outsourcing HR analytics does not appear to indicate a lack of in-house capability or data availability; for example, for SE Asia, MENA and US respondents, outsourcing and HR having demonstrable statistical skills is positively correlated.⁴⁸ In addition, 54% of SE Asia HR respondents have access to data that is produced for their workforce, and access to data does not influence analytics outsourcing.

We investigated whether people analytics outsourcing was associated with analytics culture, and found a weak positive correlation between outsourcing and analytics culture; in other words, the stronger the analytics culture the more likely analytics is outsourced.⁴⁹ This is not to say that HR teams do not have demonstrable numerical skills, as HR outsourcing has a weak positive correlation with HR statistical skills.⁵⁰ Instead, it suggests that outsourcing forms part of an analytics culture, signifying dedicated resource and expertise allocated for people data. In addition, strong analytics culture was correlated with line managers seeking out HR data when making business decisions,⁵¹ and leaders speaking out about the value of HR analytics.⁵²

To understand whether or not the value-adding capacity of people analytics projects was fully understood, we asked HR professionals about the extent to which they calculate the return on investment (ROI) for their analytics projects. Here we found regional differences in the responses, again pointing to a difference in approach and outcomes measurement.

Figure 12: Calculation of ROI (%)

*'HR shares return on investment (ROI) of HR analytics projects to demonstrate the value HR analytics is adding.'*⁵³



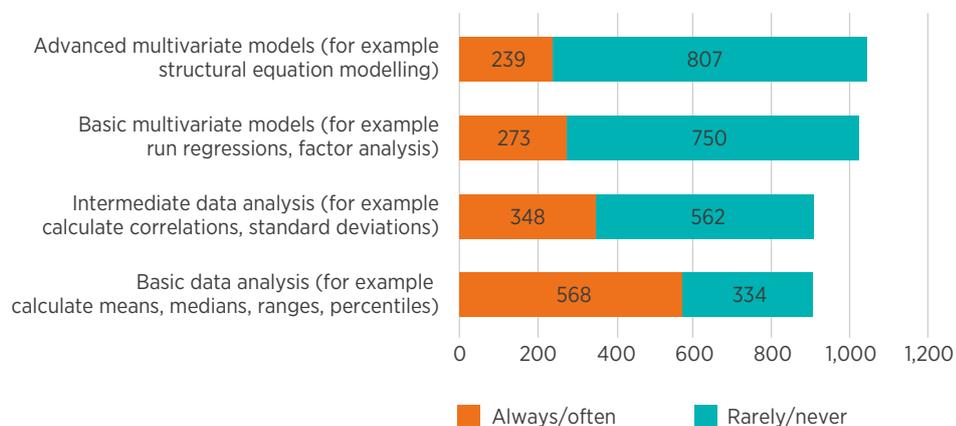
Base: global HR (n=1,288), UK HR (n=586), SE Asia HR (n=389), MENA HR (n=182), US HR (n=131)

Regional practice differed regarding the calculation of ROI for analytics practice.⁵⁴ SE Asia appeared to be a more mature market with regards to understanding impact, with 58% of HR respondents stating that they calculate the ROI of their people analytics projects. In the UK less than a quarter of respondents (24%) calculate the ROI of their projects.

What types of HR people analytics practice is being undertaken, and how confident are HR professionals at conducting analytics?

We found that HR professionals are more likely to be using basic analytical techniques, with far fewer agreeing that they are using advanced multivariate or structural equation modelling in their analysis.

Figure 13: How often do you undertake the following in your current day job?⁵⁵



Base: global HR (n=1,288)

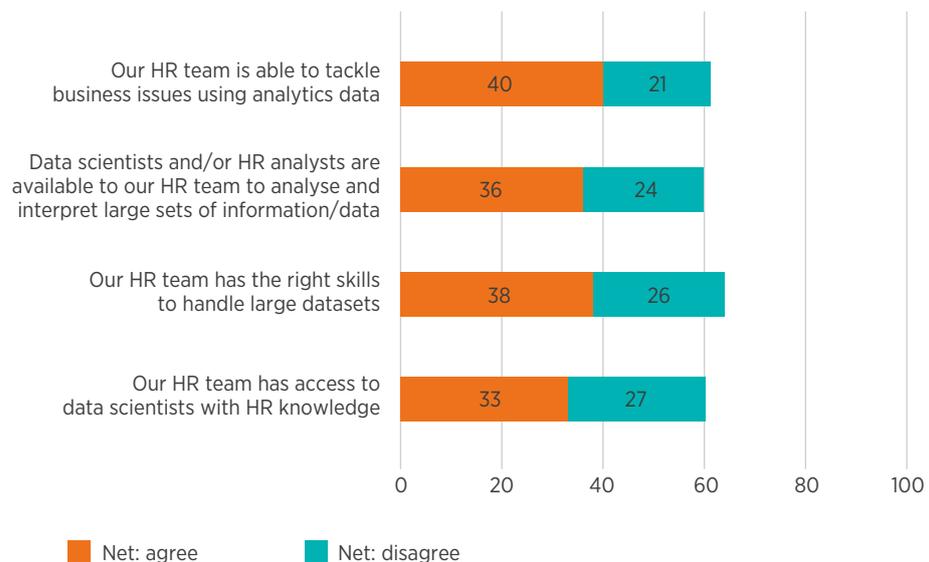
On a regional level we found that SE Asia and MENA professionals are more likely to use all of these techniques: for example, just 6% of UK HR professionals use advanced multivariate models but 29% of SE Asia and 37% of MENA professionals use these.⁵⁶

Analysis of the global data set showed that **overall business culture** is related to all types of data use, though the differences are stronger for data analysis compared with speaking about and writing about analytics.⁵⁷ The data showed that basic data analysis is more likely to be carried out by dynamic and results-oriented organisations than family organisations,⁵⁸ and intermediate analysis is less frequently used by HR professionals working in formalised or family cultures.⁵⁹ The same is true of basic and advanced multivariate models.

Global findings show that **people analytics culture** is also correlated with data use – the more frequent the data use, the higher the people analytics culture; for example basic multivariate models are most strongly correlated with analytics culture.⁶⁰ The UK analysis showed that **overall business culture** is not predictive of data usage (although the sample sizes for some cultures are small and therefore should be treated as an indicative finding). However, people analytics culture is associated with data use. UK respondents who identified their organisation as having a strong analytics culture are more likely to undertake all types of data analysis.⁶¹

We also asked respondents to consider the capacity of their HR function to handle large data sets. Drawing on Verma’s measures of absorptive capacity, we asked four questions relating to the HR function’s big data handling capacity, shown in Figure 14 (Verma 2017). The results show HR professionals need to further develop their big data capacity by building data science skills and focusing on solving business issues.

Figure 14: HR big data capacity (%)



Base: global respondents (n=3,852)

Globally, HR’s reputation for conducting people analytics is low outside of the profession. Figure 15 highlights the global professional perspectives on HR’s people analytics capability.

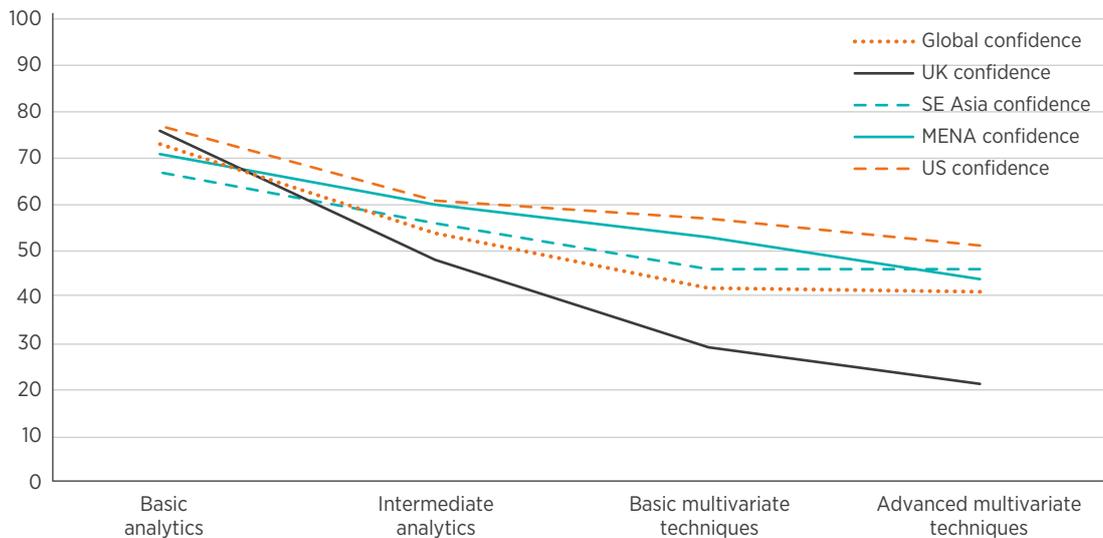
Figure 15: Professional perspectives on HR people data skills (agree/strongly agree) (%)



Base: global HR (n=1,288); global finance (n=1,045); global other (n=1,519)

Our analysis of practitioner confidence showed that confidence when conducting people analytics drops considerably as more advanced types of analytics are undertaken (see Figure 16). Our findings suggest that UK confidence in conducting people analytics is lagging behind international markets. Interestingly, 21% of UK HR professionals say they are confident or very confident with the more advanced techniques, such as structural equation modelling, but only 6% of UK HR professionals say they always use these in their day-to-day role, suggesting more could be done to enable those who do have the skills to use them more frequently.

