

AMERICAN UNIVERSITY OF BEIRUT

HUMAN RESOURCES ANALYTICS ADOPTION
FACTORS IN LEBANON

by
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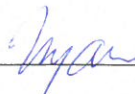
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AN ABSTRACT OF THE PROJECT

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HR Analytics has gained increased attention in the past few years and companies are using it as a competitive advantage. Despite its numerous benefits and advantages to companies, Lebanon is witnessing a scarce adoption and utilization of this technology. In this study we aim at examining the status of HR Analytics from an HR point of view while also examining the different factors which are hindering its adoption. Adopting a qualitative interpretive approach and based on the narratives of 20 HR professional currently working in Lebanon, this study aims to understand the different factors hindering adoption of HR analytics. Our findings show that several technological, social, cultural and time factors play a role in the minimal adoption and utilization of Analytics. We further discuss our finding by approaching the study from the adoption and diffusion theory of Everett Rogers. Everett Rogers theory brings additional understanding of the different factors that play an important role in the adoption of any new technology.

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CHAPTER I

INTRODUCTION

Steve Jobs once said: “Innovation distinguishes between a leader and a follower” (CNN, 2016); and in the technological world, Steve Jobs was a leader. If we apply this saying to the world of human resources today, we can’t but wonder where HR professionals stand. Are they leaders of their own or do they follow others? Do they stand on the benches and watch, or do they innovate, advance with their innovations and become strong action takers and decision makers, hence, leaders? If they choose to become leaders, they will have to become active members of the organization in which they stand. They will have to contribute to the strategic development of their organization by exploiting business opportunities with minimum risks.

After applying analytics to different departments such as accounting, strategic planning, research and development, and even sales, HR was sure to follow. It was up to HR now to start relying on analysis. Human Resources has always been seen as a sociological science with great regard to the human factor and minimal concern to metrics and analysis with various research discussing intuition-based decision-making done by HR professionals instead of relying on data. That is, although researchers have established overwhelming support for the use of standardized decision aids, professionals in the field still show a distinct preference for non-standardized, intuition-based hiring (Highhouse & Kostek, 2013; van der Zee, Bakker, & Bakker, 2002). Such resistance to standardized selection practices jeopardizes the effectiveness of hiring

decisions and violates the principle of evidence-based practice in HRM (Lawler, 2007; Rousseau & Barends, 2011).

But not anymore. Introducing Analytics to HR changed this ideology and is starting to shift human resources management towards becoming a decision maker and strategy changer. HR analytics is currently relatively unknown in business organizations. Among many business makers, there is still an element of relying on gut feeling rather than using a statistical and analytical approach (HRMID, 2017).

Analytics has been described as a ‘must have’ capability for the HR profession, a tool for creating value from people and a pathway to broadening the strategic influence of the HR function (CIPD, 2013). HR analytics is taking advantage of the vast amount of data found in the human resources department by analyzing it and turning it into useful information that accounts to the strategical decisions of the organization. HR professionals should gain insight from the data found within their department and their employees and extract valuable information out of it, information that can change the course of the organization to the better. This can only be achieved through analytics. As it is widely accepted that ‘human factor’ is the key driver of business, quantification of anything and everything related to people and process of the organization, which ultimately will affect the business performance has become one of the most prominent intervention points of big-data based analytics (Bose et al., 2018). Employee and workforce insights are the greatest competitive advantage sought but not fully realized by organizations dealing with the disruption and uncertainty driving dramatic changes in today’s workplace. Embedded in this is the growing expectation of the human

resource function to understand how workforce analytics informs the business and fuels success (DiClaudio, 2019).

HR Analytics can be accomplished using several factors: Big Data from the most valuable resource of a company, its people, the HRIS, the information systems which collects this Data, and the vector which turns this data into applicable actions that contribute to the advancement of the organization on the revenue level; this vector is the Analysis. Scattered blog posts provide hints of what might be possible with big data analysis using these types of data: extracting information on mood and morale from large bodies of email messages, mapping social networks and ties within organizations based on electronic records of communications, using geo-location data from mobile devices to gain a better understanding of what employees do and how they interact with one another (Haak, 2014). Analyzing this data and gaining “business insight” out of it requires vast effort and collaboration from the HR professionals and the analytics. But once that is achieved, great results will arise, and the company would be truly integrated in all its departments towards business success. In recent years, we have seen some companies as early adopters of HR analytics, they have started practicing it and have attained some valuable results. HR professional should rely on facts and figures rather than intuition. Some early adopters of HRA who have had positive results are Google, SAP, Xerox, PepsiCo, FedEx Corp., and Aetna Inc., just to name a few (Henneman, 2013; Rafter, 2013a). Connecting HR data with the strategic objectives of the business can help HR managers to demonstrate the return on investment (ROI) of HR (CIPD, 2017). For example, McDonalds was able to identify how staff demographics,

management behaviors and employee attitudes interacted to optimize restaurant performance (Sparrow et al. 2015).

