

The Spectacular Development of Human Resources Management: From Descriptive to Predictive in Modern Organizations

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Abstract: The topic of HRM at the level of predictive in modern organizations is very important and interesting in contemporary researches and practices, especially in Modern Organizations in developed countries. Currently, HRM has exceeded the descriptive traditional stage as (management of personnel or management of workers or descriptive HRM) towards the predictive stage based on Metrics and Analytics, which is why it attracts the attention of concerned academics and practitioners. This research deals with the topic by using HRM at the level of Analytics and Metrics in modern organizations through reviewing (possibilities, application, and successes). It shows the Analytics and Metrics as an effective administrative tools to develop strategies and executive plans, taking into consideration the overall work of the organizational system to achieve effective performance regarding the great importance of using predictive Models in all the management levels of organization as a whole and HRM in particular. It presents how to design and formulate HR Analytics and Metrics, their models in modern organizations, the levels of application at work, and the benefits achieved in organizations that live in the context of globalization. Also, this research shows the options offered by HR Analytics and Metrics to contemporary organizations in order to follow the correct approaches in modern management. The methodology followed in this research is to review several studies in the field of predictive HRM, and analysis data's and the results achieved in developed and emerging countries to clarify the relationship between high performance and HR Analytics or Metrics in modern organizations. Finally, this research presents a practical model for HR analytics and Metrics in order to be used by modern and efficient organizations.

Key words: HR analytics; metrics; modern organizations; organizational performance

JEL code: M12

1. Introduction

The numeric Globalization with its different aspects such as (economic, political, cultural, informative, technological, administrative, organizational, and other) has entered in all of world's states and institutions. Its effects are manifested on every family and every individual in those families, and that creates different responses between acceptance, objection, and indifference by societies, governments, organizations, and individuals. It seems that this phenomenon has enforced itself, and everybody has to deal with it.

The methods of confronting or keeping abreast of numeric globalization has created several crisis which is

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increasing or decreasing according to the tools of states and organizations in order to adapt with it. For many, they have suffered from big crises because they hadn't considered its consequences, and many have been slightly affected by crises. In return, some states and organizations has benefitted a lot from the spread of numeric globalization because they have prepared themselves to keep abreast of its ongoing developments, and have had the appropriate methods and tools in order to compete and succeed.

Here, some organizations and its leaders, administration experts or academicians raise the burning question: how to keep abreast of the ongoing developments of numeric in modern organizations through having methods and applied work tools as HR Predictive (Analytics or Metrics)?

The methodology followed in this research is to present a theoretical part that review many studies in the field of management and the elements of studied topic, and shows a practical part which analyzes the achieved results in modern organizations to clarify the relationship between high performance and HR predictive in the management organizations, and at the end to propose an innovative practical Model.

This research seeks to participate in answering the same question through reviewing the mechanism of using HR predictive (Analytics or Metrics) in modern organizations management in order to make it easier to be informed about the numeric globalization phenomena, and to apply innovative Models to avoid crises that might impede its development and work.

2. Literature Review

The HR Analytics represents the top stage of HRM evolution which includes all the elements related to HR. It began to expanding in the modern firms and organizations few years ago, especially in USA, Japan, Canada, North Europe, west Europe, but in the emerging and sub-developing countries this approach stayed far of this stage (Meri M. M., 2016).

Table 1 The Five Main Stages of HRM

Period	Time period	Levels/Stages	Activities
3	2012-.....	5-HR Analytics	Implementation of the 4 previous levels,+: (providing future, looking insights on the business, predicting Data's, builds analytic models at the lowest levels of the business — at the individual HR level, looks for predictable behaviours, propensities, Data's business rules, finding quantifying patterns in the data using complex mathematical models, predict future outcomes). Director: Specialist in HR Analytics.
2	2005-2012	4-HR Metrics	Implementation of the 3 previous levels,+: (Recruiting metrics, Retention metrics, Training and Development metrics, Staffing metrics, Leadership Metrics, Talent Management Metrics, and HR Metrics Pro). Director: Specialist in HR Metrics.
1	1985-2005	3-HRM	Implementation of the 2 previous levels, +: (Strategic management, learned and flexible organization, participative management, leadership, HR Auditing, competencies management). - Considering HR as a fortune and renewable resources. - Director: specialist in HRM.
	1970-1985	2-Personnel Management	Implementation of the 1 previous level, +: (Recruitment and Selection, training and development, reward and compensation, performance evaluation, Career management and planning). - Director: specialist in general management.
	1970-1900	1-Workers Affairs	Implementation of the workers affairs: (employment, wages, upgrades, medical, pension). - Director of the Department of workers affairs specialist in Law or any others specialties?

2.1 HR Metrics Is an Effective Tools of Management

HR Metrics is appeared in scientific and practical works more than 10 years ago, while that HR Analytics starts 4 years before. Currently, scholars and practitioners make great efforts for spreading these approaches in developed countries and companies. But, it is not easy to move from HRM practices as traditional (descriptive) way to predictive way (HR Metrics/HR Analytics), because it needs a change in organizational culture and style of management in parallel of implementing this approach.

In order to understand the HR Metrics and Analytics as an administrative tool for increasing the performance of organizations, we must review its development as a technique and tool to enhance and improve performance in organizations according to the following:

- HRM is considered in generally as an important part of the organization management. It affects the organization performance and starts to achieve the competition advantage as it represents the biggest existing HR management.
- Therefore, effective measure enables the higher administration to gather effective information about HR which helps in decision-making process, and develops organizational strategy as a whole.

In the beginning, HR Metrics like other measurements should have strong connections to the strategies of the company, this will help ensure that the evaluation of HR really matters to the organization (Sullivan John, 2004).