Figure 16: Confidence conducting analytics (%)⁶²

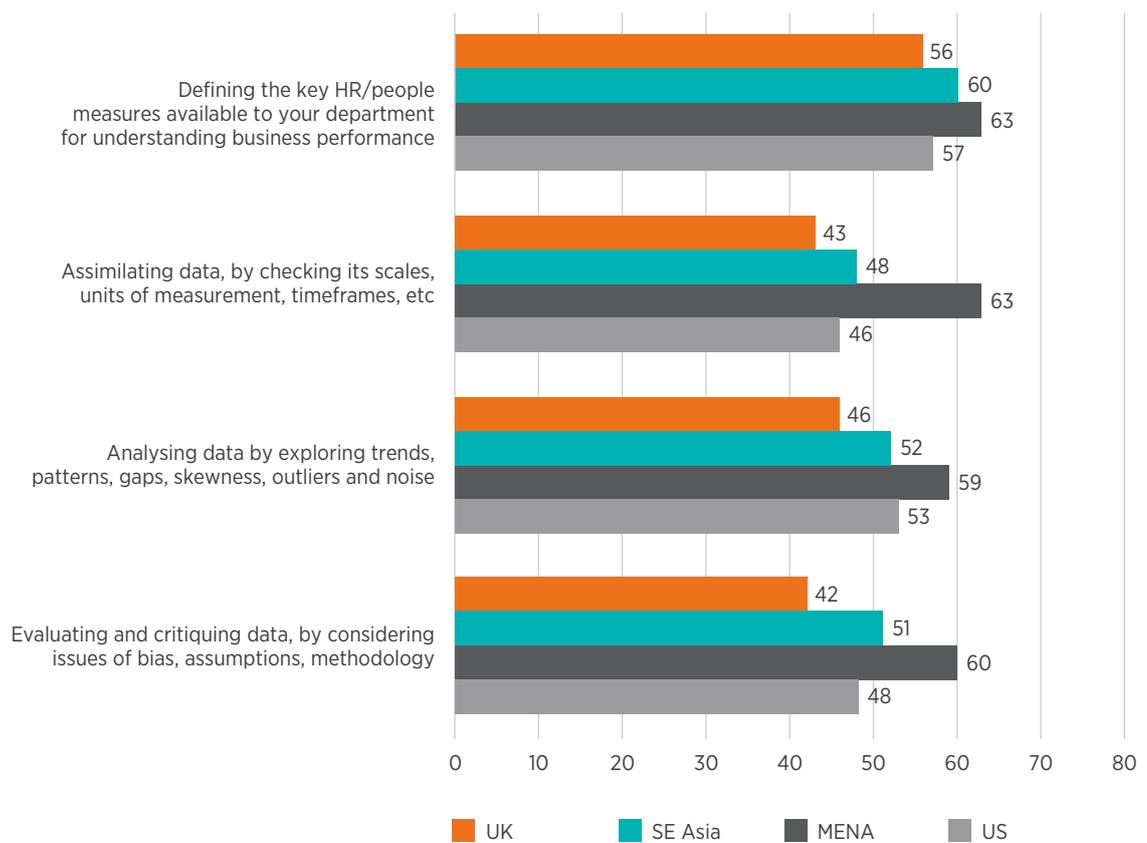


Base: Global HR basic analytics (n=1,160); UK HR basic analytics (n=524); SE Asia HR basic analytics (n=357); MENA HR basic analytics (n=167); US HR basic analytics (n=112); Global HR intermediate analytics (n=1,045); UK HR intermediate analytics (n=446); SE Asia HR intermediate analytics (n=343); MENA HR intermediate analytics (n=158); US HR intermediate analytics (n=98); Global HR basic multivariate techniques (n=856); UK HR basic multivariate techniques (n=315); SE Asia HR basic multivariate techniques (n=314); MENA HR basic multivariate techniques (n=147); US HR basic multivariate techniques (n=80); Global HR advanced multivariate techniques (n=735); UK HR advanced multivariate techniques (n=229); SE Asia HR advanced multivariate techniques (n=294); MENA HR advanced multivariate techniques (n=140); US HR advanced multivariate techniques (n=72)

We found that confidence in conducting people analytics is correlated to the overall use of analytics – for example, frequency of use of advanced multivariate techniques.⁶³ All types of data use are also positively correlated to analytics culture.⁶⁴ This suggests that in organisations with a strong analytics culture, HR professionals are more confident in their ability to conduct people analytics, or that confidence improves the receptiveness of organisations to using people data.

We surveyed HR professionals globally about their confidence in applying data science concepts to people data. We used four questions to test confidence, and found that MENA-based HR professionals are consistently the most confident across all areas.

Figure 17: How confident, or not, are you at carrying out the following? – (% confident)



Base: UK HR (n= 586), SE Asia HR (n=389), MENA HR (n=182), US HR (n=131) [HR_Confidence_1]

How does people analytics culture impact on perceptions of the quality of HR practices?

Our analysis found that strong people analytics cultures influence non-HR perceptions of the HR function. For example, those in a strong analytics culture are more likely to agree that HR analytics has a positive impact on business outcomes,⁶⁵ and are less likely to say they don't trust the people data they receive as it is too good to be true,⁶⁶ indicating that analytics culture is related to how stakeholders perceive the value of the function.

Recommendations for improving people analytics practice

People analytics skills continue to be an area requiring investment by HR functions. Low levels of capability highlight that across the board there are areas in which HR functions can improve their capability. Trends relating to data science skills also demonstrate how geographical differences are playing out. HR practitioners should look to leverage the experience of leading international organisations who are utilising data science skills.

Confidence to conduct people analytics is lacking for more sophisticated types of analysis. HR professionals should look to build their confidence in people analytics by running people analytics projects, and working with workforce data on a more frequent basis. Confidence at the upper end of the capability spectrum highlights that in the UK in particular there is a need to build confidence through practice.

Perceptions of HR's ability to understand and use big data illustrate opportunity to shape non-HR perceptions of HR. The perception of HR's capability to use big data and to be recognised as experts with people data is low, highlighting that HR practitioners should look to improve practice and demonstrate capability to internal stakeholders who are at present critical of capability.

4 Types of people data in use

We also explored the type of data points being collected and reported by HR functions. Data points for a number of key areas of people risk are explored below.

Table 3: People data measurement and reporting (%)

Type of data	Collect this data	Report on this data	Don't know	Neither collect nor report
Illness and injury rates	47	39	23	12
Training completion rate	46	36	22	15
Employee engagement scores	41	35	25	18
Employee productivity/performance rates	45	34	22	16
Team/function-level productivity performance rates	40	33	24	18
Investment in learning and development (for example cost per head of training)	40	29	28	17
Revenue/employee (for example revenue per contracted employee or revenue per part-time employee)	34	25	32	21
Return on investment of the workforce	26	22	37	23
Employee pay and benefits	55	40	18	9
Employee-CEO pay gap ratio (for example calculate from pay rates across seniority)	23	18	40	26
Gender pay gap ratio (for example calculated from pay rates per gender)	27	24	35	25
Employee turnover rates (for example number of employees who leave per month)	47	36	24	12
Employee intention to leave	29	23	32	25
'High potential' turnover rates (for example number of high-performing workers who leave per month)	31	25	32	22
Succession plan data	31	23	35	20

Base: global (n=3,852)

Analysis of global data shows that the most often collected data relate to employee pay and benefits and employee turnover rates. UK respondents are least likely to collect employee/ productivity performance rates, revenue per employee data and return on investment of the workforce. US respondents are least likely to collect gender pay gap ratio data.