Silicon Valley was the first to start adopting HR analytics with Google becoming a key player in the game and owning the first people analytics division. Other companies soon followed, and the innovation spread to worldwide leading to a new rage that everyone soon wanted to acquire and benefit from. Lebanon, small country located in the Middle East, has yet to be explored in the terms of HR analytics adoption. Lebanon is a target location for many international companies and a gate to the Arab world. It is famous for its trilingual population; Arabic, English and French languages are practiced simultaneously. The significance of these three languages has assisted in growing international businesses and working with multinationals without any hinders. Therefore, any new technology explored or used in the world reaches Lebanon directly and is easily adopted. But the status of HR analytics is still vague, and no research has been conducted on the matter.

Most Lebanese companies are SME's with an employee count below 50. Family businesses invade the market and operate according to their own policies and procedures, but this has not obstructed their aspiration towards growth and improvement. A large portion of family-run businesses operate under the founder, or the eldest family member. In Lebanon, family owned business encourages their heirs to undergo higher education in business and bring in the new technologies and theories that would help the business grow and advance. Therefore, we see a large number of family businesses over lasting the 3-generation rule and innovating beyond their limits.

HR analytics is one of those trends that we want to examine and question where it stands in Lebanese firms, whether SMEs, large businesses or even multi nationals.

In their paths toward improvement and growth, Lebanese firms should be quick into exploring HR analytics, its benefits and usage methodology. So where does HR analytics stand in firms operating in Lebanon? Why hasn't HR analytics reached its ultimate capacity? Human-capital analytics is not to be feared. It is simply a method of logical analysis that uses objective business data as a basis for reasoning, discussion, or calculation (Fitz-enz, 2009)

Today, HR analytics is thought to be the defining term for HR advancement in any setting. And any Human Resources employee in the world today is encouraged to hold some knowledge on the matter. Organizations are beginning to take note of the rapid advances in the application of new information technologies (IT) such as artificial intelligence (AI), machine learning, Internet of things (IOT), and big data. These technologies can provide opportunities to increase operational efficacy and help develop new products and markets across a wide range of industry sectors, as well as spur new threats and challenges to the current market position of firms (Lee & Joshi, 2018). The benefits of HR analytics are beginning to show in case studies done by large international companies such as Google, Coca Cola, Mc Donald's all of which have written success stories about the use of analytics in the HR department and the positive results it has had on the company as a whole. Analytics may have reached the HR department late but late is better than never.

This study aims at examining the current status of HR analytics in Lebanese firms. We will define the steps of HR analytics process from the first step of gathering

the data to the last step of decision making and acting. Defining these steps will allow us to identify the weakness points of HR analytics which can further clarify its late adoption by organizations. We also anticipate understanding the factors which are limiting HR professionals from migrating towards HR analytics or hindering its optimization. As well as attempting to understand the factors which can influence HR professionals' acceptance of HR analytics functionality and its deployment in the future. So, we aim at understanding what needs to be done for HR professional to adopt HR analytics functionality.

Most specifically, the research will answer the following questions:

Research Questions

- How do HR professionals view and define HR analytics?
- Are HR professionals using HR analytics currently in their decision making?
- At what level of optimization is HR analytics being used?
- What are the factors limiting HR analytics adoption in the past and present?
- What are the factors limiting HR analytics optimization?

CHAPTER II

LITERATURE REVIEW

A. Defining HR Analytics

In 2011, Google shared the results of it highlighting data-based findings on what a perfect manager stands. Soon thereafter, there were a series of research publications, which highlighted the benefits of using analytics in workforce management (Bose et al., 2018) HR analytics is a relatively new term that started emerging from academic literature in 2003–04, the terminology was more readily adopted towards 2010, when there was a considerable growth in academic publications that reference the term (CIPD, 2017). The definition in scholar articles and literature described HR analytics in different ways but with common key terms. Lawler et al (2004) described it to be “Process using statistical techniques linking HR practices to organizational performance”. While others described it as “An evidence-based approach for making better decisions on the people side of business and consists of an array of tools and technologies, ranging from simple reporting of HR metrics all the way up to predictive modelling” (Bassi, 2011). In their most recent literature review, Marler and Bourdeu 2017, assess the definitions of HR analytics from different works and define HR analytics as HR practice enabled by information technology that uses descriptive, visual and statistical analyses of data related to HR processes, human capital, organizational performance, and external economic benchmarks to establish business impact and enable data-driven decision-making. The word “enabled by” is very critical in the above definition, because it summarizes the process of collecting the data which has become a decisive step for HR professionals. Information Systems collect data on