After that, The Metrics represent a collection of techniques and work tools that can be used as a program to measure HR where HRM can put work decisions that depend on facts and numbers rather than expectations and feelings. HR Metrics/Analytics use these numbers in dealing with the fields and the demands of authorities in organization.

First, HR Metrics are often confused with measures. We find that it is best to refer to “measures” as the way in which we hope to quantify a particular concept, such as employee engagement or talent loss. It requires a clear operational definition, a method of calculating a quantitative number, and some related information (baseline, targets) that help frame the number. In contrast, we prefer to use metric to refer to the actual reading on the measure at a given time.

Second, a measure is only a representation of reality. That is, a measure is a way of capturing a concept. In an organization, what is leadership? If you have the patience of Job, you will find hundreds of definitions of leadership, most measure different aspects of what we broadly think about as leadership. Also, employee engagement is a concept that has been shown to be highly important in driving employee retention, productivity, and other business outcomes. There are many different measures of engagement in the literature and far more being used in practice every day. Some have been validated, while others only look or feel like they are measuring engagement.

So, it is important to keep in mind that as we discuss HR Metrics or measures, they are really surrogates for actual concepts that have been identified as important in our organizations or in our daily lives (Schiemann William A., 2007).

HR Metrics are a key component of the Service Level Agreement (SLA). They must be objective, measurable and relevant to the organization. Examples of standard HR Metrics include: Absence rate, cost per hire, health care costs per employee, HR expense factor, turnover costs, training days, training costs, success rates of recruiting sources, staffing costs, and process times for staffing and classification, etc... (McConnell Tim, 2010).

HR Metrics provide quantitative measurements for department activities as well as productivity and employee-related issues throughout the workforce. Companies make the best use of HR Metrics to determine the

amount of funding to allocate for HR functions, employee compensation and benefits. HR Metrics are also useful in justifying reasons for HR participation in executive level strategic decision making and the return on investment for HR activities (Mayhew Ruth).

HR manages people, including hiring, onboarding, performance, firing, off boarding, benefits, development and compensation. But who manages HR? Executive oversight of HR is a key to cost management, productivity, business development and competitiveness. Regular reporting of HR metrics is a good tool for managing any Human Resources department.

Now, there are 70 HR Metrics which are illustrative, any organization should be closely aligned with its industry, business and strategy concerning these HR Metrics (Mar. Anna, 2016).

By applying the mechanisms of system work on the interactive relation between: (secondary systems forming the organization, Metrics of these systems and indicators of BSC), performance management in the organization can take the following figure: (Martin Michaela & Sauvageon Claude, 2009).

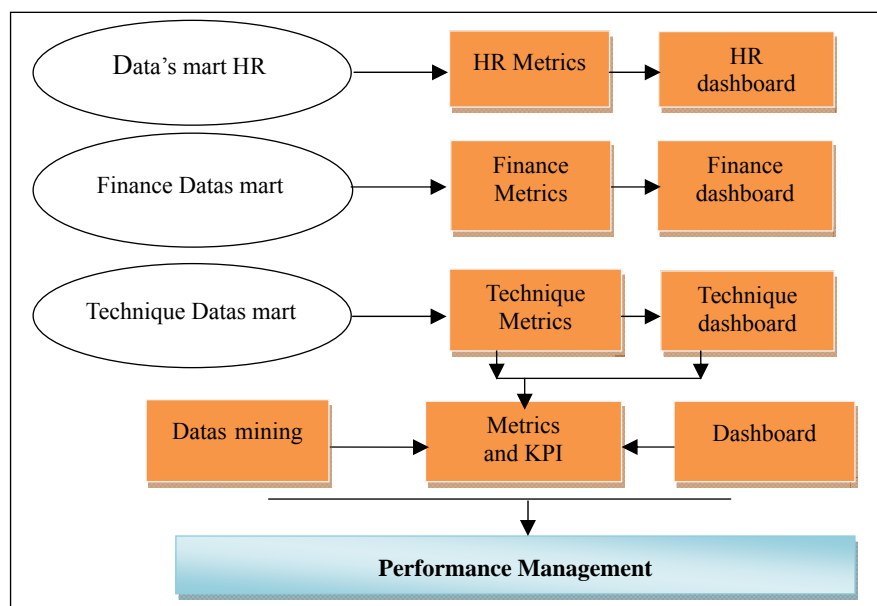


Figure 1 HR Metrics and Performance Management

According to this Model, overall performance management represents one of the components of developing organizations since it guarantees preparing and applying its strategies and executive plans to achieve the desired objectives. The leadership system puts the operation activity in the strategic perspective, and it clarifies the extent of achieving satisfaction among customers and beneficiaries. So, Metrics of secondary systems in the administrative operation system and BSC are considered as the basis of methodic and successful work of modern organizations.

2.2 HR Analytics Are Spectacular Approach for Business and People

HR Analytics are an area in the field of analytics that refers to applying analytic processes to the HR department of an organization in the hope of improving HR performance and therefore getting a better return on investment. HR analytics does not just deal with gathering Data on HR efficiency, but it aims to provide insight into each process by gathering data and then using it to make relevant decisions about how to improve these processes (Janssen Cory).

HR Analytics correlate business data and people data which can help establish important connections later on, the key aspect of HR analytics is to conclusively show the impact, the HR department has on the organization as a whole. Establishing a cause-and-effect relationship between what HR does and business outcomes - and then creating strategies based on that information (Bersin J., 2012).