SE Asia and MENA respondents are more likely to say their organisation collects certain types of data than their UK and US counterparts. Specifically, investment in L&D, team function level performance rates, high-potential turnover rates, succession plan data and employee-to-CEO pay gap ratio are more commonly collected in these regions.

When it comes to reporting of data, analysis of regional differences reveals that respondents from the UK are less likely than US, MENA and SE Asia respondents to say that their organisation reports on revenue per employee and return on investment of the workforce. In contrast, US respondents are least likely to say their organisation reports data on the gender pay gap ratio.

On the other hand, MENA and SE Asia respondents are more likely to say that their organisation reports on team function level performance rates, high-potential turnover rates, employee intention to leave, succession plan data and employee-to-CEO pay gap ratio.

Recommendations for improving people analytics practice

Data collection rates are low for many key workforce indicators. Many key measures, such as the return on investment into the workforce are not collected/calculated by current HR practice. Such information is critical for good people management practice, and as such should be collected/calculated more regularly by HR functions. HR should look to improve the extent to which it collects different types of data, and should improve reporting on such measures to internal and external audiences.

5 Business value and risk: is people analytics adding value?

In addition to the HR analytics function, skills and capabilities of teams, we also explored the type of data points being collected and reported by HR functions. Data points for a number of key areas of people risk are explored below.

Key findings

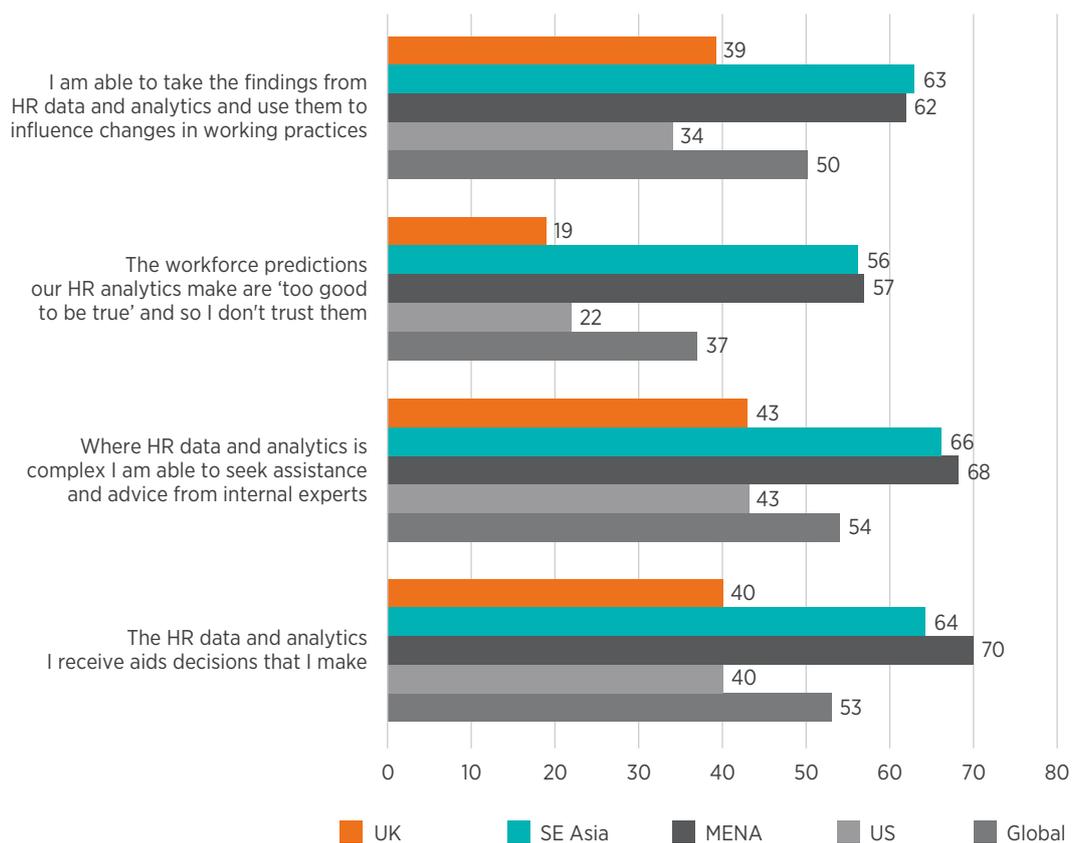
- **Global perceptions on the role of HR in tackling cyber-security issues are low and are similar across professions:** less than half (46%) of HR professionals believe that HR is playing an active role in tackling cyber-security issues. Forty-one per cent of finance professionals agree.
- **Non-HR perspectives on the value of people analytics show a difference between regions:** non-HR respondents in SE Asia and MENA are significantly more likely to agree that people analytics is having an impact (for example 63% of SE Asia respondents and 62% of MENA respondents agree that they are using people data and analytics to change their working practices).
- **Professional perspectives on data protection and security are similar:** around three-fifths (c.60%) of professionals are confident that workforce data is adequately protected. We found no significant differences between professional perspectives.

Continued on next page

- **Strong people analytics culture** is positively correlated to both **effectiveness of tackling people risk issues** and to the perceived **quality of people risk data**, suggesting that building a strong analytics culture may lead to improved people risk management practice by the HR function.

The survey investigated non-HR perspectives on the value of people analytics to understand if and how people analytics is adding value to partners to HR in the business. The findings highlight geographical differences in non-HR perspectives on the value that people analytics is generating for them: non-HR professionals in SE Asia and MENA have similar views, and these are consistently different from those in the UK and US. The UK and US perspectives on the use of people data for decision-making is concerning given the emergence of evidence-based practice within the HR profession, which is partly driven to improve the use of people data (Figure 18).

Figure 18: Non-HR perspective on people analytics impact (net agreement) (%)



Base: Global non-HR (n=1,155), UK non-HR (n=517), SE Asia non-HR (n=341), MENA non-HR (n=210), US non-HR (n=87)

The survey asked HR respondents to consider key organisational challenges to business and to rate their importance and effectiveness of each item (Table 4).

Table 4: Perspectives on organisational challenges (%)

Type of data	Net: Importance of this challenge to your organisation	Net: Effectiveness of organisation at tackling the challenge	Net: Agree data is used to tackle this challenge
Understanding workforce performance and productivity	73	56	75
Delivering the talent management strategy	64	49	68
Managing basic workforce operations (for example full-time equivalent employees, workforce distribution over geography)	67	64	74
Attracting and retaining high-performing/talented individuals	74	55	66
Understanding workforce culture and behaviours	70	56	69
Developing workforce human capital (knowledge and skills)	72	55	71
Understanding the impact of modern and future working practices on the workforce (for example automation, outsourcing)	66	48	63

Base: global HR (n=1,288)

Globally, those from a **strong analytics culture** are significantly more likely to agree that **understanding workforce performance and productivity** is important to their organisation,⁶⁷ agree their organisation is effective at tackling this challenge,⁶⁸ and agree they are using analytics to do so.⁶⁹ This highlights the importance of analytics culture to supporting the significant challenge of improving productivity and performance.

As well as testing perceptions of the value being added by people analytics, we also investigated the extent to which people data is being used to manage key areas of people risk. People risk management is an emerging area of HR practice that is increasingly important in modern organisations (McCracken et al 2018, Becker and Smidt 2016). Given the complexity and diversity of people risks, we used seven key people risk dimensions to investigate whether or not HR professionals globally are managing people risks, and the extent to which people data and people analytics is influencing this management. The findings are shown in Table 5.

