

Evidence-Based Mindset and Human Resources Analytics

1

LEARNING OUTCOMES

After reading this chapter, you will be able to:

- Define “human resources analytics.”
- Define “data” and explain the different types of human resources data.
- Explain how human resources functions can be measured by data.
- Describe the evolution from human resources to human resources analytics.
- Identify how key roles in human resources function and their links to human resources analytics.
- Describe the employee life cycle and its links to data-based human resources analysis.
- Explain the importance of an evidence-based mindset in human resources analytics.

CHAPTER OUTLINE

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Introduction

We live in a **data**-driven world. Our individual engagement with data is so pervasive that we may not even recognize how prevalent it is within our daily lives. It is almost impossible to think about all of the ways our daily activities are managed, shaped, and influenced through our interactions with data-driven technology.

You probably have a computer that goes with you wherever you go: your cellphone or smartwatch. These are mobile devices with data-based software that allows you to access an innumerable amount of data that is both literally and figuratively available at your fingertips. Let’s picture how you might use your mobile devices throughout the day. Perhaps your morning starts with a scheduled alarm that plays your favourite wake-up tune. You then check your smartwatch to see your sleep score and look at your schedule for the day. You remember that it is the start of reading week, and you decide to take a break from your studies to spend the day with people you’ve not seen for a while. You text a friend to make plans to meet at a local restaurant for lunch. Maybe you include an emoji that represents

data

a single thing or a collection of items that have a designated value, such as a number or numbers

your excitement for your lunch date. As you get ready to go, you use the map app on your phone to look up the restaurant. The name of the restaurant automatically fills in as soon as you start typing the letters, so you click on the name to get the address and directions. The app shows you how to get there by public transit, how long it will take, and where to avoid transit slowdowns along the way. You notice that the restaurant has a four-star customer rating along with the restaurant menu. You click on the menu to figure out what you would like to eat based on the positive customer reviews.

Reminding yourself not to get distracted, you refocus on your travel plans for lunch. Based on the directions, you figure out that it will take too long to get to the restaurant by public transit. Luckily you live in an urban community, so you use an app on your phone to order a rideshare service, such as Uber or Lyft. You get picked up within minutes, you are driven to where you need to be, and your credit card is charged automatically for the fare. After posting a five-star rating for your rideshare driver, you have a wonderful lunch with your friend. The food is as great as you expected it to be based on the ratings you saw earlier. You take a couple of selfies together with your friend and post them to your Instagram account, which automatically feeds the rest of your social media sites. When it comes time to pay for lunch, you point your phone at the point-of-sale machine the restaurant server brings to you, wait for the beep to confirm that your payment was processed, and say goodbye to your friend. Before you leave, you use your phone to give the restaurant a four-star rating and leave a customer review saying how much you enjoyed the food. You want to keep enjoying the rest of your day before getting back to your studies tomorrow, so you text a different friend to see if they want to meet you somewhere else for coffee and you use your phone to make plans accordingly.

Throughout this example, you used your phone to plan, make decisions, and act on those decisions. You used the data accessed through your phone to help you make travel plans and determine what you were going to eat. It allowed you to pay for your purchases without physical currency, or even a credit or debit card. Your phone tracked your movements and created a record of your experiences through the production of visual images (pictures) and numeric calculations (payments). You used your phone to make social connections with your friends by texting them directly or posting through social media. All of these decisions, communications, and actions were processed through your exchanges with your phone as a data-based computer device.

There is no doubt that our personal technology-based interactions with different types of data shape our daily experiences, influence the decisions that we make, and prompt the resulting actions that we take.

Now, if we shift our perspective to look at the businesses, services, and people you may have interacted with, we will see a similar pattern of data-based exchanges that rely on computer-based technology. While the primary tool or device that is used for a business may not be a cellphone or smartwatch—the physical tools may be a desktop or laptop computer or a wireless tablet—the data that is within that device is a source for creating business- and people-related information. This information is needed to run the business, to provide the services, and to enable the people to manage both business and service components, using the combination of data and data-based technology to plan, make decisions, and take necessary actions.

The restaurant manager uses their computer to keep track of inventory on various electronic spreadsheets. This includes food requirements, cleaning supplies, kitchen equipment,

tableware, and furniture supplies. Since almost all the non-food items have a sticker with a barcode on them, it's easy to use a hand-held scanner to scan and keep track of physical inventory on the computer. All food and beverage needs are ordered electronically from a commercial supplier that provides an automated spreadsheet on their ordering site. This helps the restaurant keep track of when, what, and how much food they need to order on a daily or weekly basis based on their existing menu. When you arrived at the restaurant, you were seated at a table that was empty because seating is allocated automatically through an electronic seating plan chart once the server inputs when tables are full and when they are cleared for service in their designated section. That point-of-sale payment you made was automatically deposited into an electronic revenue account. Funds from that account are distributed as needed into various expense accounts, including payments for restaurant employees. All restaurant employees have access to an electronic scheduling system that shows their weekly and daily work schedules. The work schedule is linked to an automated database (known as a human resources information system [HRIS]; more on this in Chapter 5) that holds all of their employee-related data.

In these personal and professional examples, we see how pervasive and interconnected the use of data is in our interactions. We also see how quickly and easily we can leave a digital trail of our movements, decisions, and actions. When we look at the patterns that are left behind by this digital trail, we see how the story of this day was mapped out through multiple data-based interactions.

The data-based tools we use and rely on every day used to be out of reach for most people due to cost and availability. What was prohibitive to purchase ten or even five years ago is now considered the cost of doing business or part of a personal cost-of-living expense that is needed in order to survive and thrive. While these technology-related examples give us a glimpse into how technology allows us to monitor and track data related to products, services, and things, the primary goal of this book is to focus on how people work and interact with data for business planning and decision-making. This is what **human resources (HR) analytics** is about.

Human Resources Analytics Cycle

Throughout this book, we will walk you through our Human Resources Analytics Cycle (Figure 1.1). HR analytics uses data to help solve business problems. These problems can be complex puzzles. Sometimes, we have an idea of where a puzzle piece should go. It may even initially seem to fit, but as more pieces are added, we realize that the fit needs to be adjusted. We start here in Chapter 1 with the fundamentals of an **evidence-based mindset**. An evidence-based mindset involves testing beliefs and theories about our workforce and being open to revising them based on additional data or new insights. Just as completing a puzzle provides a clear picture, bringing an evidence-based mindset to HR-related business problems improves our understanding of our employees and leads to better HR decisions and more effective HR practices.