To understand the concept and the meaning of the HR Analytics, it is preferable to refer to the Pyramid created by (Inostix Consulting Company) which explains the concept of HRA for using data's and making intelligent decisions. Sure, there are many HR Analytics Models in the market, but the approach of (iNostix) has a different perspective because it focused on the HR Data's, using more predictive HR Analytics with its four levels of maturity in this Pyramid (Smeyers L., 2014).

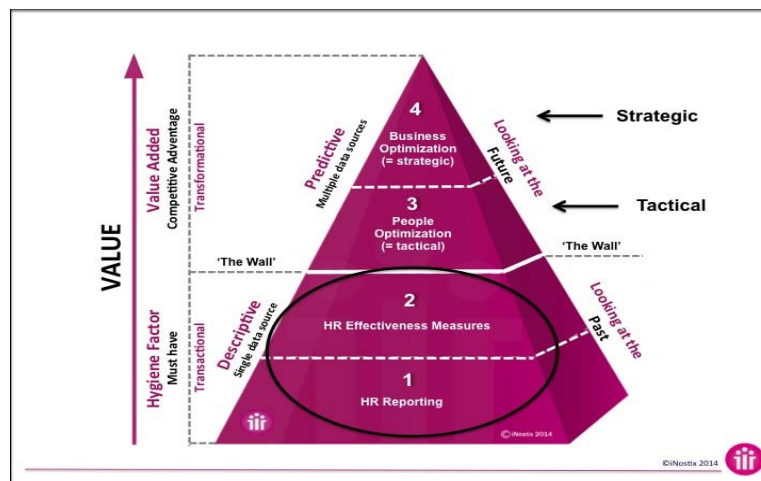


Figure 2 HR Analytics Value Pyramid

1/Level. HR Operational reporting: developing reports and dashboards which show you “where we are now”.

2/Level. HR Effectiveness Measures: developing detailed reports which let you drill, filter, and analyze “where we are” in great details: (i.e., analyzing data by customer, by individual employee, by consumer, by region, etc.)

3/Level. HR/People Optimization–tactical: using the data we have to correlate measures against each other, so we can see what relationships hold true. I could guess that this is true based on our own data, but with a little statistical correlation I can prove it.

4/Level. Business/HR Optimization–Strategic: using the data and statistics from levels 1, 2, 3 to create predictive models. Predict how many of our clients will purchase/download research on global leadership development in emerging economies based on the data.

2.3 Moving from HRM (Descriptive) to Metrics/HR Analytics (Predictive)

Some organizations have very impressive HR implementations with great dashboards and reporting capabilities. However, almost all of them struggle to understand how predictive HR analytics could augment their existing HR capabilities. This paragraph clarifies the main differences between HR (descriptive analytics) in comparison to (predictive HR Analytics) and highlights their components (Schmarzo B. & Smeyers L., 2014).

The easiest way to understand these differences is to look at the answers they can generate. For example, HR Descriptive allows you to answer questions about the demographics, characteristics or costs of your employees and

answers questions about the performance of your employees across a number of different dimensions.

While, HR Predictive/Analytics allow organizations to go beyond the answers generated by HR by providing more predictive answers and recommendations to many of the same questions.

Use HR descriptive to gain insights about employees, then use Predictive HR Analytics to build predictive models and actionable recommendations at the individual employee's level as displayed in Table 2.

Table 2 Moving from Retrospective to Forward Looking

HR (Descriptive)	HR Predictive
- Who are our high performing call center agents? - How many training hours did we invest in our call center agents? - What selection scores do our best call center agents have?	- Which call center agents are most likely to become high performers? - Which training programs are most likely to improve, time to performance, or average handling time of call center agents? - Which hiring criteria are most likely to lead to strong retention?
- How many sales representatives did leave us last year? - What is the total cost of the sales coaching program from last year?	- Which sales reps are most likely to leave? - Which coaching programs are most likely to rescue sales reps attrition?
- What is the total machine downtime due to work accidents in our manufacturing plant? - Which machine operators got certified in all security training programs? What are the engagement scores of the machine operators?	- Which security programs are most likely to rescue work accidents? - Which impact does employee engagement have on total accident cost?

We still need HR (Descriptive) to know what really happened in the past, but we also need HR predictive (analytics) to optimize our resources as we look to make decisions and take actions for the future, however, the biggest challenge for HR professionals is to build the capability and expertise to move from a descriptive, retrospective approach (as in most HR departments) to a future-looking, (predictable) approach.

LUC SMEYERS from (INOSTIX Consulting) developed a shortlist of Talent Metrics (looking at the past) and turned them into a corresponding list of Predictive HR Analytics (looking at the future) as below (Meri Mohamed Meri, 2015).

Table 3 Moving from HR Metrics to HR Analytics

HR Metrics	HR Analytics
Total number of job moves and promotions of all employees versus members of talent groups	- Which talent characteristics are drivers for promotion/job moves? - Which talent clusters are more likely to get promoted/moved?
Average performance scores of all employees versus members of talent groups	- Are performance scores drivers for talent identification? Which performance clusters are more likely to become talent? Which talent characteristics' are drivers for talent identification? - Are high /low performance scores increasing/improving talent retention risks?
Total training investment of all employees versus members of talent groups (hours and cost)	- Is training investment a driver for talent identification? - Which training investment clusters are more likely to impact talent identification? - Can high/low training investment volume become a risk for talent retention?
Number of members in talent groups part of succession planning	- Is talent identification a driver for future succession? - Is membership, of talent groups reducing future succession risks?
Number of high performers in succession planning	- Is high performance a driver for succession? - Which performance/talent clusters are more likely to impact /improve succession planning?