Table 5: Effectiveness of risk management types and correlation with analytics culture

Area of people risk		Have excellent or good-quality data on the risk (%)	Risk management is not at all effective (%)	Correlation between quality of risk data and people analytics culture
Talent management	Workforce planning	74	13	R=0.429, p=0.000
	Skills shortages	71	13	R=0.418, p=0.000
Business continuity	Resilience for external events	65	19	R=0.423, p=0.000
	Turnover of senior roles	62	20	R=0.362, p=0.000
Diversity and equality	Career development and progression for minority groups	74	14	R=0.397, p=0.000
	Gender equality in leadership	69	18	R=0.362, p=0.000

Continued on next page

Reputational risk	External perception of culture	69	17	R=0.390, p=0.000
	External perception of management practices	66	16	R=0.321, p=0.000
Employee relations	Industrial action	57	23	R=0.273, p=0.000
	Employee participation in decision-making	72	16	R=0.366, p=0.000
Health and safety	Physical health	78	11	R=0.207, p=0.000
	Psychological health	73	16	R=0.328, p=0.000
Ethics	Unethical employee practices	73	12	R=0.214, p=0.000
	Unethical management practices	64	18	R=0.280, p=0.000

Base: global HR (n=1,288)

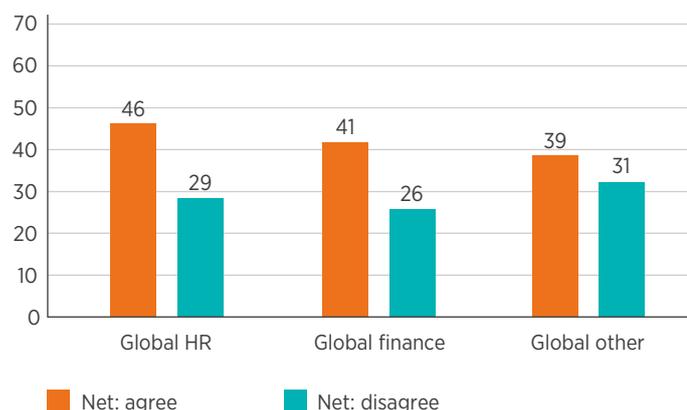
To understand the overall effectiveness of HR functions in managing people risk, we calculated a composite score that describes **effectiveness at tackling risk** ($\alpha=0.911$). Our findings showed that the effectiveness at tackling risk issues is **strongly positively correlated** with people analytics cultures,⁷⁰ demonstrating that a strong analytics culture is more likely to lead to improved effectiveness at managing people risk.

To understand the overall quality of risk data available, a composite score of **risk data quality** was also calculated ($\alpha=0.975$). The findings show that the quality of risk data correlates with the effectiveness of HR's management of risk.⁷¹ The data also shows that quality of risk data also correlates with other aspects of organisations, such as analytics culture⁷² and employee outcomes⁷³ (that is, productivity, satisfaction) as well as organisational effectiveness at tackling HR challenges such as attracting and retaining high-performing talent.⁷⁴ This suggests that the quality of data on risk is an important part of people risk management practice.

What are professional perspectives of people data protection, and are HR professionals playing a role in tackling cyber-security issues?

We also investigated the extent to which different professionals perceive the role of HR in tackling issues relating to cyber-security risk. Data shows that less than half of HR professionals believe that their HR team plays an active role in improving cyber security in their organisation. This is comparable with other professional perspectives that demonstrate the same perspective (Figure 19).

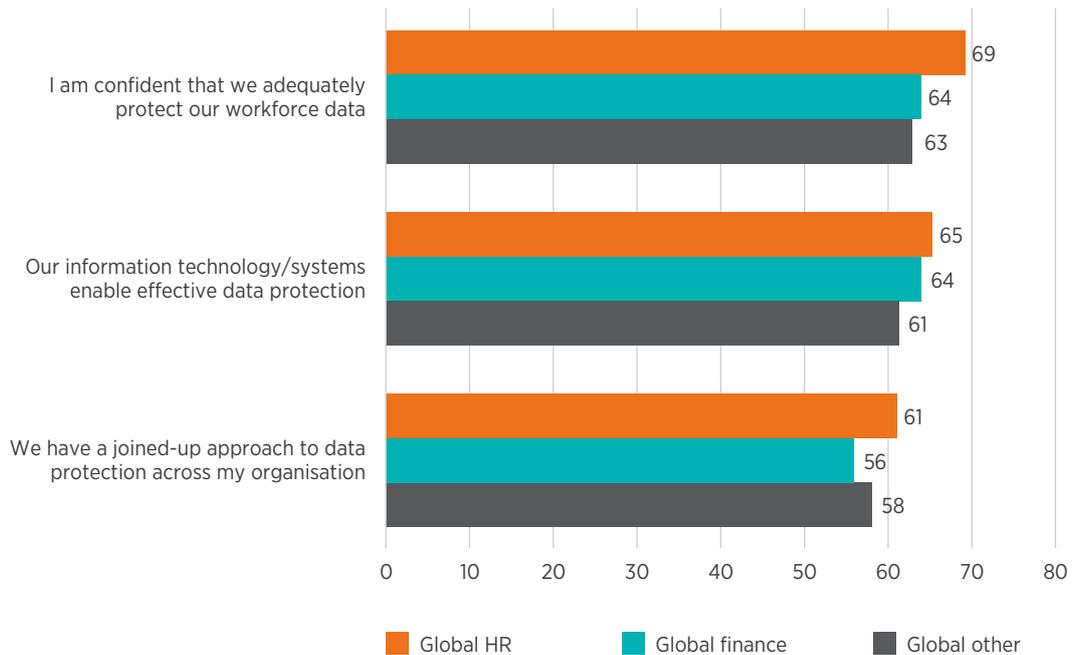
Figure 19: The HR department in my organisation plays an active role improving cyber security for the organisation (for example delivering data protection training) (%)



Base: global HR (n=1,288), global finance (n=1,045), global other (n=1,519)

We investigated different professionals' views of people data protection in their organisation, and the extent to which they believe their organisations are protected against specific people data issues (Figure 20). Given the introduction of GDPR, there are a number of influences that have brought this topic onto the agenda of many professionals. We found that there is broad agreement through professions that data is adequately protected, and that the correct systems are in place for enabling effective data protection.

Figure 20: Data protection in organisations (net agreement) (%)



Base: global HR (n=1,288); global finance (n=1,045); global other (n=1,519)

Recommendations for improving people analytics practice

There is a correlation between the effectiveness of people risk management and the quality of people risk data. HR professionals should look to use people data to understand people risks and establish high-quality people risk management practices. The effectiveness of people risk management practices is also related to people analytics culture, suggesting that a strong people analytics culture will improve people risk outcomes.

People risk is an emerging aspect of people management and human resources management (HRM). The survey shows that HR still has to develop its capability around measuring and reporting people risks. HR should look to improve the extent to which it measures key people risks and opportunities in the organisation, and enhance reporting on those measures to key internal and external stakeholders.

People data security and data privacy is an important people analytics concept for HR to get to grips with. Our analysis reveals that HR are fairly confident with their data privacy and security activity, but there is some potential for development, particularly with regards to joined-up approaches to protecting data. This is particularly true with regards to finance professionals, who are not as confident that this is in place in their organisations. HR should look to partner across functions to improve data security practices.

6 Future trends: how is the people analytics practice evolving?

Key findings

Automation of people analytics processes differs with geography: in the UK only 14% of HR professionals agreed that their organisations are using machine learning and artificial intelligence to develop people reports, whereas in SE Asia 47% of HR professionals are applying these techniques to their people data reporting.

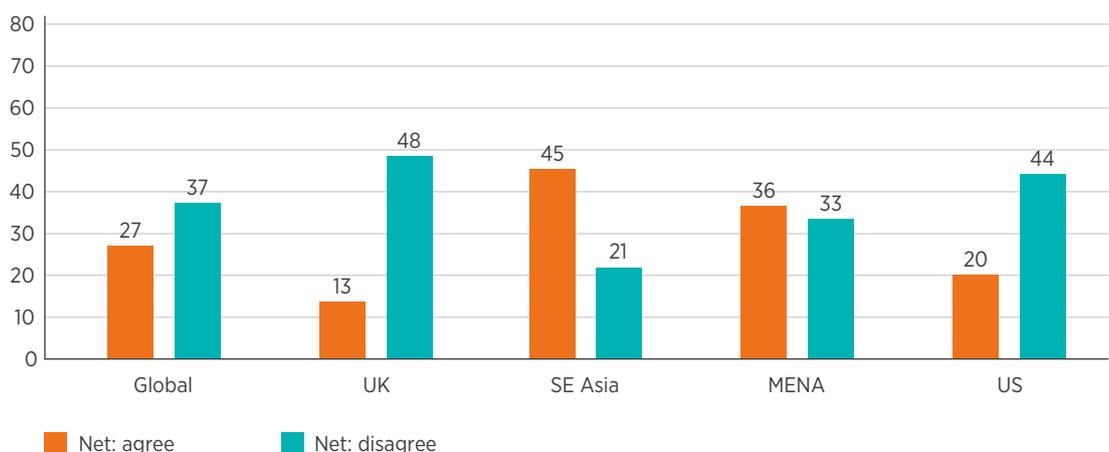
Strong analytics culture is related to the use of AI and machine learning, and the assessment of the impact of role automation on the business. However, the data suggests that there are regional differences in preparedness for the use of automation and robotics in the workforce. For example, in the UK only 14% of HR professionals agreed that their organisation is predicting the impact of AI and robotics on the workforce compared with 49% of HR professionals in SE Asia.