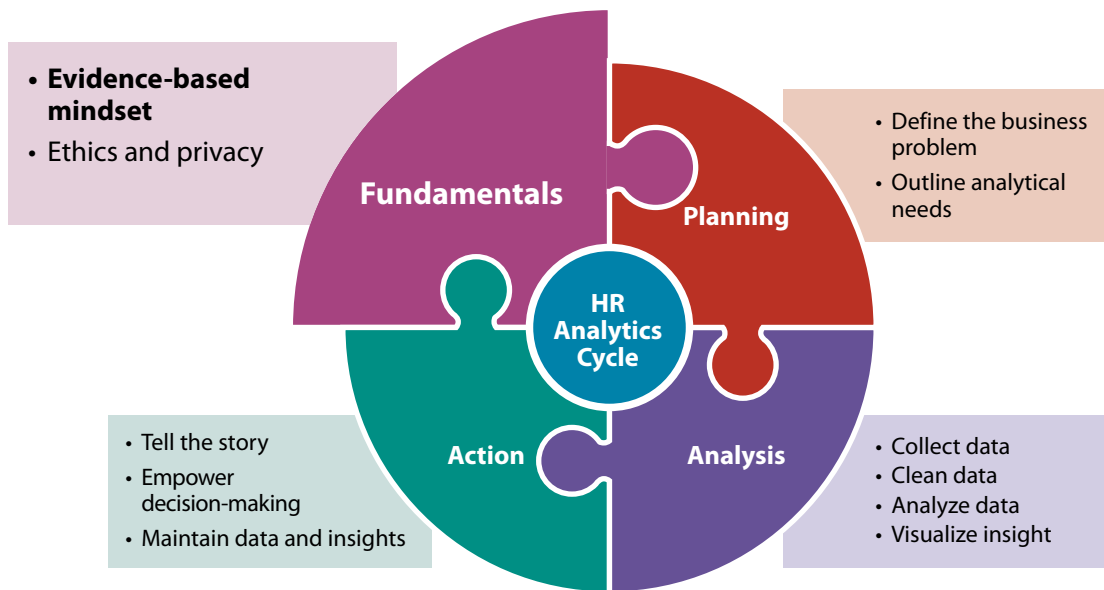
This chapter begins with shaping our understanding of what data means and how it is used by the HR professional in analytical practice. We will explore the evolution of HR as it incorporates HR analytics into all of its functional areas and how development of the evidence-based mindset builds powerful data-driven capacity for the HR professional.

human resources (HR) analytics

an evidence-based approach that involves the collection and application of organizational workforce data

evidence-based mindset

testing beliefs and theories and being open to revising them based on additional data

FIGURE 1.1 *Human Resources Analytics Cycle***CHECKPOINT**

1. List three ways you interact with data-driven technology every day.
2. What decisions do you make based on information and insights from technology?

What Is Data?

Before we begin to explore the relevance of data in the context of HR analytics, let's take some time to understand what data means for the purposes of this book.

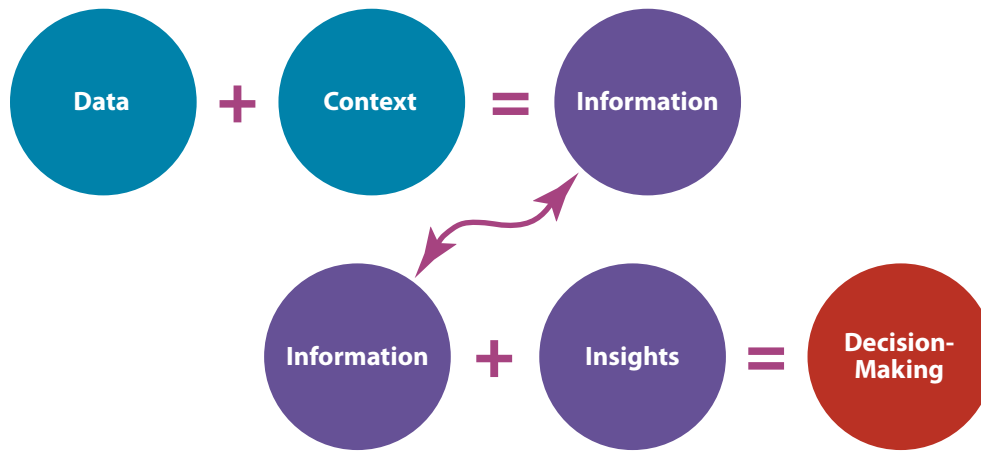
In its simplest form, data is a single thing or a collection of items that have a designated value, such as a number or numbers. A number is a piece of data that on its own does not have much meaning. In this state, it is considered “**raw data**” and has limited meaning until it is analyzed and interpreted within a particular context. We create meaning and value with data when we begin to apply context for a number. For example, as a piece of data, the number three represents a count of something. It could be three employees or three business departments or three bears. If we add the number three to a street name, it becomes a place. This could be a home for an individual or a business address for a large corporation. If we impose the construct of time onto the number three, it could mean that someone is three years old, or that a person has worked for an organization for three months, or that their wait time for a customer service call is three minutes. When we apply a monetary value to the number three, it could represent the last three dollars that is in the bank, or it could be a three-dollar credit on an account for bill payment. The application of context begins to shape and define what the data represents and gives it meaning. Data in context provides us with information. Information gives us insights that help to build knowledge.

raw data

a number or a piece of information without the application of context or meaning

As HR professionals, we use that knowledge to shape the organizational story so that effective decisions can be made (see Figure 1.2).

FIGURE 1.2 *From Data to Decision-Making*



Storing Data

Data is usually stored in a **database**, which is a digital receptacle for holding data. Within the database, data is organized according to specific categories. Categories define the data and provide context for the types of data that are being stored. We can pull data out of its stored state in order to transform it into information that both creates and has meaning.

Typically, we see **structured data** in database systems (more on this in Chapter 5). For example, the restaurant spreadsheet or table that shows specific bits of data in rows and columns is structured. So, when we select items from a menu, data is presented in an organized way, such as a list. Data can also be unstructured, which means that it is not pre-organized or pre-defined using specific rules or linear, table-based structures. **Unstructured data** includes things like sent and received text messages, digital imagery (photos), or email content. In our opening example, you used the data from a structured alphabet to type messages that communicate meaning through the creation of words or phrases.

Types of Data

Data generally falls into two broad categories: qualitative and quantitative.

If we think about structured data as providing us with quantifiable information (numbers, counts, and facts) then unstructured data provides us with qualifiable information because it increases meaning through the application of context.

Quantitative data includes “hard” factors or data such as dollars, distances, and dates. Hourly labour costs are an example of quantitative data that should be analyzed in the context of employee retention. However, we do not just look at the costs that come with replacing employees who exit the organization. Quantitative data is important, but it only tells part of the employee retention story.

In order to understand the full story, we also need to look at **qualitative data**. This includes “soft” data such as levels of employee job satisfaction and emotional engagement.

database

a digital or electronic receptacle that holds data

structured data

data organized and formatted in tables, rows, or columns; for example, spreadsheets provide for structured data

unstructured data

data not pre-organized or pre-defined using specific rules or linear, table-based structures; for example, texts or digital images are a form of unstructured data

quantitative data

numerical data that can be measured and quantified, such as dollars, distances, and dates

qualitative data

descriptive data that cannot be counted but can be categorized, such as levels of employee job satisfaction and emotional engagement

Measuring the effectiveness of workplace relationships is an example of qualitative data. This kind of measurement gives us evidence about the quality of the employee experience that also has an impact on employee retention.

No matter if it is structured or unstructured, quantitative or qualitative, data helps us to become more informed and guides us to make thoughtful decisions. Data helps us to make sense of the world around us more accurately because it provides information built on facts and evidence.

CHECKPOINT

1. How does data in context provide us with information?
2. Why do we need to use both quantitative and qualitative data in HR analytics?