3. The Methodology for Applying HR Metrics/Analytics

The research is included in the framework of the documentary analytic method which based on the study of

some previous scientific works which dealt with the subject whether on the methodic/theoretical level or on the practical level. The research views extracts of some studies and researches in many countries that touch upon the mechanism of using HR metrics and indicators in its relation with informatics applications from Anglo-Saxon perspective or from Francophone perspective. The research suggests an applied model for using HR metrics under using integral/complete sustainable administrative in organizations interactive with the modern fundamentals of HRM.

Steve Woolwine proposes below (5) phases of a typical Analytics path: (Metrics, Analytics, predictive analytics and big data) are all phrases that are used on a daily basis regarding measurement in HR (Woolwine Steve, 2013).

Table 4 The Five Phases of the HRA Application Methodology

Phases	Application
(5) Impact	This is where the strategic HR professionals really want to inspire the company to be. At the impact phase, change is being created as a result of a predictive mindset, achieved, and the culture has shifted from being performance based to analytics driven.
(4) Value Creation	At this phase, decisions are being made based on analytics, and genuine insights are created. Predictive modeling begins here with an eye on future value creation from HR investments.
(3) Effectiveness	At this phase, HR has more sophisticated technology and leadership is widely held accountable for results. Actions are beginning to take place because of the data. Analytics are now being discussed.
(2) Measurement	In this phase, metrics are better defined. Reporting is now in the form of a dashboard/scorecard, and leadership may have some accountability metrics.
(1) Justification	In this phase, HR metrics are tracked and have limited reporting. No actions are taken at this stage and data is still quite dispersed.

After achieving the 5 Phases, most of companies are in their Analytics path. There are pockets of Analytics excellence from companies like (Google, Sears, Well Fargo and others), but many HR Departments seem to be stuck in the early phases of the path.

4. Finding

Each approach in business can be analyzed separately to show the return-on-investment and drive action and a sense of urgency for the results across the organization. HR Analytics combine the key business drivers from the process Analytics approach into an integrated business-focused strategic plan. We will illustrate both types of HR Metrics /Analytics with the following case studies.

-Theoretical Cases Studies:

4.1 Case of Comprehensive, Practical Road Map to Conducting HR Analytics

Mondore. Scott & All, have refined a practical roadmap over many years that boils down to a straightforward six-step process that drives HR strategy by connecting what is done in HR directly to business outcomes. HR Analytics moves beyond conducting analysis and creates an environment of executive buy-in, cross-functional interaction, targeted initiative-building and a discipline of measurement and re-focusing (Mondore Scott, Douthitt Shane, & Carson Marisa, 2011).

4.2 Case of HR Talent Analytics Orientation

Akshay. Raje creates a Model for Business analytics (BA) refers to the skills, technologies, applications and practices for continuous iterative exploration and investigation of past business performance to gain insight and drive business planning (Akshay Raje, 2013).

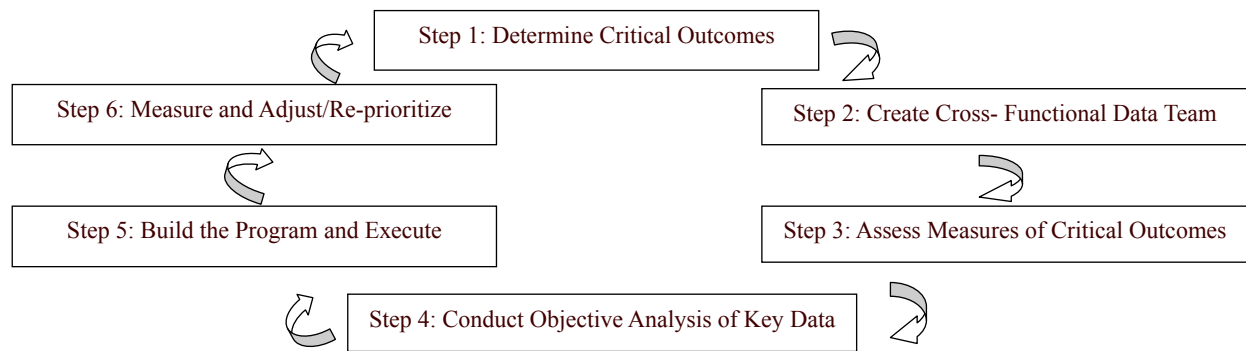


Figure 3 Practical Roadmap of HR Analytics

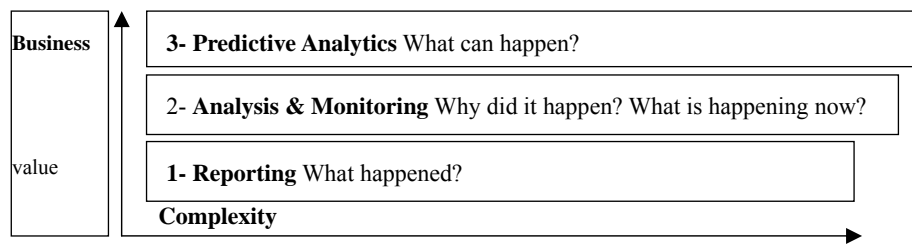


Figure 4 Stages of Analytics

4.3 Case of SAP-Success Factors: Workforce Analytics

In most organizations, if HR leaders need workforce analytics reports or calculations, they have to wait behind the Finance, Operations, and Sales departments. Strategic dissonance follows: (Senior business leaders are demanding data, but HR departments lack the essential tools and resources to provide timely and accurate answers).

Now, HR and senior business leaders can take advantage of solutions that provide the strategic and tactical insights derived from HR analytics without having to become data or IT specialists. Success Factors Workforce Analytics presents the following best practices comprise the foundation for the delivery of insightful, actionable information that executive leadership demands; HR departments can accelerate and influence impactful business decision making with confidence.