How does people analytics culture relate to perceptions of artificial intelligence and data protection?

We found that individuals in strong analytics cultures are in organisations more likely to be using AI and machine learning for reporting,⁷⁵ and are more likely to be using data to predict the impact of role automation.⁷⁶ They are also more likely to be automating data science roles.⁷⁷ These suggest that strong analytics cultures could lead to more advanced use of technology in organisations.

Figure 21 below illustrates how the UK is far behind other markets in terms of using AI and machine learning to compile people data reports.

Figure 21: My organisation is using artificial intelligence and/or machine learning to compile people data reports for business leaders (%)



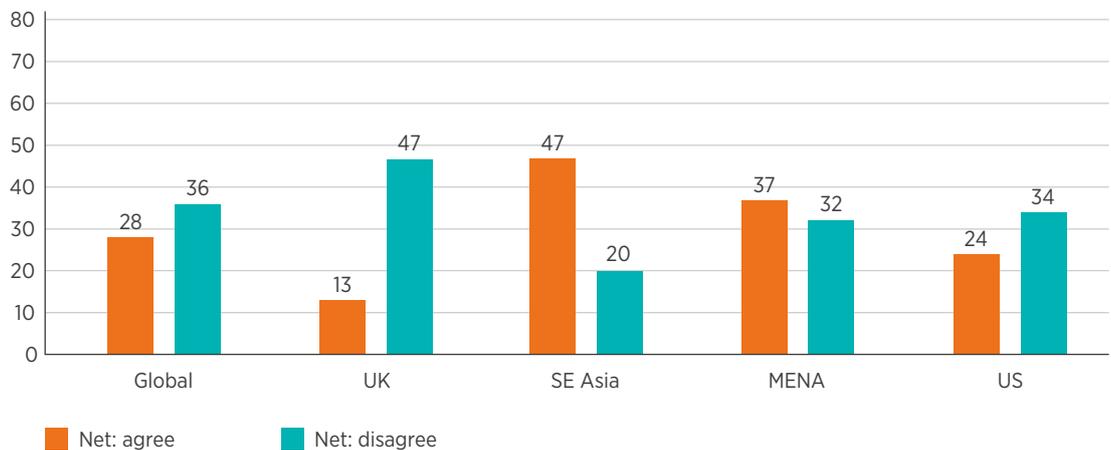
Base: global HR (n=1,197), UK HR (n=535), SE Asia HR (n=373), MENA HR (n=171), US HR (n=118)

Analysis of all responses (base n=3,852) found that 58% agree that they have a joined-up approach to data protection across their organisation. In addition, 63% agree that their information/technology systems enabled effective data protection. Finally, 65% agree that they are confident that they adequately protect their workforce data.

Across regions, US HR professionals are least likely to agree they have a joined-up approach to data protection (53%, compared with 62% of SE Asia, 61% of MENA and 61% of UK HR respondents). US professionals are also least likely to agree that they adequately protect their workforce data. For example, 62% of US HR professionals agree with this, compared with 72% of UK HR professionals.

The survey also revealed regional differences in preparedness for future trends affecting the workforce, in particular the impact of AI and robotics.⁷⁸ We found that UK professionals are the least likely to be using people analytics for this purpose, with only 13% agreeing that this is the case. This differed from SE Asia, where almost half (47%) of respondents stated that their organisation is using people data to predict the impact of AI and robotics on the workforce.⁷⁹

Figure 22: HR in my organisation is using people data to predict the impact of artificial intelligence and/or robotics on the workforce (%)



Base: global HR (n=1,288), UK HR (n=586), SE Asia HR (n=389), MENA HR (n=182), US HR (n=131)

Recommendations for improving people analytics practice

Preparedness for future workplace trends differs by region. We found that UK HR professionals are less likely to agree that their organisation is prepared for the changing role of technology in the workplace, such as AI and automation of workforce roles. UK HR professionals should first look to improve their skills and confidence in using people data, and then apply predictive analytics to map the impact of these trends on their workforce, and plan accordingly.

People risk reporting is not being automated globally, with regions differing in their approaches. HR professionals globally should continue to improve their use of people analytics technologies to automate reporting. This should be a particular focus for HR professionals in the UK, who appear to lag behind international counterparts.

7 Discussion

We now summarise the major findings of the research and discuss their implications.

Driving outcomes through people analytics

A key finding from our research is the relationship between internal reporting of people analytics (for example via data dashboards) and perspectives on organisational outcomes. It appears that data transparency relating to the workforce is critical if data is to be used by line managers in their decision-making, in particular those in finance-related roles. While the measures of performance in this survey are subjective, results show that individuals in organisations with strong people analytics cultures also report strong business outcomes.

People analytics cultures are also positively related to perceptions of HR strategy, demonstrating their importance in organisations wishing to improve overall outcomes. Workforce performance and productivity is one particular workforce challenge that is more likely to be rated as important and being effectively managed by HR when strong people analytics cultures are present, again demonstrating the importance of analytics cultures to driving outcomes.

‘People analytics cultures are also positively related to perceptions of HR strategy, demonstrating their importance in organisations wishing to improve overall outcomes.’

Another important finding from this study is the importance of people analytics skills and confidence to driving good outcomes. Regional variation shows how skills and confidence are related to outcomes, with SE Asia often leading practice with higher-quality analytics skills. The UK is particularly limited in both confidence and skills levels, highlighting a potential risk to future capability. However, when the systems are in place, for example data visibility is strong and managers are using people data to inform the decisions they make, it is more likely that individuals report stronger business performance, illustrating the importance of these practices alongside good-quality skills within the function. It appears that without these practices, data-driven outcomes are unlikely.

Who should be conducting people analytics projects?

Our findings show that people analytics practice is not business as-usual for many HR professionals and their non-HR stakeholders. More needs to be done to incorporate data into HR practice. An ongoing debate in both academia and practice is where to locate the people analytics function: either within the HR/people function, or in a cross-functional position including general analytics and business information (BI) activity, which it is argued would integrate people data and analytics into its general practice. Given the access to multidimensional data (for example data from across the business such as finance data and HR data) and the capacity to partner across functions on key business issues, this is considered a natural development as practice develops (Rasmussen and Ulrich 2015). However, we believe this is not without its pitfalls – of key concern from a human capital risk perspective is the translation of insights into people practices that both mitigate against key risks and ensure the principles of good people governance are applied to business decisions. Calls for analytics skills to be improved through considered investment are negated if analytics practice is to formalise outside of the function. For people analytics practice to become a central element of the people

profession, it must be recognised as a key activity for the HR profession and be invested in, both through the development of HR capability, skill and confidence, and through well-considered outsourcing projects with non-HR data functions. More research is needed to understand which elements of people analytics practice (for example technical and sophisticated analytics) should be outsourced from the people function, and which should remain.

The UK data shows the impact that may arise from a lack of analytical skills within HR functions. Where skills are low, confidence to conduct analytics also suffers. However, our findings suggest strong analytics cultures help to produce the right conditions for analytics practice to thrive. By investing in and developing the capabilities and behaviours of line managers, such as their willingness to integrate people data into decision-making, and to communicate more readily regarding people data, it is possible to influence broader outcomes related to both the skills of HR professionals and perspectives on overall performance.

‘It appears that while there is no clear model that works for all people analytics practice, the connection of HR/people professions into the process and outcomes of practice is clearly important.’

It appears that while there is no clear model that works for all people analytics practice, the connection of HR/people professionals into the process and outcomes of practice is clearly important. People professionals have much to gain from conducting people analytics projects, and working closely across the organisation to do this – not least the potential improvements in overall outcomes and HR reputation measures. While outsourcing people practice from the function does appear to be improving outcomes, further investigation is required to confirm why this is the case, and to understand the qualities of those outcomes that are arising from outsourced practice.