What Does Data Have to Do with Human Resources?

human resources (HR) data

factual information that can be collected, retained, used, or distributed that relates to any employee; also known as “people data”

human resources function

scope of HR activities found within typical organizational structures that go beyond departmental boundaries to influence and shape organizational strategy

Human resources (HR) data, also known as “people data,” is factual information that can be collected, retained, used, or distributed that relates to any employee. This could be demographic data, such as age or gender identification. It could also be job-specific data, such as a job title or a list of job qualifications. It could include employee salary or wage categories, production levels or performance rankings. More generally, HR data can be any information collected or managed by the human resources function. We use the term **human resources function** to capture the scope of HR activities that are found within typical organizational structures. These activities go beyond departmental boundaries to influence and shape organizational strategy.

Although HR data is often used interchangeably with the following terms, they can refer to a different focus:

- Employee data is specifically focused on information about employees, such as employee names, employment history, and training completed.
- Workforce data can be broader than employee data, including contingent workers and even technology that complements human labour, such as artificial intelligence and automated systems.
- People data can also expand beyond employees to include other people associated with the organization, such as potential candidates, former employees, customers, and external business partners.

In this book, we may use any of these terms for HR data to mean the same thing.

HR data on its own does not provide enough information or meaning. This is where HR analytics steps in. The goal of HR analytics is to build a comprehensive, evidence-based organizational story through the combination of quantitative and qualitative data collection, measurement, and analysis.

HR analytics is an evidence-based approach that involves:

- the collection of the organization's HR data and the analysis of that data that looks for patterns or trends (this is explored in Chapters 5 to 8, in the Analysis part of our Analytics Cycle); and
- the transformation of the data, patterns, and trends into understandable information so that organizational decisions can be made (this is explored in Chapters 10 and 11, in the Action part of our Analytics Cycle).

Just as there are different terms used for HR data, there are different terms used for HR analytics:

- **People analytics** includes both HR and non-HR data, such as information on customers, finance, and operations. This is a popular term in practice.
- **Workforce analytics** is more focused on using data to understand and improve workforce planning and management.
- **Talent analytics** tends to focus on understanding and optimizing an organization's talent management strategies.

As with the different terms for HR data, we may use any of the above terms for HR analytics to mean the same thing in this book.

HR data is collected from various sources both internal and external to a business or organization. Sources that provide HR data include employees, supervisors, social media, industry associations, professional and government websites, and customers or those to whom service is provided.

Data collection can take multiple forms as well. We can collect HR data through a myriad of resources such as surveys, electronic monitoring, time tracking, observation, interviews, Excel files, and data input into HR information systems. Anything that is linked to an employee that is factual may be considered data. We can also collect employee-related data outside of employment-focused sources, systems, or functions that are not related directly to HR, such as sales figures, customer service counts, and other business operational statistics. This means that not all people-related data is found in one central source such as the HR department. We cannot assume that HR has ownership of all people data within an organization. Organizations must decide how data is differentiated, how data is stored, who can access data, and how data can be accessed and for what purpose. Most importantly, organizations and their human resource functions must ensure that any employee- or people-related data interactions are ethical and done in compliance with the law. We will explore the ethical and legal implications of working with HR analytics in Chapter 2.

Data infused with meaning becomes information. Information leads to the creation of organizational decision-making based on the volume, value, and veracity of people data that is provided through the HR lens. Organizational decision-making is fuelled by data as a starting point. The more high-quality fuel HR can provide in the form of people data, the more insights we have, and the better the decisions that can be made. Throughout this book we will explore the multiple ways data is used and analyzed so that it can be transformed from its raw state into meaningful information that powers HR and organizational decisions.

people analytics

includes HR and non-HR data, such as customer, finance, and operations information

workforce analytics

using data to understand and improve workforce planning and management

talent analytics

understanding and optimizing an organization's talent management strategies

data collection

the gathering of data from multiple sources including internal or external surveys, electronic monitoring, time tracking, observation, interviews, Excel files, and data input into human resource systems or other digital systems

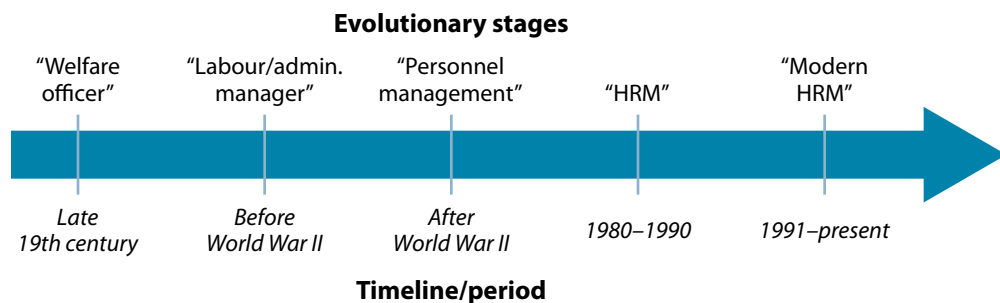
CHECKPOINT

1. What types of employee-related data can be collected that are not related directly to HR?
2. Identify three terms that are used interchangeably to identify HR analytics.

The Evolution of Human Resources Analytics

Experts predict that by the year 2030, “HR will be at the heart of the company, using analytics and business forecasting to focus strategic workforce decisions” (Sage, 2022, p. 14). This prediction comes from the ongoing evolution of HR management from the 20th into the 21st century.

FIGURE 1.3 Evolution of Human Resources Management



Source: Adapted from Abuladze & Skorková (2021, p. 3).

20th-Century Human Resources Development

As we see in Figure 1.3, the evolution into modern human resources management (HRM) emerges from the mid-20th century. Prior to the Second World War, employees in the post-industrial age were treated as machines “whose desires, feelings and motives were ignored” (Abuladze & Skorková, 2021, p. 3). As the development of workplace theories based on scientific management, behavioural science, and industrial organizational psychology emerged from the 1940s into the early 1980s, organizations began to recognize that employees were more than just extensions of a machine. Employee productivity does not just rely on money or material rewards. During this evolutionary phase, we see the emergence of organizational and behavioural theories that recognize that employees have psychological and social needs. In order to develop the potential power of humans in the workforce, all of these needs must be considered, included, and rewarded (Abuladze & Skorková, 2021).

In the mid-1950s to early 1980s the administration of the “Personnel Department” begins to develop, with the primary responsibility of ensuring that the employee workforce is hired, trained, evaluated, and compensated. It is during this era that we see the development of human capital theory, which identifies the economic benefits of humans in a workforce. **Human capital theory** recognizes the value of the workforce as a resource that

human capital theory

identifies the economic benefit of humans in a workforce; recognizes the value of the workforce as a resource that requires investment through employee skill development

requires investment through employee skill development. The more the organization invests in the skills development of its employees, the better the entire workforce should perform (Nafukho et al., 2004). The better the workforce performs, the greater the productivity and organizational profits that can be achieved. As the development of a performance-based employee workforce begins to emerge in the 1990s, we see the shift from “Personnel” to “Human Resources” as a professional function. This shift expands the recognition of the value of humans in the workforce as a resource, and the value of humans as social beings who are connected to each other and to the world around them.