(1) **Rely on a single source of truth.** Senior business executives rely on HR departments to provide accurate, sophisticated, and insightful talent information in a timely manner. With workforce analytics, HR departments deliver detailed and timely talent insights.

(2) **Challenge assumptions.** The most familiar way to hire, retain, and develop employees might not be what is best for your company. Use workforce analytics to challenge and change the internal biases for making talent decisions.

(3) **Take on business challenges.** By leveraging a solution such as Success Factors Workforce Analytics, you can effectively pinpoint resource issues and gaps and deliver insights on how to solve those challenges.

(4) **Leverage standard industry benchmarks to identify areas of improvement.** Use a cloud based solution built with industry Metrics to measure the effectiveness and progression of your talent strategy.

(5) **Be prepared. HR departments are now required to deliver actionable, meaningful insight in a variety of fast-moving business climates.** Be aware of the following situations: (Merger, acquisition, or divestiture activity, Globalization and business-model transformations, New business leadership changes, Expansion or significant growth, New product or service launches, Efforts to improve customer satisfaction,

Changes in the regulatory environment).

(6) **Link information to business outcomes.** HR departments need to understand talent analytics and dynamics and convey the results to senior business leaders in effective and impactful ways. By evaluating and comparing the insights from your HR and talent management systems against finance, sales, and operations data, HR departments can help link talent decisions to business outcomes (SAP-Success Factors, 2013).

-Practical Cases Studies:

4.4 Case of VISIER, VANCOUVER, Survey Report (Analytics)

There are very real business drivers moving us toward HR Analytics and planning.

In a recent survey report , (2014 Survey Report: The State of Workforce Analytics and Planning where over 300 U.S.-based employers answered questions about their current workforce analytics and planning practices, investments, future plans. The program is designed to showcase how industry leaders are leveraging advanced reporting, predictive analytics and workforce planning to improve talent-related decisions and continue to close the gap between HR and the business. Respondents identified the top four drivers as (Visier, Vancouver, 2014):

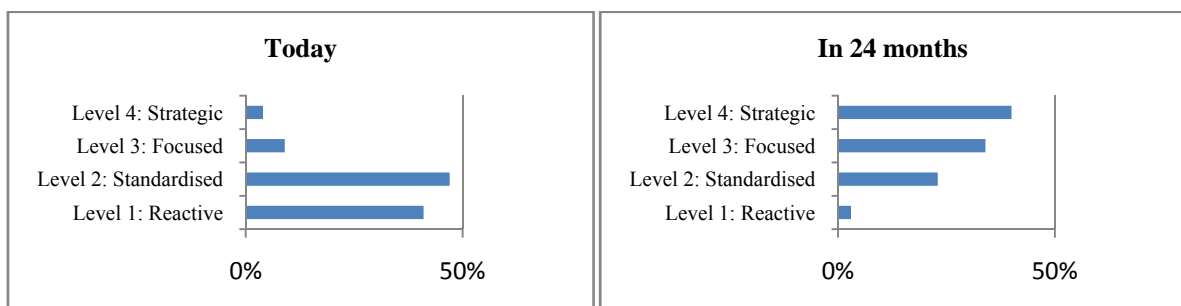
- Workforce Analytics

- Spreadsheets (48%) and HRIS reports (25%) are the most commonly used tools for workforce metrics and analytics — with low satisfaction rates. Only 5% are satisfied with spreadsheets, and just 15% with HRIS reports.
- Users with dedicated workforce analytics solutions are the most satisfied.
- While the majority rank themselves low today in workforce analytics maturity, 91% plan to increase their maturity within the next 24 months.
- Although most plan to increase their investment in workforce analytics, there is a disconnect between budget and aspirations: 85% of those who plan to maintain their investment, aspire to increase their analytics maturity anyway.
- Data, process, and definitions are the most common technical barriers to workforce analytics.

Want to improve talent management	32%
Want to find cost savings via workforce optimization	25%
Want to better support business leader demands for insights	21%
Are focused on improving key workforce initiatives	19%
Want to facilitate mergers and acquisitions	3%

- Workforce Planning

- 39% do not regularly do workforce planning. For those that do, annual planning is most common.
- 74% have a budget for workforce planning, which is most often owned by HR.
- Data and lack of automation/repeatability of process are the most common technical barriers to planning.



4.5 Case of Bersin by Deloitte

The groundwork required understanding the organization's data and systems, resolve data quality issues, and build credibility with stakeholders all take time. Then there are the issues of finding or developing the right skills sets, integrating data, and building effective tools for line managers.

The research of Bersin by Deloitte What Works® research members indicates certain areas that can accelerate an organization's capabilities. HR leaders can use these findings to assess where they are today on the Bersin by Deloitte) Talent Analytics Maturity Model continuum , and examine the key levels for advancing their efforts.

It found that a staggering 86% of the organizations surveyed are focused primarily on reporting. Many of these organizations produce Metrics for compliance purposes and operate in a reactive mode, fielding ad-hoc requests for data. Others may take a proactive approach to reporting, using benchmarks and trends to highlight what is working (and what is not), but the focus is still on reports.

Just, 10% of organizations in the study have taken the next step toward advanced Analytics — helping business leaders solve their talent challenges through statistical analysis. A mere 4% are using predictive Analytics to forecast future talent outcomes (Bersin, by Deloitte, 2013).