Is it time to integrate the risk and opportunity perspective into people analytics?

The emergence of the risk and opportunity perspective on the workforce is one that has the potential to change how the HR profession articulates value to non-HR stakeholders, particularly external stakeholders such as investors/shareholders. The risk perspective offers a useful way to communicate workforce issues, given that people risk concepts such as management quality and engagement are commonly cited as of interest to investors (Houghton et al 2017). The findings in this study show that it is possible to improve perspectives on people risks by enhancing the strength of people analytics culture, and also demonstrates the criticality of high-quality people data when tackling people risks. The continued debate on value creation and value capture from human capital/the workforce is an important narrative missing in HRM, which suffers from a lack of integration between the HR and finance perspectives (Findlay et al 2017). This report highlights that at the practice level, people data is important when understanding risks and opportunities related to workforce performance; and that people analytics culture is a useful concept for understanding how HR can improve people risk management.

This study also shows that often cited people risks, such as employee data security, appear to be being managed effectively by the HR function, and there is also good-quality data in place as a result of people analytics practices. It is likely that the recently enforced General Data Protection Regulation in Europe (EU 2016/679) will have brought to attention issues relating to data and privacy, and as such brought to the fore the importance of

understanding data privacy and security. However, as this research illustrates, there is still some way to go to improve how HR professionals articulate broader issues of people risk and opportunity.

A recurring theme throughout the analysis is the differing perceptions of the professions to the importance and value of people analytics. On the whole HR respondents are more positive as to the value and impact of people analytics, and are more likely to rate the people analytics capability of the HR function higher than their non-HR colleagues. It is also clear that awareness of people analytics practice by those outside of the HR profession is low, suggesting that there is still some work to be done to ensure that non-HR professionals, such as finance colleagues, are using the insights that come from people analytics. Integrating people analytics with a clearer risk and opportunity perspective may be one way to enable greater cross-functional understanding of the value of people analytics in organisations. This would help draw together the HR and finance functions, and further ensure that both HR and finance are recognising the value of good people management and HR practices. Adopting the language of risk and opportunity would also go some way to enabling the external stakeholders of organisations, such as investors, to appreciate the value of these practices to the enterprise, and to recognise the HR function and its practices as a critical part of sustainable, high-performing and effective organisations.

8 Recommendations

In addition to the recommendations made throughout to improve analytics practice, we also suggest the following strategic recommendations for people analytics:

- **Integrate people analytics and new perspectives on people risk and opportunity:** by drawing on the risk and opportunity perspective of human capital/the workforce, it may be possible to ensure more detailed discussions are undertaken that look to describe the value of the workforce through people data that incorporate multiple perspectives from both the inside and outside of the organisation. Recognising people data as a way to demonstrate the value of the workforce, and the HR practices that support them, would help to ensure that people analytics practice is further developed and embedded into the HR profession and used by key stakeholders of the business.
- **Build stronger cross-functional relationships to improve the impact of people analytics:** this study highlights a number of differences in the perspectives of HR and finance professionals, and other professionals using data. Non-HR functions should be encouraged to increase the use of people data in their practice and for long-term decision-making. HR should look to use this opportunity to both improve its own capability to serve business needs, and to ensure that the outcomes of practices are relevant to non-HR stakeholders. People data may act as a common language between functions that could help to improve outcomes for all stakeholders. HR leaders and HR business partners who work across functions are key to building stronger relationships based on people data and evidence. Both should look to incorporate people data into all aspects of business partnering.
- **Build people analytics skills and confidence in the HR profession:** an important story to emerge from this study is the impact of low skills and low confidence on the quality of outcomes from people analytics. The study points to the importance of overall people analytics culture to improving both of these elements, and it is our view that HR practice should look to ensure that skills and confidence levels are improved holistically

by tackling at the individual capability/practice level, and at the system level, by encouraging open dialogue about people data, and by pushing for greater integration of people data into decision-making. Leaders in HR and across the business should recognise the importance of people analytics at both strategic and operational levels, and invest in capability, both in terms of technology and skills. This includes leading the development of people analytics cultures which promote the use of people data for evidence-based decision-making.

9 Conclusion

In this report we investigated the state of play of people analytics practice globally and the extent to which practice appears to be informing perspectives on organisation and people performance, and views of workforce-related risk and opportunity. An important story emerging from our analysis is that people analytics continues to be an evolving practice for the HR profession and its partners across the business. As we alluded to at the beginning of the work, there is a very real risk of people analytics practice becoming a fad that fails to realise value – but we highlight in this work that for those professionals who are using people data, there are positive outcomes emerging. The HR profession is at an important point in its history: it can either take the lead in using people data and being evidence-based, or it can cede responsibility to other functions and act as a user of people information. These options require different models of HR, and crucially lead to alternative levels of skills and capability in the profession. Therefore if HR is to take this opportunity, it is important that people analytics practice becomes business as usual, not just within the HR profession, but across functions, and for the producers and users of people data, wherever they sit in the organisation, to be fully aware of the organisation's approach to using people data. The trend of integrating business and finance data to improve outcomes appears to highlight how practice is evolving beyond the realms of the HR function.

This work highlights that there is much potential in developing people analytics practice, both in terms of the HR teams producing and consuming data, and the non-HR professionals still to realise the potential value of people data to their outcomes. To get to this point HR must take the lead to establish people analytics as a core component of the future evidence-based profession. Only by doing this do we believe that the potential value long promised by people analytics will finally be realised.

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11 Appendix: Methodology notes

Below are methodology notes for each section of the report.

People data at the organisation level: strategy, culture and performance

Calculating the analytics culture score

We calculated an analytics culture score, grouping respondents who had a positive versus negative overall perception of the analytics culture in their place of work.

- An average score of all 15 items related to analytics scale was calculated for each respondent. Example items include 'My organisation actively uses HR analytics to tackle business problems' and 'Leaders speak about the value HR analytics/workforce data is adding', through which respondents indicated their agreement on a Likert scale.
- Those responding an average of 1–2.49 on this scale on average strongly agree or agree with analytics culture items. Those responding an average of 2.5 or above are neither agree nor disagree or disagree/strongly disagree on these items.

The sample consisted of:

- high analytics culture: n=1,567
- low analytics culture: n=2,087.

This represents 95% of the total global sample. Those not included represent those who answered don't know, not applicable or did not answer multiple questions on this scale.

Employee outcomes composite score

An average score of six items related to analytics scale was calculated for each respondent. Example items include 'Employees in my organisation are very committed to the workplace' and 'To what extent do you agree or disagree with the following statements? – At my organisation the overall workplace relationship between managers and employees is excellent', through which respondents indicated their agreement on a Likert scale.

Those who answered 'don't know' were excluded from analysis.

Defining people analytics culture

In addition to defining the overall business culture, we include a measure of **people analytics culture**, a simple way to describe the approach and environment within which people analytics practice takes place. Through analysis we describe people analytics culture by measuring for all respondents three related items: whether or not their 'organisation actively uses HR analytics to tackle business problems', whether 'management speaks frequently about the value and importance of HR data, transparency and insights', and whether 'line managers seek out HR data when making business decisions'.⁸⁰ A strong relationship between these concepts allows us to produce a composite score **people analytics culture**. An average was computed, and we define a '**strong people analytics culture**' as 2.49 and below, and a '**weak people analytics culture**' as 2.5 and above.

Understanding HR strategy: does HR strategy influence HR’s use of people data?

We used correlation analysis to explore the association between HR strategy and use of people data by HR professionals. Respondents indicate their agreement to five items on a Likert scale, such as ‘If human resources management had more power there would be better people management outcomes’, and ‘There is a strong link between HR strategy and business strategy’, the latter of which is reverse coded. Results of this analysis are in Table A1.