The development of HRM continues as “the drivers of value creation for businesses have shifted dramatically, from tangibles—machinery, buildings, land and inventory—to intangibles such as people, goodwill and brand recognition” (Khan, 2019, para. 1). The ideal goal for the continuing development of HR is the movement toward a more humanizing view of the workforce by focusing on issues such as employee engagement; employee experiences; and, ultimately, employee happiness.

Through these evolutionary stages, we see how performance-based evaluation of human capital has developed into modern-day HRM with its emphasis on the value and values that people in the human workforce bring to an organization. Combined with technological advances, we see the emergence of HR analytics as a critical tool for measuring the impact of these people-focused values. The increased reliance on HR analytics also provides insights into how these values can generate positive outcomes for both the business and the humans involved in supporting the business.

21st-Century HR Development

The movement from seeing HR as simply “human resources” toward being more “people” focused continues its evolution into the 21st century. We see the development of **data science**, which is a multidisciplinary approach to the study of data that increases the emphasis of measuring the value of the human workforce. This, along with continuing technological advancements, enables organizations to access vast amounts of people and organizational data to make business decisions. According to David Green, who provides us with an evolutionary view of HR analytics, this “desire to measure and monitor everything with an adequate level of efficiency and effectiveness, led to the realization that analytics was critical” (2021, “The Age of Realisation,” para. 1).

The critical need for HR analytics came into clear sight during the rise of the COVID-19 pandemic. As Canadians, our work world expanded and contracted and then expanded again while living through the pandemic that took hold of humanity in early 2020. This was not the first pandemic to impact thousands if not millions of humans; it was, however, the first pandemic of the 21st century that left both destruction and development in its global wake. While the world was in the grips of lockdowns that required physical isolation from each other, communication between us, as humans, did not stop. Alternate forms of connection filled the spaces that were left empty due to the lack of direct people contact. While we were not able to be in physical contact with each other, we did not stop communicating and connecting with each other through virtual spaces that were and continue to be filled through the use of technology.

During the rise of the pandemic, we saw how organizational data was used and put into context in multiple ways on a global health care scale. The rates of infections sweeping across different nations were counted, tracked, and posted. The number of nations impacted

data science

a multidisciplinary approach to the study of data to make business decisions

by the pandemic was counted, tracked, and posted. Vaccination rates were counted, tracked, and posted. Hospitalizations were counted, tracked, and posted. All of these numbers and rates provided data-based evidence, and the analysis of the evidence provided data-based information. This information was used to tell the pandemic and healthcare stories so that people could understand what was going on in the world around them.

From an HR perspective, we cannot ignore the significant impact of the pandemic as a catalyst for change. It escalated the need for people-focused and technology-driven priorities—such as remote work and employee well-being. These expectations continue to evolve in support of an agile workforce that promotes safety and well-being, positive employee experiences, and digital transformation through the human resources function.

Not only were expectations escalated for HR development—scrutiny through data-based analysis of HR performance and practices skyrocketed. Research studies show that 72 percent of HR leaders found that the pandemic crisis increased the value and wider understanding of their role across organizations, and 59 percent said the pandemic enabled them to become more visible and influential. In addition, 60 percent of employees identified significant changes in HR's role, such as becoming more people-focused and strategic (Sage, 2022).

HR information management, through data-based analysis, is critical. We work in an increasingly complex legislative workplace environment where compliance and commitment to legal requirements are not optional. Not only does the human resources function have to track, monitor, and report on matters of legal compliance, but the collected data must be up to date, accurate, and instantly available. Arising out of the pandemic, we see the shifts in where and how workplaces are structured. Remote work is now a reality, and the monitoring of a remote workforce can be done through data-based technology. The impact of the global marketplace on goods and services has increased economic competition around the world. As a result, HR data must be collected, analyzed, and reported as quickly as possible to maintain a competitive edge, no matter how big or small the business may be. It is imperative, however, that we do not lose sight of the human component, the human being, at the centre of HR analysis.

The pandemic impacted everyone and everything, including the way we communicate, the way we learn, and the way we work. As we continue to move forward in a post-pandemic world, it is clearer than ever that organizations continue to adapt and change with an increased reliance on technology-based tools and processes, such as the integration of **artificial intelligence (AI)** in the workplace. Artificial intelligence is an evolutionary computer tool that provides information, responses, and predictions based on data by using algorithms and machine-based learning. Artificial intelligence is capable of tasks that have typically required human intelligence, such as identifying patterns, summarizing data insights, and making predictions. We will explore the uses, risks, and impact of AI for HR analytics in Chapter 2.

artificial intelligence (AI)

the development of computer systems that replicate human responses to various prompts

Human Resources and Changing Leadership Roles

The shift to a people-focused HR approach is reflected in changing models of leadership structures. As organizations continue to rely on the need for accurate and complete data analysis for decision-making, the relationships between leadership roles is also changing. HR, with its capacity to provide data-based analytics, provides a fundamental pillar in emerging leadership structures. While traditional leadership models may include a variety of inputs,

transformational experts agree that organization success relies on the ideal integration of three key components:

- ideas,
- finances, and
- people power (Khan & Millner, 2023).

Figure 1.4 shows what emerging leadership relationships may look like, based on the integration of these three components.

FIGURE 1.4 *The Golden Triangle*



Source: Adapted from Khan & Miller (2023, p. 41).

In this ideal leadership structure, we see an equal relationship between the three pillars of organization leadership accountabilities. The chief executive officer (CEO) receives information from positions that report to them, such as the chief human resources officer (CHRO) and chief financial officer (CFO). Each of these roles relies on data analysis in order to make organizational decisions. It is imperative that these roles share data analysis in order to create a complete picture of the organizational story.

The CEO has the ultimate accountability and authority for all organizational decisions. The CFO has accountability and responsibility for business numbers and data related to organizational “things.” The CHRO has accountability and responsibility for all people-related matters including understanding their organizational stories. The CHRO must understand the pulse, the heartbeat, of the organization through its people. This kind of equitable structuring increases the significance and impact of the human resources (people) function and maximizes the relationship between these three organizational pillars (Khan & Millner, 2023).

Humanization of Human Resources

As discussed previously, a people-centred approach for HR represents a significant shift in its evolution. In the mid- to late-20th century, HR was perceived as a cost centre. This

means that, as a department or a function, it did not bring in revenue in the way a Sales department or other revenue-generating department could. HR was perceived as a financial expense. Since the biggest financial expenditure in any organization is the cost of employees, management and control of payroll was also vested in the Finance department. The reliance of purely financial, cost-based resources meant that HR was not expected to speak in the language of numbers. HR's focus was on the development of policies, procedures, and programs linked to employee skills development.

As 21st-century organizations expand their reliance on data-based technology and their understanding of the human needs within the workforce, the need for more data and analysis of the human workforce experience is critical. We see the shift from a purely cost-centred approach to incorporating and looking at human-related elements such as employee wellness, job satisfaction, and employee engagement, which have a direct impact on both financial and organizational success. This shift results in a greater use of numbers and data that is not strictly financial or cost-based. The value of the humans performing the work begins to shape how and what kind of HR data is required.

Most organizations now have the payroll function working within HR. This is only one example that tells us that numbers are no longer only in the purview of the finance function. They are a shared responsibility between finance and HR, and both functions use data-based analysis to share information in order to make organizational decisions.