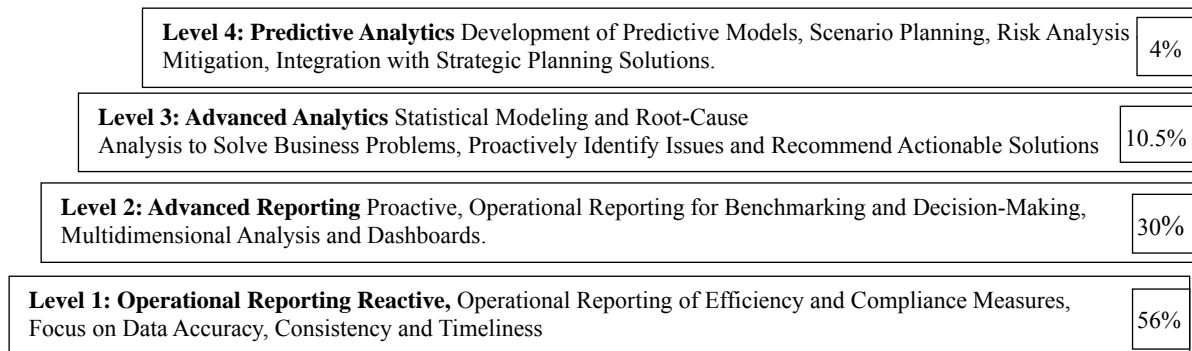


Figure 5 Talent Analytics Maturity Model

Source: Bersin by Deloitte, 2013.

4.6 Case of Forrester Wave™: Big Data Predictive Analytics Solutions, Q2 2015

Forrester is a global research and advisory firm, inspires leaders, informs better decisions, and helps the world's top companies turn the complexity of change into business advantage. Forrester published a (Report for Application Development & Delivery Professionals), about how to implement the Predictive analytics solution to meet the needs of all enterprises if they choose the right big data. In Forrester's 45-criteria evaluation, it identified 13 big data predictive analytics solutions providers (Alpine Data Labs, Apteryx, Angoss Software, Dell, FICO, IBM, KNIME.com, Microsoft, Oracle, Predixion Software, RapidMiner, SAP, and SAS), and researched, analyzed, and scored their current market offerings. This report details the findings about how well each vendor fulfills the criteria and where they stand in relation to each other to help application development and delivery (AD&D) professionals select the right solution to grace their enterprise with the power to predict. Forrester presents six methodological steps.

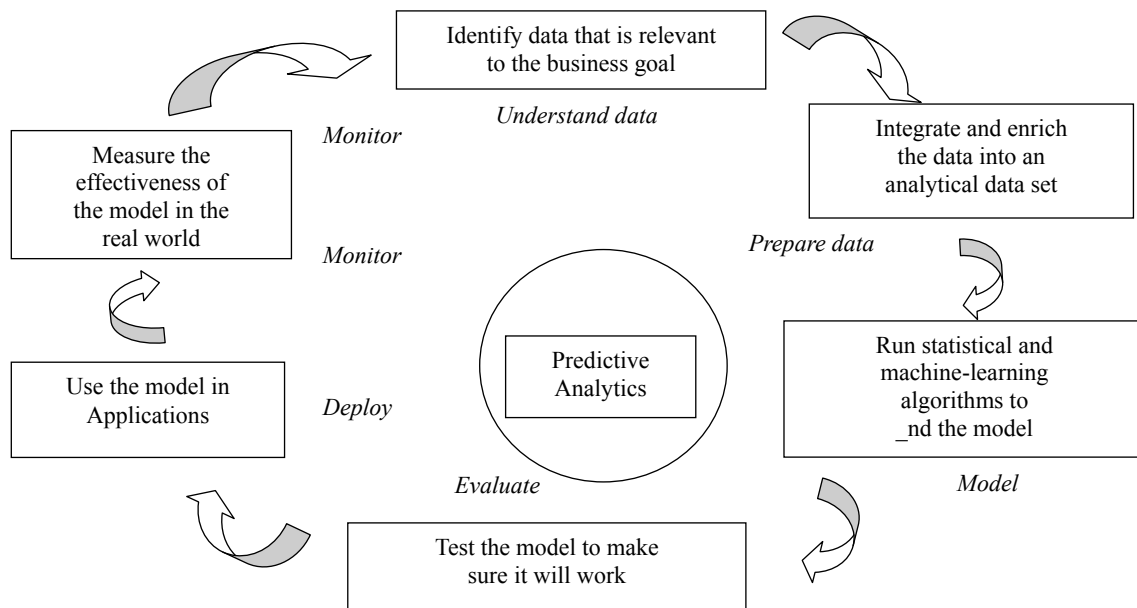


Figure 6 The Six Steps of Predictive Analytics

Source: Forrester Research, Inc. Unauthorized reproduction or distribution prohibited.
Forrester show the ranking of companies Implemented HR Analytics at the international level.

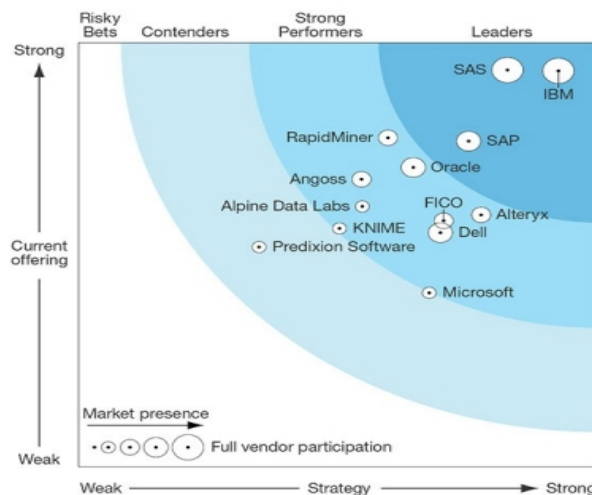


Figure 7 The Ranking of Companies in the Implementation of HR Analytics

Gualtieri Mike et al. (2015) for discussion, and after briefly presenting these 6 Cases, I divide them into two major categories such as:

(1) Cases of 1-3 (**Mondore. Scott and All, Akshay. Raje, SAP-SUCCESSFACTORS**) are methodological and theoretical cases, because it presents the methodological application (by steps) of HR Metrics/Analytics in organizations .