everything from hours worked, to workshops and training, to sick leaves, attitude, sales, etc. some also collect data on the social interactions of the employee with other employees and customers. This data is the ground for HR analytics. “A current goal for HR Analytics is to establish it as function within the organization, to create awareness of it as a discipline and to prove it can provide measurable improvements and aid business decision making” (HRMID, 2017). Some other reasons for an increase in the adoption of analytics in the domain of HR are: (1) increased focus of organizations’ top management and board of directors to measure and quantify people-related decisions; (2) growing perception that the HR function ought to become more quantitative in nature and that HR professionals should have business acumen; and (3) a connection between analytics-based decisions and employee performance (Shrivastava et al. 2018).

1. Different Levels of HR Analytics

There are three levels of HR analytics: descriptive analytics, predictive, and prescriptive. The descriptive part of the analytics is accountable for collecting the data and identifying some common patterns and relationships between them. The predictive analytics uses the data to furthermore predict future trends that may arise. As for the prescriptive data which is the most important level, and that is rarely practiced by HR professionals, it is responsible for applying sciences to suggest business decisions for sought outcomes. “Currently HR analytics focuses on basic reporting and metrics and looks at historical insights. The aim is to increase the analytical focus and to work on predictive analysis” (HRMID, 2017).

Below we present several analytical techniques that have been used in HR Analytics:

- *“Data mining and machine learning: Data mining refers to identifying trends in large amounts of raw data, which are then converted into relevant information. Machine learning is the use of computers in analyzing data and identifying patterns. It can be understood as a type of artificial intelligence.*
- *Contextual analytics: This refers to an analysis of text to understand its meaning, characteristics, the context of historical and structural setting, etc.*
- *Predictive analytics: It uses data analysis techniques such as predictive algorithms and data mining to forecast what may happen in future, such as what-if scenarios and estimation of risk.*
- *Prescriptive analytics: It uses analytical techniques to provide solutions to organizational problems, keeping various possibilities into consideration.”*

(Shrivastava, 2018)

One example is HR analytics was used to establish a relationship between leadership quality and lower turnover levels, which resulted in higher levels of operator competence, which in turn fed through to fewer accidents, less maintenance time and higher customer satisfaction (Angrave et al., 2016). If HR analytics has this positive effect, why are companies so hesitant to its adoption? And if they do adopt it, why aren't they reaching its optimized-use level?

2. HR Analytics Utilization in Companies

In a case study done by Coca Cola Enterprises, HR Analytics proved very valuable in presenting business insights. Their work started with standard reporting, they were asked to deliver reports on basic things for example: “how many people am I supporting? Or how many people have started or left?” these reports didn't need any

analytical skills or abilities. But HR at CCE soon realized that if they didn't move from this type of transactional reporting, they will not add any value to their HR department. So, they moved to the new level of analysis and started performing reports on the performance of the company from an HR perspective. They began acquiring more data and metrics to generate higher levels of analysis and providing valuable insights. But even with the data, their system lacked advancement and second level analytics. So, they began searching for the right information system that could support this level of data analysis and reporting. But their work wasn't as easy as it seems, several barriers were faced in their quest to adopt HR Analytics. Such barriers include extracting data. Taking data out of other departments seemed very challenging, people didn't expect from HR to provide such work. Another barrier was finding the right people to recruit. People who had HR experience seemed to lack the analytical proficiency needed to perform HR Analytics related work. "CCE face HR's perennial issues of technology and the perceived lack of analytics capability. However, their approach of creating quality data sets and automated reporting processes has provided them with the foundations and opportunity to begin to develop real centers of expertise capable of providing high quality insight to the organization. It is clear CCE remains focused on continuing its HR analytical journey" (CIPD, 2018).

Google has also created a fine example of incorporating analytics in day-to-day decision-making, which has helped them gain some crucial insights into people operations. Organizations' initiatives like these can also help to bridge the gap between the existing judgement-based approach that the HR function is now based upon and the data-driven approach that it needs to adopt (Shrivastava, 2018).