For HR professionals, this means developing the skills, abilities, and competencies needed to speak the language of numbers through HR analytics.

CHECKPOINT

1. Which theory supported the shift from "Personnel" to "Human Resources Management"?
2. What kinds of employee needs were recognized through organizational and behavioural workplace theories?
3. Identify one significant workplace change that resulted from the COVID-19 pandemic.
4. What are the three key components that need to be integrated to ensure organizational success in the emerging leadership model?
5. What are the human elements that have a direct impact on both financial and organizational success?

HR ANALYTICS IN PRACTICE

Tempo Flexible Packaging

Tempo Flexible Packaging is an innovative and award-winning food packaging company located in Simcoe County, Ontario. Committed to sustainability and core values, it continues to prove itself through its HR strategies focusing on increasing employee engagement and establishing trustworthy HR relationships. Alison Jursa, people and culture generalist, says:

It used to be that people would think connecting with HR for anything was like having to visit the principal's office and that was not a good thing. We needed to change our relationships with all employees through consistent, open, and honest behaviours.

How did HR analytics help to shift employee and employer perspectives?

Even though the company completed annual compensation reviews, employees were not satisfied with the results. Luigi Stellato, the company's people and culture coordinator/analyst, explains that after the most recent review, "We received a letter from one of our key employees indicating that they received an offer of employment from another company in our geographic area, offering a significantly better compensation package for the same duties and responsibilities."

The impact of losing even one employee would be devastating. Stellato says,

We recognized that it was not just one employee who was underpaid, the whole department was impacted. Even though this was a small department, we could not afford to lose any employees from this key department. Their work and their contributions to the company were critical to its continued success. We needed to fix the pay problems immediately.

As a result, the HR team implemented a comprehensive, evidence-based analysis of these key functions and their corresponding wage rates. This included a review of the criteria used for compensation analysis. New criteria included benchmarking with an in-depth analysis of market rates, geographic location rates, competitive industry rates, and cost-of-living rates for the area. By expanding the scope of evidence collected for their analysis, the company was able to implement competitive wage scales with improved pay rates.

Says Jursa, "The numbers gave us the evidence we needed to make changes that showed we were listening to our employees because we valued them. We didn't want to lose them." Stellato adds that this review "opened our eyes to make sure we were using current benchmarking and compensation analysis for all of our departments" and that the company has since implemented a six-month compensation strategy review.

Jursa speaks to the power of HR analytics to change employee perspectives:

At the end of all of this, we just wanted to show our employees how important they are and that we are listening to them. HR analytics gave us the evidence that allowed us to prove how much we value our employees and that we recognize their worth.

With thanks to Tempo Flexible Packaging, Alison Jursa, and Luigi Stellato for their contributions. Personal communication, October 26, 2023.

HR Analytics and the HR Function

Structures

Throughout this book, we will continue to identify the different roles within HR and how these roles are intertwined with HR analytics. HR roles and functions should be structured to align with transactional, operational, and strategic organizational requirements (see Figure 1.5).

Transactional HR activities are those that are routine, are task-oriented, and may be repetitive. For example, keeping track of daily employee attendance and absenteeism rates, producing seniority lists on an annual basis, or processing payroll every two weeks are transactional activities that rely on HR analytics. The collection of employee data is, on its own, an example of a transactional HR activity linked to analytics. While these activities are important, they are administrative in nature and are implemented in response to an operational need that aligns with a strategic goal. It is imperative that transactional HR activities

transactional HR activities

activities that are routine and task-oriented, and that may be repetitive

operational HR activities

programs or projects that focus on achieving organizational objectives or specific goals

strategic HR activities

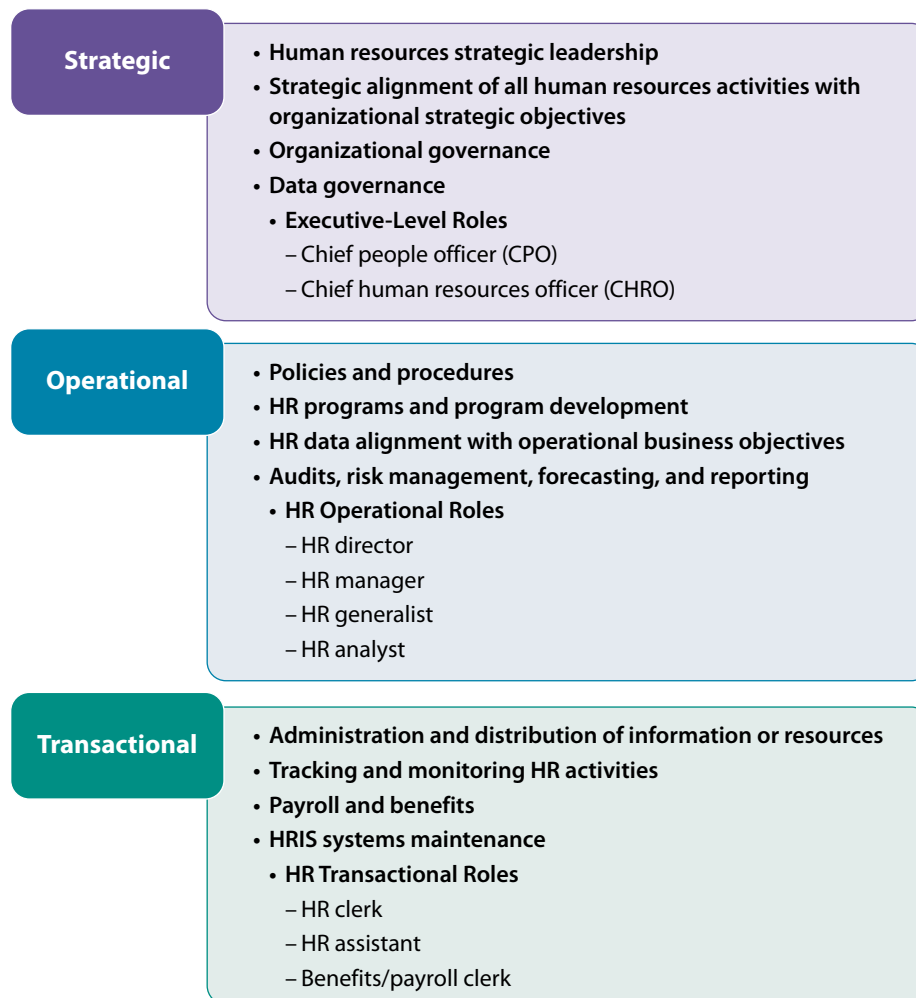
the coordination and alignment of all HR activities, functions, and objectives with the organization's goals and strategies

rely on accurate and credible data through their various collection, storing, and monitoring processes based in sound HR analytics practices.

Operational HR activities are programs or projects that focus on achieving organizational objectives or specific goals. Having up-to-date policies and procedures, offering health and safety training, or creating inclusion and diversity programs for employees are examples of operational activities that are focused on a strategic goal to improve organizational work culture. Implementing and monitoring operational HR activities are tracked, measured, and reported on through HR analytics.

Strategic HR activities provide the coordination and alignment of all HR activities, functions, and objectives with the organization's goals and strategies. In this capacity, strategic HR shapes and supports the organization to meet its corporate goals. HR analytics provides the opportunity to tell the evidence-based story of how strategic HR and organizational strategies are aligned in order to achieve success.