(2) Cases of 4-6 (**VISIER/Survey Report) Analytics, Bersin by Deloitte Forrester Wave™** are practical and empirical cases, because it shows the quantitative results of the companies studied in the fields of business .

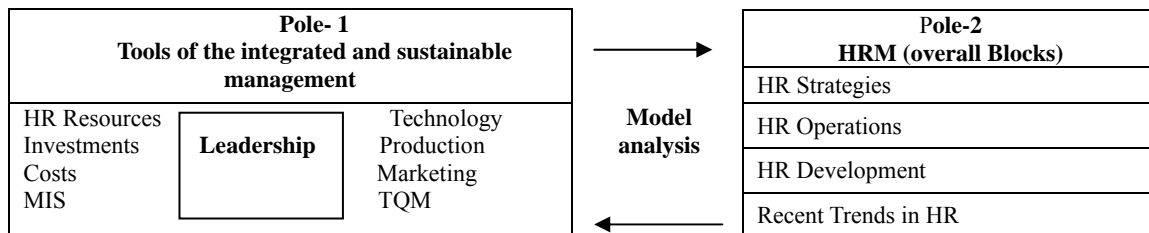
It means and ensuring that HR Metrics/Analytics is an innovative and spectacular approach, combine (theory and practice) for the development of business and the people in the modern organization.

5. Conclusion

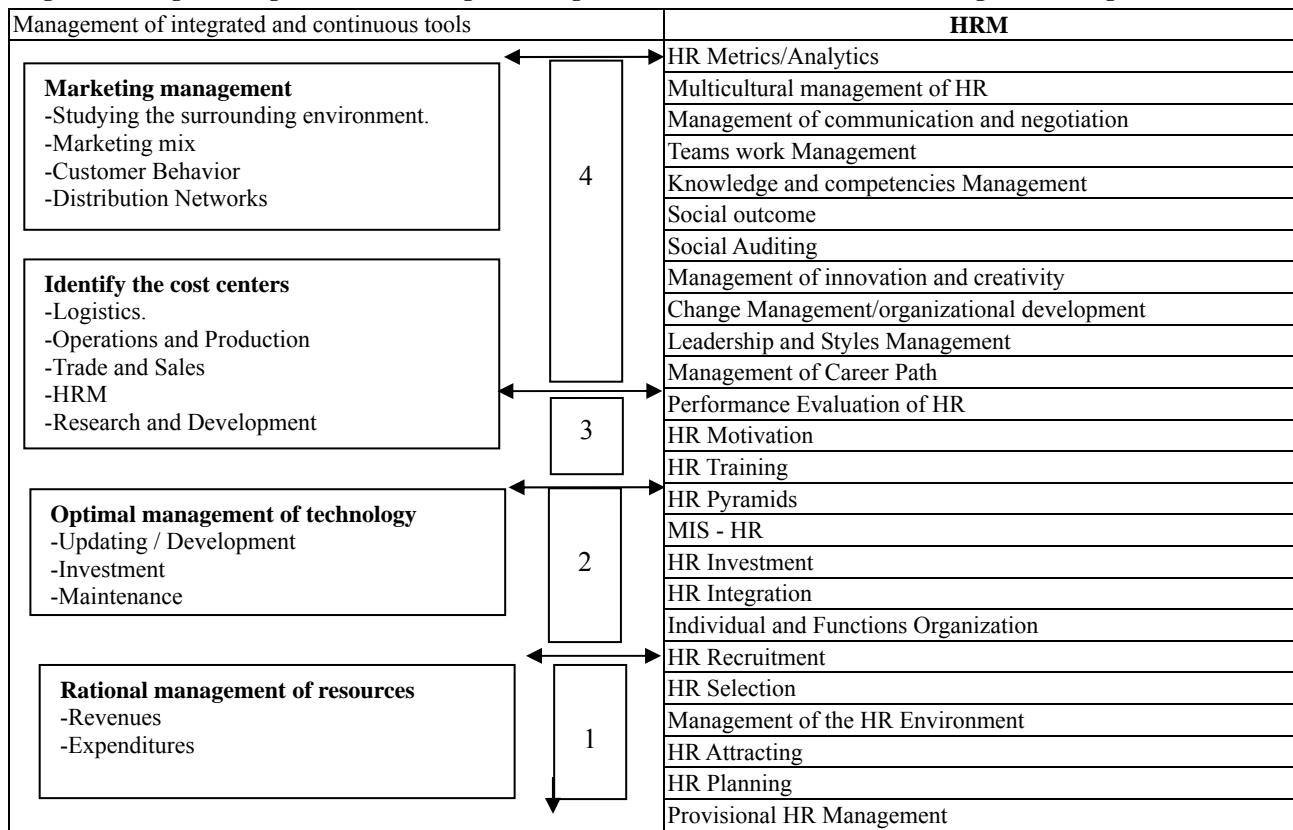
5.1 Practical Model Proposed

Before presenting the conclusion, and for benefiting of this research at the practical field and theoretical level, I propose this model for facilitating the application of HR Metrics/Analytics in organizations. This practical model shows how to access the integral management by using advanced techniques (HR Metrics or Analytics indicators) through 3 stages, as in Figure 8.