Table A1: HR strategy findings

		Frequency of basic data analysis	Frequency of intermediate data analysis	Frequency of basic multivariate models	Frequency of advanced multivariate models	Frequency of writing about analytics	Frequency of presenting and public speaking about analytics
There is a strong link between HR strategy and business strategy.	R	0.234	0.228	0.188	0.177	0.232	0.255
	P			0.000			
	N			1,166			
In respect of HR strategy and operation, this workplace says what it means and means what it says.	R	0.244	0.291	0.334	0.323	0.267	0.299
	P			0.000			
	N			1,182			
Management and the HR function agree on the way employees should be managed.	R	0.183	0.225	0.259	0.268	0.199	0.242
	P			0.000			
	N			1,172			
If human resources management had more power, there would be better people management outcomes.	R	-0.179	-0.144	-0.139	-0.141	-0.167	-0.139
	P			0.000			
	N			1,173			
There is not enough time and resources to implement effective HR strategy and operations.	R	-0.090	-0.110	-0.100	-0.090	-0.103	-0.117
	P	0.002	0.000	0.001	0.002	0.000	0.000
	N			1,182			

Employee outcomes and HRM strategy

In addition to exploring business outcomes, we also studied employee outcomes. Respondents indicated their agreement using a Likert scale on items such as ‘employees in my organisation are very committed to the workplace’. These items were strongly correlated, so it was possible to compute a composite score of employee outcomes ($\alpha = 0.88$), with a total of six items.

We ran correlation analysis to explore how employee outcomes are associated with HRM strategy, finding positive correlations between strong HRM strategy and good employee outcomes.

People analytics culture and HRM strategy

Correlation analysis was undertaken between average analytics culture in an organisation and aspects of HRM strategy.

Perspectives on business performance

Using the average business performance score, respondents were categorised into strong performance, average performance and low performance groups. Those who, on average, answered that their overall business performance was higher or much higher than their competitors (an average score of 1–2.49) were grouped into a ‘strong performance’ group (n=314, 47%). Those who answered their overall business performance was the same as their competitors (an average score of 2.5–3.49) were given an ‘average’ performance grouping (n=274, 41%). Finally, those who indicated their overall business performance was lower or much lower than their competitors (an average score of 3.5–5) were grouped together to create a ‘low performance’ group (n=79, 12%).

Professional perspectives on people data: how are different professions using data?

Business outcomes average

HR respondents of senior management level or above indicated how their organisation was performing in comparison with their competitors on a total of eight items, such as sales growth and staff morale, using a Likert scale (much higher to much lower).

There was a high level of internal validity and correlation between these items ($\alpha=0.87$), so a mean score was calculated for each respondent.

A total of 663 responses are represented in this average score. Those who answered ‘don’t know’ on multiple items were excluded from analysis.

Does corporate culture influence access and use of data?

One-way ANOVA was conducted to investigate if access to data varies by organisational culture. Main effects were found for all items; for example, the extent to which managers have access to data differs significantly across culture,⁸¹ and post hoc Tukey tests were used to ascertain significant differences between groups.

How does use of data relate to business performance as described in the business outcomes average section above?

A composite score was created for business performance, as reliability analysis indicated that business performance across a number of areas, from sales growth to staff morale, are strongly related ($\alpha=0.87$), as described in the business outcomes average section above. Correlation analysis showed that this average score was correlated with access to data.

How are managers using people data in their roles?

One-way ANOVA identified whether professional groups differed in their perceptions of how management and the wider organisation use HR data. Professional groups differed in their agreement that line managers seek out HR data when making business decisions,⁸² management in their organisation speak frequently about concepts of HR data transparency and insight,⁸³ and their organisation actively using HR analytics to tackle business problems.⁸⁴ Post hoc tests showed that ‘other’ and HR professionals are most likely to differ on these items.⁸⁵

Who are the producers or consumers of people analytics?

Respondents were asked to consider whether they identified as a producer of people data and analytics, a consumer of people data and analytics, whether they did both, or whether they were neither. Initial chi-square analysis showed the professional groups differed in how they identified themselves.

Next, we used one-way ANOVA to understand how respondents from different groups (that is, consumer, producer) differ in their perception of the value of HR. Non-HR respondents indicated their agreement on seven items using a Likert scale. Example items include 'HR and analytics are valued by the leadership team' and 'the workforce data I receive is too good to be true, so I don't trust it' (such items were reverse coded).

HR capability: is HR ready to deliver value through people analytics?

How are people analytics functions structured?

HR professionals were asked to describe the current structure of their people analytics function. One-way ANOVA analysis revealed a main effect of location, confirming that having an HR analytics centre of excellence is more commonplace in some regions than others.⁸⁶

In addition to this we explored the extent to which people analytics capability remains within the HR function, or is an outsourced capability either to an external provider, or to another business function internally (for example business information). One-way ANOVA revealed main effects of location on agreement that HR analytics is outsourced.

In addition, correlation analysis was run to explore the association between average people analytics ratings and agreement that people analytics is outsourced, findings showed a positive correlation.⁸⁷

Regional practice differed regarding the calculation of return on investment for analytics practice, with one-way ANOVA revealing a main effect of location on ROI responses.⁸⁸

What types of HR people analytics practice is being undertaken, and how confident are HR professionals at conducting analytics?

On a regional level we found that SE Asia and MENA professionals are more likely to use all of these techniques – for example, just 6% of UK HR professionals use advanced multivariate models, but 29% of SE Asia and 37% of MENA professionals use these. One-way ANOVA found this difference between groups was significant.⁸⁹

One-way ANOVA of the global data set found a main effect of overarching organisational culture on data use, with post hoc Tukey tests used to highlight within-group differences.⁹⁰ In addition, global findings showed that **analytics culture** was correlated with each type of data use.⁹¹

The UK analysis showed that **overarching organisational culture** was not associated with data usage; one-way ANOVA revealed no significant between-group differences. However, analytics culture was associated with data use. One-way ANOVA highlighted a significant difference between UK respondents who identified their organisation as having a high analytics culture as more likely to frequently undertake all types of analysis.

Descriptive statistics and correlations that outline that confidence in conducting people analytics was correlated to the overall use of analytics – for example, frequency of use of advanced multivariate techniques.⁹²

Does HR have the capacity to handle big data analytics?

Our analysis of capacity to handle big data used a one-way ANOVA and post hoc Tukey tests to understand where group differences applied, finding that respondents from

dynamic organisations are more likely to agree that their HR team has access to data science than family organisations⁹³ and formalised organisations.⁹⁴ In addition, employees in organisations with strong analytics cultures were more likely to agree that HR has access to data science expertise for all items.

How does people analytics culture impact on perceptions of the quality of HR practices?

We conducted a one-way ANOVA to understand whether those in strong analytics cultures differed in how they perceive HR and found significant differences between groups. For example, those in strong analytics cultures are more likely to agree that HR analytics have a positive impact on business outcomes.⁹⁵

Types of data in use

Descriptive statistics were collated to understand what data is collected and/or reported on globally.

Future trends: how is the people analytics practice evolving?

Calculating risk effectiveness and risk quality average

HR respondents working for an organisation with 50 or more employees (n=1,197) indicated the effectiveness of HR in managing various types of risk, such as unethical employee and management behaviour. To understand the overall effectiveness of HR functions in managing people risk we calculated a composite score that described effectiveness at tackling risk, consisting of 14 items covering 7 dimensions: talent management, health and safety, ethics, diversity and equality, employee relations, business continuity and reputation risk. This composite score was correlated with analytics culture. Reliability analysis indicated that there is high internal validity amongst these items ($\alpha=0.911$).

Therefore, an average score was calculated for each respondent answering this question. Those who answered 'don't know' were excluded from this analysis.

Similarly, respondents that indicated that they were effective at managing areas of risk indicated the quality of data they receive on that risk. Reliability analysis indicated that there is high internal validity amongst these 14 items ($\alpha=0.975$). An average score was calculated for each respondent answering this question. Those who answered 'don't know' were excluded from this analysis (base n=1,060).

Correlation analysis between average data quality and HR risk management, correlated with average of analytics culture, as organisational effectiveness at tackling HR challenges and average employee outcome scores.

Analysis reveals some differences between regions on the effectiveness of risk management. One-way ANOVA showed a main effect of location on risk management items, with post hoc Tukey tests conducted to examine group differences.

How does people analytics culture impact on perceptions of artificial intelligence and data protection?

One-way ANOVA was used to investigate whether those in a strong analytics culture were more or less likely to be using AI in analytics.

In addition, one-way ANOVA was used to understand whether there was a difference between regions on the use of AI. Significant differences between regions were found across all items (using people data to predict the impact of AI and robotics, using AI and machine learning to compile people data reports for business leaders and automating data science roles). Post hoc Tukey tests were conducted to highlight specific areas of difference across region.