FIGURE 1.5 *Human Resources Structures*



Let's say an organization working with clients or customers has a strategic objective of excellence in customer service. This is a high-level ideal. The strategic HR initiative would be to ensure that all practices and programs are focused on supporting this ideal of excellence. An operational HR program in support of this ideal would be to provide ongoing excellence in customer service training to all employees. The resulting transactional activity would be to track the number of employees that participate in customer service training programs. HR analytics assists in this alignment because it goes beyond just tracking the number of employees who attended and analyzes whether the training programs were effective. HR analytics is used to look for evidence that the desired results were achieved in support of the strategic ideal of excellence.

Strategic HR management means that all employee-/people-related services and functions must not only align to support organizational strategic objectives but must also drive organizational success. As HR continues to evolve, we must provide credibility and consistency through HR analytics to allow for accuracy in decision-making.

Roles

HR is usually set up as a separate department or a business unit within an organization. Even though HR departments may have a designated HR professional or even a team dedicated to HR analytics in larger organizations, the reliance on and access to HR data is distributed throughout all of the roles within the department. HR professionals simply cannot do their jobs without access to HR insights. How that data is collected, analyzed, and used reflects the responsibilities each HR role has for supporting both employee and organizational experiences.

Table 1.1 provides an overview of typical HR roles linked to analytical functions (this is not an exhaustive list).

TABLE 1.1 *HR Roles and Analytical Functions*

HR Role	Analytical Functions
Chief Human Resources Officer Chief People Officer	<ul style="list-style-type: none"> • Develops and executes HR strategy to align with organizational business plans and strategic directions • Embeds data-driven decision-making in HR strategy • Fosters evidence-based culture • Leverages HR analytics to communicate value and drive strategic HR decisions
Human Resources Director Human Resources Manager	<ul style="list-style-type: none"> • Manages HR operations • Develops HR programs to support business objectives • Leads HR staff • Delivers dashboards, reports, and presentations • Communicates HR insights and recommendations • Collaborates with other functions and departments to integrate and leverage HR data across the organization • Evaluates and measures the impact of HR analytics initiatives and projects

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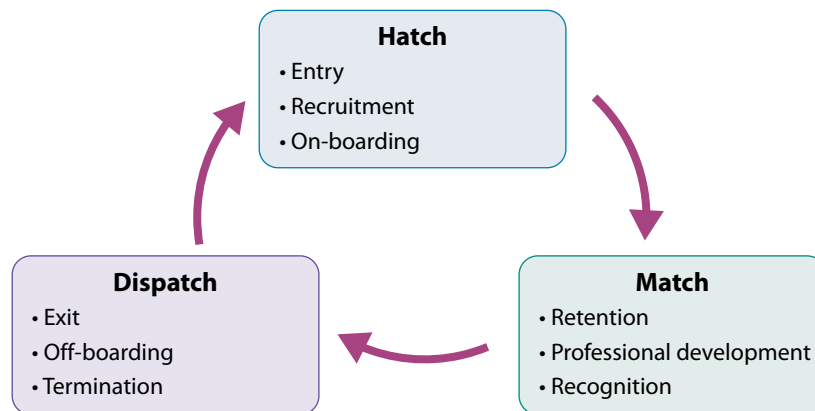
HR Role	Analytical Functions
Human Resources Generalist Human Resources Specialist	<ul style="list-style-type: none"> • Provides operational support to employees, managers, and departments • Implements HR programs and procedures • Provides specialized support such as labour relations, health and safety, training and development, compensation programs, and payroll management • Tracks, monitors, and measures progress through HR analytics
Human Resources Analyst	<ul style="list-style-type: none"> • Collects, analyzes, and prepares reports based on HR data • Is accountable for HR systems • Manages and optimizes HR data systems, tools, and platforms • Identifies and explores new data sources, methods, and technologies to improve HR analytics capabilities • Provides HR analytics
Human Resources Administrator Human Resources Clerk	<ul style="list-style-type: none"> • Provides administrative support for HR programs and people • Provides data entry, collection, and monitoring through the application and use of HRIS

Employee Life Cycle

employment life cycle the cycle within an organization from employee entry to exit, following the pattern of hatch-match-dispatch: employees are hatched into the organization, employee services are provided to match what they need during their time within the organization, and employees are dispatched as they exit the organization

Canadian HR expert David Weiss explored the idea of the **employment life cycle** as the core responsibility of HR in the management of people processes in the late 20th century (Weiss, 1999). This cycle shows us how the people who work for an organization can and should be supported by HR throughout the entirety of their life cycle within the organization (see Figure 1.6).

FIGURE 1.6 *The Employment Life Cycle*



According to Weiss, HR is responsible for both the people and the processes that are used to support all of the people who are employees throughout their life of employment within an organization:

- HR “hatches” employees into the organization through talent attraction, recruitment, and on-boarding programs.

- HR “matches” the services employees need when they are within the organization through talent development, employee recognition, service programs, rewards, and compensation structures.
- Employees are “dispatched” out of the organization either voluntarily or involuntarily.

The cycle ends for the employee when they exit the organization, and the cycle begins again each time a new employee is brought into the organization through the hatching stage. While these three core people processes (hatch-match-dispatch) present a cyclical flow that is repeated every time an employee joins an organization, they are interconnected and reliant on each other for continuous movement.

For example, a weak compensation strategy may decrease the time an employee chooses to stay within an organization, causing a voluntary exit or a self-dispatch. If talent development is strong, this may increase the time an employee chooses to stay within the organization, leading to a decreased need for hiring and recruitment programs. Reputation management is a key employment consideration for prospective employees seeking to work with an organization that aligns with their personal and professional values. A poor organizational reputation could mean that employment vacancies will not be filled as easily. If there are a high number of employment vacancies, those employees already in the matching part of their employment life cycle will begin to feel the strain of having to work with reduced staffing numbers. These staffing reductions impact workplace culture, employee engagement, and overall employee performance, leading to increased disengagement and the potential of increased organizational exits.

A healthy life cycle means that all of the HR-related programs and functions supporting the cycle are themselves viable and healthy. How can we assess the health of each of these functions? How do we know if programs are successful? How do we know if employees are working through their individual life cycle only as a means to survive outside of the workplace? How do we know if employees are engaged and thriving inside the workplace?

The answers to these questions are provided through the use of HR analytics.

HR analytics begins with the collection and storage of people data through technology-based systems. The next step of HR analytics is to shape what the data means, which is done through tracking and measurement. There is a saying that is attributed to the management theorist Peter Drucker: “What gets measured gets improved.”

Measurement of data provides us with metrics. **Metrics** are measurements that typically use a calculation involving several different pieces of data. Good HR analysis includes understanding the value of data, measuring the data, and then transforming it all to make sense of and inform organizational decision-making.

We use measurement in order to understand the workforce at any particular point in time. Measurement is ongoing and involves analyzing data collected from various sources, including managing organizational relationships, gathering business intelligence for internal and external sources, keeping in touch with informal communications, analyzing and reporting on trends, and constantly monitoring workforce (people) activity in compliance with legal and ethical privacy obligations.