Stages 1: building two basic poles, which are:



Stage 2: building the Integrated HRM through the integration of HR with sustainable and integrated management.



Stage 3: Building of HR Metrics Analytics

Metrics/Analytics indicators related to the block of HR strategies	Metrics/Analytics indicators related to the block of HR operations
Metrics/Analytics indicators related to the block of HR development	Metrics/Analytics indicators related to the block of recent trends in HRM

Figure 8 Access the Integral Management by Using Advanced Techniques through 3 Stages

- **Model analysis:** this model consists of the interaction and the integration of HRM with the integrated and sustainable management tools for building Metrics/Analytics and leadership indicators.

This approach is an advanced contribution to the success of the application of Metrics/Analytics, and sustainable and integrated management in organizations.

5.2 Conclusion

For conclusion, I conclude from the aforementioned to propose a practical model for facilitating the application of HR Metrics/Analytics in organizations.

- Traditional HRM is not relevant to lead modern organization because it lacks Metrics/Analytics Tools.
- HR Metrics are an effective management which provides measurement Tools.
- HR Analytics are recently a spectacular approach for Business and people with the Big datas and indicators.
- It is very important now to move from HRM (descriptive) to Metrics/HR Analytics (Predictive).
- HR Metrics/Analytics are methodological and theoretical approaches for improving the performance in organizations.
- HR Metrics/Analytics show quantitative results of the companies in the fields of business.
- The practical model consists of the interaction and the integration of HRM with the integrated and sustainable management tools for building Metrics/Analytics and leadership indicators.
- This approach is an advanced contribution to the success of the application of Metrics/Analytics, and sustainable and integrated management in organizations.

References

- Akshay R. (2013). "HR analytics-HR/talent analytics orientation given as a guest lecture at Management Institute for Leadership", Business, Technology, Published on Aug 21, 2013, available online at: <http://www.linkedin.com/in/akshayraje>.
- Bersin J. (2012). Available online at: <http://www.bersin.com>.
- Bersin J. (2013). "High-impact talent analytics — Building a world-class HR measurement and analytics function", *Bersin by Deloitte*, WhatWorks® research members, available online at: <http://www.bersin.com>.
- Dasse Frederic (2010). "Managing consultant", IBM GBS Business consulting services, practice strategy.
- Gualtieri Mike, Curran Rowan, Kisker Holger and Christakis Sophia (2015). "The Forrester Wave™: Big data predictive analytics solutions", Q2 2015, Forrester Research, Inc., 60 Acorn Park Drive, Cambridge, MA 02140 USA, Predict and Prosper with One of These 13 Solutions.
- Guerrero Sylvie (2004). "Les outils des RH", Dunod, Paris.
- Haridas Meghna. "The HR scorecard", HR FOLKS International, available online at: <http://www.HRFolks>.
- iNostix by Deloitte (2015). "HR analytics insights — How HR analytics can help you predict work accidents — Case study", 22.07.2015.
- Available online at: <http://www.inostix.com/blog/en>.
- Janssen Cory, company of Investopedia.com, <http://wn.com/investopedia>.
- Client Avis (). "lier stratégie et gestion des ressources humaines", available online at: <http://www.amazon.com>, MARTIN. Michaela, SAUVAGEOT.
- Claude (2009). "Construire un tableau de bord par l enseignement supérieur—un guide pratique", UNESCO, Institut de planification et de l éducation, Paris.
- Mar Anna (2016). "70 HR Metrics with Examples", available online at: <http://business.simplicable.com/business/new>.
- Mayhew Ruth, "Examples of HR metrics", Demand Media, Houston Chronicle, available online at: <http://smallbusiness.chron.com/examples-hr-metrics-10873.html>.
- McConnell Tim (2010). "The introduction of HR service level agreements — *HR and IT*", McConnell HR Consulting, Ottawa.
- Meri Mohamed Meri (2015). "The new perspective of HRM: From the pyramid of motivation to HR analytics value pyramid — A comparative application in developed and emerging countries", *International Journal of Art and Sciences (IJAS)*, *International Journal of Multidisciplinary Thought*, Vol. 5, No. 4.

- “The decisive role of strategic human resource management in the success of entrepreneurship and innovation in modern enterprises: A practical model”, *ENTRE 2016 — 8th International Conference*, 7-8.4.2016, University of Cracow, Poland, *International Journal Zeszyty Naukowe Politechniki Poznańskiej*, No. 69, Organizacja i Zarządzanie, 2016.
- Mondore Scott, Douthitt Shane and Carson Marisa (2011). “Maximizing the impact and effectiveness of HR analytics to drive business outcomes”, *Strategic Management Decisions*, People & Strategy, Vol. 34, No. 2.
- Sap-Success Factors (2013). “Six critical HR best practices to gain insights with workforce analytics”, a white paper, SAP Company.
- Schiemann. William A. (2007). “HR Metrics-Myths, best practices, and practical tips”, Metrus Group White Paper, available online at: <http://www.metrus.com>.
- Woolwine Steve (2013). *Chief of Staff Talent and Human Capital Services*, Sears Holding Group.
- Sullivan John (2004). “Wath are the best HR metrics for a large organization?”, July 26, Tweet.
- Visier Vancouver (2014). “Survey report: Analytics”, available online at: <http://bit.ly/1GGzT7U>.
- Walker Garrett, MacDonald J. R. (2001). “Designing and implementing an HR scorecard”, *Human Resource Management*, Winter 2001, Vol. 40, No. 4, pp. 365-377.