Using people data to predict the impact of AI and robotics differed across regions.⁹⁶ Tukey post hoc tests show that the UK is significantly less likely than all other regions to be doing this.

Are HR professionals playing a role in tackling cyber-security issues?

Descriptive statistics were used to understand how HR professionals are tackling cyber-security issues.

Limitations

Analysis of response trends suggests that SE Asia and MENA respondents are less likely to choose ‘don’t know’ options in their responses across questions than US and UK respondents. This could influence some of the variation between regions in our findings. However, this cannot explain all differences.

When it comes to respondents’ rating of business performance, it should be noted that the majority of respondents rated their organisation of average performance or above compared with competitors or above, reflecting a general bias of individuals rating themselves and their organisations as above average. This means only a small number of individuals rated their organisation’s business performance as lower than average – just 12% of the sample.

12 Endnotes

¹ While factor analysis showed no meaningful groupings of the three people analytics culture items, reliability analysis suggests a relationship between these items ($\alpha=0.98$).

² See appendix for further information.

³ $r = -0.176$, $p=0.000$.

⁴ $r=0.45$, $p=0.000$.

⁵ $r=0.53$, $p=0.000$.

⁶ $r=0.49$ $p=0.000$.

⁷ See appendix for further detail.

⁸ $F=37.942$, $p=0.000$.

⁹ Tukey $p=0.000$.

¹⁰ $F=21.891$, $p=0.000$.

¹¹ $F=41.505$, $p=0.000$.

¹² $F=34.399$, $p=0.000$.

¹³ $F=21.293$, $p=0.000$.

¹⁴ Tukey $p=0.000$.

¹⁵ $F=46.152$, $p=0.000$.

¹⁶ $F=46.633$, $p=0.000$.

¹⁷ Tukey $p=0.000$.

¹⁸ $r=0.371$, $p=0.000$.

¹⁹ $r=0.421$, $p=0.000$.

²⁰ $r=0.415$, $p=0.000$.

²¹ $r=0.271$, $p=0.000$.

²² $r=0.210$, $p=0.000$.

²³ $r=0.200$, $p=0.000$.

²⁴ $r=0.302$, $p=0.000$.

- ²⁵ $f=3.96$, $p=0.008$.
- ²⁶ $F=9.29$, $p=0.000$.
- ²⁷ $F=2.91$, $p=0.033$.
- ²⁸ $r=0.344$, $p=0.000$.
- ²⁹ $r=0.323$, $p=0.000$.
- ³⁰ $F=5.005$, $p=0.007$, Tukey $p=0.006$.
- ³¹ $F=4.621$, $p=0.010$, Tukey $p=0.007$.
- ³² $F=4.621$, $p=0.010$, Tukey $p=0.007$.
- ³³ $F=16.197$, $p=0.002$.
- ³⁴ $F=10.773$, $p=0.000$.
- ³⁵ $F=19.484$, $p=0.000$.
- ³⁶ Organisation performance as measured through individual perspectives on key performance measures.
- ³⁷ Item from IBM (2017).
- ³⁸ $F=29.538$, $p=0.000$.
- ³⁹ Tukey $p=0.000$.
- ⁴⁰ Tukey MENA $p=0.003$ and Asia $p=0.049$.
- ⁴¹ $F=30.255$, $p=0.000$.
- ⁴² Item from IBM (2017).
- ⁴³ Tukey $p=0.000$ (overall $F=15.197$, $p=0.000$).
- ⁴⁴ Tukey $p=0.040$ (overall $F=15.197$, $p=0.000$).
- ⁴⁵ Item from IBM (2017).
- ⁴⁶ Tukey $p=0.000$ (overall $F=97.017$, $p=0.000$).
- ⁴⁷ $r=-0.086$, marginal- $p=0.050$.
- ⁴⁸ $r=0.234$, $p=0.000$.
- ⁴⁹ $r=0.334$, $p=0.000$
- ⁵⁰ $r=0.115$, $p=0.000$
- ⁵¹ $r=0.193$, $p=0.000$
- ⁵² $r=0.306$, $p=0.000$
- ⁵³ Item from IBM (2017).
- ⁵⁴ $F=50.401$, $p=0.000$.
- ⁵⁵ Item adapted from Levenson (2011).
- ⁵⁶ $F=92.603$, $p=0.000$.
- ⁵⁷ Basic data analysis $F=4.586$, $p=0.003$, intermediate data analysis $F=6.490$, $p=0.000$, basic multivariate analysis $F=11.427$, $p=0.000$, advanced multivariate analysis $F=9.965$, $p=0.000$, writing about analytics $F=3.158$, $p=0.024$, presenting on analytics $F=3.474$, $p=0.016$.
- ⁵⁸ Tukey $p=0.009$.
- ⁵⁹ Tukey $p=0.029$.
- ⁶⁰ $r=0.458$, $p=0.000$.
- ⁶¹ Basic analysis $F=15.981$, $p=0.000$, intermediate analysis $F=41.454$, $p=0.000$, basic multivariate analysis $F=47.354$, $p=0.000$, advanced multivariate analysis $F=26.368$, $p=0.000$, writing about analytics $F=24.037$, $p=0.000$, presenting on analytics $F=21.430$, $p=0.000$.

- ⁶² Item adapted from Levenson (2011).
- ⁶³ $r=0.597$, $p=0.000$.
- ⁶⁴ Basic analysis $r=0.329$, $p=0.000$, intermediate data analysis $r=0.439$, $p=0.000$, basic multivariate analysis $r=0.458$, $p=0.000$, advanced multivariate analysis $r=0.438$, $p=0.000$, writing about analytics $r=0.388$, $p=0.000$, presenting on analytics $r=0.415$, $p=0.000$.
- ⁶⁵ $F=312.464$, $p=0.000$.
- ⁶⁶ $F=80.071$, $p=0.000$.
- ⁶⁷ $F=308.861$, $p=0.000$.
- ⁶⁸ $F=355.793$, $p=0.000$.
- ⁶⁹ $F=199.496$, $p=0.000$.
- ⁷⁰ $r=0.494$, $p=0.000$.
- ⁷¹ $r=-0.352$, $p=0.000$ (minus r values due to item coding).
- ⁷² $r=-0.349$, $p=0.000$ (minus r values due to item coding).
- ⁷³ $r=-0.301$, $p=0.000$ (minus r values due to item coding).
- ⁷⁴ $r=-0.281$, $p=0.000$.
- ⁷⁵ $F=240.189$, $p=0.000$.
- ⁷⁶ $F=266.251$, $p=0.000$.
- ⁷⁷ $F=256.690$, $p=0.000$.
- ⁷⁸ $F=62.563$, $p=0.000$.
- ⁷⁹ Tukey $p=0.000$.
- ⁸⁰ While factor analysis showed no meaningful groupings of the three people analytics culture items, reliability analysis suggests a relationship between these items ($\alpha=0.98$).
- ⁸¹ $F=3.96$, $p=0.008$.
- ⁸² $F=5.005$, $p=0.007$.
- ⁸³ $F=4.621$, $p=0.010$.
- ⁸⁴ $F=4.621$, $p=0.010$, Tukey $p=0.007$.
- ⁸⁵ Tukey $p=0.006$, 0.007 and 0.002 respectively.
- ⁸⁶ $F=29.538$, $p=0.000$.
- ⁸⁷ $r=0.334$, $p=0.000$.
- ⁸⁸ $F=50.401$, $p=0.000$.
- ⁸⁹ $F=92.603$, $p=0.000$.
- ⁹⁰ Basic data analysis $F=4.586$, $p=0.003$, intermediate data analysis $F=6.490$, $p=0.000$, basic multivariate analysis $F=11.427$, $p=0.000$, advanced multivariate analysis $F=9.965$, $p=0.000$, writing about analytics $F=3.158$, $p=0.024$, presenting on analytics $F=3.474$, $p=0.016$.
- ⁹¹ $r=0.458$, $p=0.000$.
- ⁹² $r=0.597$, $p=0.000$.
- ⁹³ Tukey $p=0.018$ (overall $F=12.087$, $p=0.000$).
- ⁹⁴ Tukey $p=0.000$ (overall $F=12.087$, $p=0.000$).
- ⁹⁵ $F=312.464$, $p=0.000$.
- ⁹⁶ $F=62.563$, $p=0.000$. Asia and MENA Tukey $p=0.000$, USA $p=0.005$.

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