In the hatch-match-dispatch cycle, we can see that each of the functions has subsets of possible HR activities supporting that function. Table 1.2 shows us how each subset might be used to collect data and apply different types of measurements or metrics to monitor workforce-related people and HR activities.

metrics
quantifiable measures used to track and assess the status of specific business processes or activities

TABLE 1.2 *Hatch-Match-Dispatch and Data Collection*

Hatch Function	What types of people data could be collected and measured?
Reputation management	<ul style="list-style-type: none"> • Job candidate rates based on company reputation • Social media and marketing rates/rankings • Percentage of employees who refer job candidates
Recruitment strategies	<ul style="list-style-type: none"> • Internal promotion rates • Rate of responses to job postings through social media feeds and job sites • Self-identified diversity hire rates
Selection and hiring processes	<ul style="list-style-type: none"> • Number of days it takes to fill vacancies • Number of candidates applying for vacant positions • Quality and qualification match rates between candidates and job requirements
Orientation programs	<ul style="list-style-type: none"> • Number of employees attending orientation days • Costs per employee per program
On-boarding programs	<ul style="list-style-type: none"> • On-boarding program feedback • Short- or long-term retention rates for employees attending on-boarding programs

Match Function	What types of people data could be collected and measured?
Talent development	<ul style="list-style-type: none"> • Number of employees attending learning and development programs • Survey results for talent development programs
Performance management	<ul style="list-style-type: none"> • Performance rankings by department • Number of employees • Employee feedback on performance management systems
Attendance culture	<ul style="list-style-type: none"> • Number of absences versus number of employees attending to work over a set period of time • Changes in number of illness dates per season • Number of employees choosing to work from home rather than a designated workplace • Voluntary and involuntary leaves of absence
Employee engagement	<ul style="list-style-type: none"> • Rate of employee satisfaction in the workplace • Number of employees completing employee engagement surveys • Measuring employee engagement scores after implementing an employee engagement initiative
Inclusion and diversity management	<ul style="list-style-type: none"> • Ratio of self-identified diversity promotion rates • Self-identified gender rates in senior leadership and executive positions • Number of inclusion and diversity management training programs for supervisors/managers • Number of workplace harassment claims

Match Function	What types of people data could be collected and measured?
Compensation strategy	<ul style="list-style-type: none"> • External market surveys based on current wage rates • Comparison of overtime payments over a set period of time • Number of employees applying for job changes due to differing compensation rates
Rewards management	<ul style="list-style-type: none"> • Costs for benefits packages and changes over a set period of time • Number of employee and dependent participants in employee benefits programs • Employee recognition and awards given over a set period of time
Safety culture	<ul style="list-style-type: none"> • Accident and incident rates • Worker replacement costs per injury • Number of safe working days per day, month, and year
Employee/labour relations	<ul style="list-style-type: none"> • Grievance or complaints rates • Number of labour relations meetings • Number of successful grievance resolution rates
Workplace training	<ul style="list-style-type: none"> • Number of skill-specific training programs • Attendance rates for training programs • Retention rates for employees who have attended training programs
Organizational culture	<ul style="list-style-type: none"> • Survey responses to questions about organizational decision-making • Organizational commitment rates to sustainability • Number of corporate social responsibility programs • Participation rates for respectful workplace initiatives
Workplace learning strategies	<ul style="list-style-type: none"> • Employee perception rates of workplace learning initiatives • Percentage of employees participating in workplace learning programs • Ratio of organizational objectives and alignment with workplace learning strategies
Job design	<ul style="list-style-type: none"> • Job design feedback from interviews with incumbents • Observational task and production rates • Number of accidents or incidents due to poor job design
Job analysis	<ul style="list-style-type: none"> • Number of jobs analyzed per year • Job classification changes as a result of job analysis
Job satisfaction	<ul style="list-style-type: none"> • Employee retention rates for specific jobs over a period of time • Employee satisfaction with working conditions • Working with colleague satisfaction rates
Retention strategies	<ul style="list-style-type: none"> • Employment surveys for long-term employees • Number of changes made as a result of completed surveys • Comparison of employee exits versus number of stays year over year

(Continued on next page.)

Dispatch Function	What types of people data could be collected and measured?
Exit interviews	<ul style="list-style-type: none"> • Number of exit interviews completed over a period of time • Comparison of exit interview result categories • Percentage change in results based on retention strategies to reduce exits
Resignation	<ul style="list-style-type: none"> • Changes in resignation numbers over a period of time • Resignation reason rates • Internal resignation rates due to promotions or transfers
Retirement	<ul style="list-style-type: none"> • Years of service and age rate comparisons • Number of retirements per year • Anticipated future retirement rates
Involuntary termination	<ul style="list-style-type: none"> • Number of terminations for cause over a set period of time • Number of terminations without cause over a set period of time • Costs and number of wrongful dismissal claims over a set period of time
Death	<ul style="list-style-type: none"> • Number of employee deaths due to non-work-related reasons • Number of employee deaths due to workplace accidents • Impact of employee-related deaths on colleagues • Participation rates in employee grief and wellness programs

Table 1.2 is not a complete list of all of the activities that fall into the employee life cycle. It does give us an overview of the numerous possibilities the cycle provides to collect and measure HR data. It is critical to measure both positive and negative patterns of activities related to the management of HR. The analysis of the patterns reveals trends that begin to shape the information required for telling the organizational story.

For example, if we are required to report on employee retention issues, this requires data about employee satisfaction rates. We need to understand why employees are leaving or staying in the organization. What data can we collect that tells us whether our employees are satisfied or unsatisfied? What tools can we use to collect data and then measure employee satisfaction rates? What is the story that these employee satisfaction rates tell us?

In order to understand the complete picture of employee retention issues, we need to gather all of the data-based variables that influence an employee's decision to stay or go. The data we collect is the evidence we use to build and tell the employee satisfaction story.

In all these examples of possible points for analysis, we must keep in mind that the goal is not to replace or reduce the value of people. Rather, the goal is to enhance and empower people to make better decisions. Data collection and the resulting analysis of that data helps us to become more informed. This analysis guides us to make thoughtful decisions based on facts and evidence.

CHECKPOINT

1. Where does the responsibility for HR analytics rest within the HR department?
2. What does the hatch-match-dispatch flow represent?
3. Why is it important to measure workplace activities?

The Need for an Evidence-Based Mindset in HR Analytics

HR analytics is not, in itself, an outcome. It is a complex and powerful tool that can be used to positively impact both the quality of HR programs and the organization as a whole.

If HR wants to be heard, it needs to be able to put HR arguments in business language, meaning using data that links HR decisions to business outcomes. This is the key. Otherwise, discussions between HR and [others] becomes one person’s “gut” versus someone else’s “gut.” (Diaz et al., 2020, p. 4)

There is no doubt that, in our relationships with other people in the workplace, we rely on feelings and emotions that are often based on personal judgment. These are instinctual or pure gut reactions. For the HR professional, our gut reactions may signal that there is an issue that needs further investigation. However, these reactions may be influenced by our own biases, perceptions, and experiences. This is where the collection of evidence-based data assists in our investigations. An evidence-based approach provides answers, whereas human intuition alone provides a prompt for questions.

No matter what the role of the HR professional may be, it is imperative that they build, develop, and maintain an **HR analytics mindset**. This includes thinking about the workforce from a human-centred approach. At the same time, we use data collected from the workforce to support **evidence-based decision-making**. This means that the HR professional must develop an evidence-based mindset (Rousseau, 2001) that includes both capacity and strength in **data literacy**.

Data literacy (Figure 1.7) is a core competency for any HR professional. It includes:

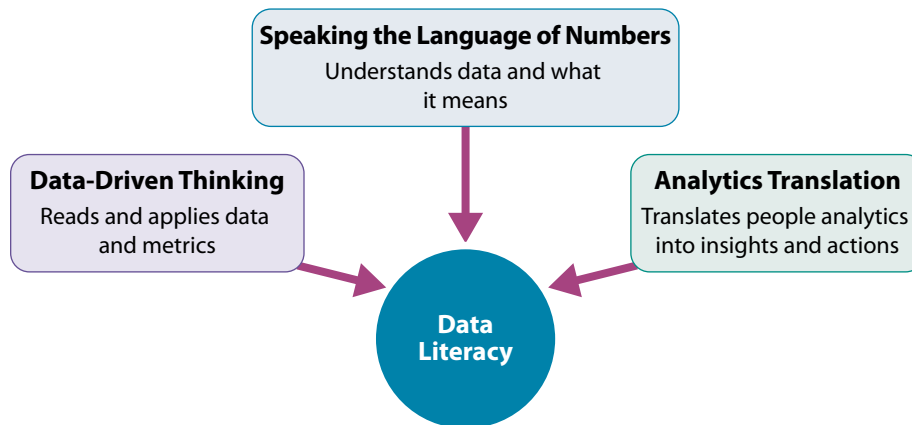
- understanding and speaking the language of numbers,
- understanding and interpreting data,
- applying data appropriately for specific purposes,
- thinking critically about what data reveals, and
- translating data into information.

HR analytics mindset
a human-centred approach that uses data-based evidence for decision-making

evidence-based decision-making
the reliance on facts and data to inform or make decisions

data literacy
a core HR competency that includes understanding, thinking, speaking, translating, and critical thinking in the language of data

FIGURE 1.7 Data Literacy



Source: Adapted from Boatman (n.d.).

An HR analytics mindset is not just about data literacy. It includes the development of consistent data literacy behaviours, which include:

- identifying and leveraging relevant data when making decisions, providing recommendations, or analyzing organizational issues;
- interpreting metrics and data visualizations, using an understanding of basic statistics, to identify patterns and extract insight where possible;
- following established processes when inputting or working with data in HR systems to ensure proper data quality; and
- using effective storytelling to communicate results of data analysis and influence business decisions (McLean & Company, n.d.).

TIPS AND TOOLS

Building Capacity for an HR Analytics Mindset

Using an evidence-based approach helps to clarify or validate what your intuition is telling you.

Practise asking data-based questions that require data-based answers. A simple tool for building evidence-based thinking is using the application of who, what, where, when, and how types of questions.

For example, if your intuition is telling you that your employee population is not representative of the broader external community, you could ask the following questions:

- Who are we surveying to gather demographic representation from all employees?
- What kinds of employee demographic information are we collecting?
- Where are the trends or patterns that reveal themselves from our employee demographic analysis?
- When was the last time we collected data from representative employee groups?
- How does the demographic data we collect compare to the demographic data of the external community?

By asking these types of simple questions, you can build the evidence to support or challenge your intuition-based perceptions.

The Power of HR Analytics

Information based on relevant and accurate data provided through HR analytics has the power to drive more equitable, evidence-based decision-making for the organization. It can:

- reduce people-related risks such as workforce injury rates and implement corrective actions to prevent workplace accidents;
- reduce organizational-related risks such as potential human rights violations by analyzing the diversity of the workforce and implementing proactive equity programs;
- reduce risk-related costs such as compensatory damages or costs of lawsuits;
- increase business value by, for example, identifying strategic skills gaps to target recruitment efforts; and
- design tailored employee development to enhance organizational performance.

HR analytics provides the evidence that links the effectiveness of tactical, transactional tasks through operational systems to support strategic objectives. All of this starts with data—understanding data, using data, translating data, and transforming data into information and decision-making purposes.

Our goal through this book is to increase your analytical capacity as an HR professional. You will develop the credibility, capacity, and strength that comes with evidence-based decision-making that is based on data, data analysis, and data literacy. HR professionals are also key to facilitating an evidence-based approach to workforce decision-making across the organization by sharing meaningful HR insights with key stakeholders and engaging in data-driven discussions with business leaders.

CHECKPOINT

1. Identify two components of an HR analytics mindset.
2. What is evidence-based decision-making?

CHAPTER SUMMARY

- HR professionals need to develop an evidence-based mindset to understand and work with data in order to influence organizational decisions and decision-makers.
- The evolution of HR has shifted from viewing humans in the workforce as machines to recognizing that the social, emotional, and psychological needs of people must be met in order to have a productive workforce.
- A humanizing view of people in the workforce allows HR analytics to measure and delve into issues such as employee engagement, employee experiences, and employee happiness.
- HR analytics provides a critical tool to assess people-centred values that measure organizational success.
- HR professionals use data to measure, assess, support, and develop employees in each stage of the hatch-match-dispatch employee life cycle.
- The prevalence of data continues to shape the work of HR professionals to support data-driven and evidence-based organizational objectives.

KEY TERMS

artificial intelligence (AI), 12
data, 3

data collection, 9

data literacy, 23

data science, 11

database, 7

employment life cycle, 18

evidence-based decision-making, 23

evidence-based mindset, 5

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metrics, 19

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qualitative data, 7

quantitative data, 7

raw data, 6

strategic HR activities, 16

structured data, 7

talent analytics, 9

transactional HR activities, 15

unstructured data, 7

workforce analytics, 9

REVIEW AND DISCUSSION QUESTIONS

1. Using the hatch-match-dispatch and data collection information in Table 1.2, select one function from each section and explain how the data can be used to measure and assess how the workforce is doing. For example, for recruitment strategies from the Hatch section, internal promotion rates can be tracked through quantitative measures to assess the frequency and number of successful internal promotions in a given time period. If there are high numbers of internal promotion rates, this could be an indicator of employee loyalty and engagement, as employees would choose to remain with the company through promotion and upward mobility.
2. How can you develop an HR analytics mindset? What role does instinct play in this development? How will an HR analytics mindset assist you in your approach as an HR professional?
3. Why is it important to include both quantitative and qualitative evaluation of HR programs? Identify three HR activities and map out both qualitative and quantitative measures.
4. A company proceeds with downsizing through layoffs without reviewing short- and long-term staffing needs, including customer service demands, retirement indicators, or employee termination rates. In a group, discuss how this situation could be averted through the use of HR analytics.
5. A small retail chain is struggling with perceptions about low morale within its frontline, customer-facing employee groups. There are rumours that employees are dissatisfied with their working conditions, but no one has come forward with specific complaints or concerns. You, as the HR professional designated to work with these employee groups, have been asked to find out if the rumours are true and if the perceptions about low morale are accurate. Using the hatch-match-dispatch and data collection framework as a guide (Table 1.2), identify the types of measurements or sources for data collection that could be used to gather evidence that could support or dispute the rumours and perceptions.

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