3. Gaps in HR Analytics practice

Several gaps have been noticed in the practice of HR analytics, through the literature review conducted for this research, we define some of them in hopes of reducing the factors which are limiting the use of HR analytics by other HR professionals and concluding what needs to be done to expand HR analytics' use furthermore.

a. The Weakness of HR

The central gap defined in several articles and publications, is the lack of analytical thinking. The HR professionals don't have enough experience in analysis. Their knowledge is restricted to a few workshops and trainings that don't support them with the needed information to analyze the data found in their information systems and retrieved from their employees. The same problem lies on the other side with the analytics. The analytics personnel don't seem to know about human resources. HR analytics is being hampered by a lack of analytical thinking by the HR profession (Angrave et al. 2016). So, data is just being randomly compiled. HR professionals don't know what data is useful for analysis and Analytics professionals don't know what to ask the human resources. Although data is reaching extended sizes, some of this data is useless to analysis just as some of it is missing for analysis this may be interpreted as the result of the lack of analytical capability which is another gap for HR analytics. It is difficult for HR department to advance in HR analytics and the analysis process if they don't have the proper staff and if their main focus is to do more defined tasks like handling employees' payrolls. Rudy Gezik, director of workforce insights and employee value proposition at Allstate, says: "We need to supply the talent to achieve business

outcomes, not just execute the underlying HR processes” (HBO, 2017). The responsibility of management comes in here. For their part, business executives know they need to optimize the deployment of talent, but in many cases, they’re not sure how, including when it comes to leveraging HR analytics (HBO, 2017). Management and human resources must respond to the change. The days of delivering HR services without analysis and valuation are a remnant of the past (Fitz-enz, 2009).

b. Technological Limitations

Several literatures also indicate the limitations in the information systems used by the HR department. Many organizations fail to update their HRIS, they become outdated and therefore cannot incorporate the innovations of HR analytics. The old HR systems are just used for reporting and answering questions on employee performance rather than setting up models and predicting business insights. Several software companies have specialist talent management HRIS systems which integrate with other departments like finance and accounting. All major integrated talent management suites also include analytics modules, which are marketed as a key benefit in comparison to older HRIS systems (Angrave et al., 2016). These systems are deemed costly by management who don’t see the importance of analyzed people data. Even when HR does have good ideas about how to develop analytics, the relatively peripheral position of HR within the organizational hierarchy may prevent the project from being able to mobilize the support to go forward, or to get the results of analysis acted upon (Smeyers, 2015). Executives usually replace these modules by consultancy firms who undertake the job for them. The consultancy-driven approach to implementation may also be problematic, given that consultancy activity is often directed towards selling

products rather than solving client problems (Sturdy, 2011). The procurement processes through which organizations engage consultants' services typically result in the transfer of a generic 'best practice' approach rather than deep engagement with the organization and its needs (O'Mahoney et al., 2013).

c. Social Limitations

Some HR professionals argue that HR analytics' limitation is not merely the fault of the organization, but the employees' lack of cooperation with their organization. Some employees refuse to supply their organization with sensitive or private data that can be used against them. HR analytics' future may depend on data such as employee's likes and dislikes, private emotions and feelings towards certain events, their own perception on certain customers or transactions, and even sometimes following their social media accounts and deriving insights from them. Silo mentalities within organizations prevent HR-related data being combined with data on other determinants of productivity and performance, so it is often hard to build analytical models that examine the role of HR-related factors while controlling for other relevant factors (Angrave et al., 2016). Issues of privacy, consent, and ethics may become barriers to the advancement of HR analytics.

Unless the factors which stand as obstacles in front of HR analytics are faced and handled, HR analytics will fail the big data challenge and HR professionals will not gain effective strategic influence on their organizations. Several literatures have theorized on how to face these obstructions. Some have depicted that these impediments are merely the result of improper explanation of HR analytics and the way it works;

they believe that the best way to end this would be by gaining and spreading knowledge on HR analytics. Expanding the work of scholars and informing companies and organizations on the proper use of HR analytics and the true value it can add to the business in terms of increasing revenue, minimizing risks, avoiding losses, etc. The most value and finding will result from the cooperation of HR professionals and scholars. In this study, we will further explore the reasons behind the gaps and obstructions mentioned in this literature review as we aim to reduce them and by that increase the adoption of HR analytics by organizations. HR analytics is the way to incorporate the human resources more into the organization's strategic plans and ultimate goals and should be further adopted and utilized to its maximum efficiency.

4. Recommendations from Past Research

According to a study published in MIT Sloan Management Review, four lessons can help HR leverage HR analytics to support strategic decisions. (1) Model, measure and manage your employee dynamics. It is important to be aware of the social influence and impact of your employees. (2) Big Data and analytics are not magic. Although HR analytics gives you valuable insight, but it shouldn't overthrow the value of "intuition" that HR possesses. (3) Analytical HR models should do more than provide statistical performance, they should provide business insights. (4) Back test the impact of your analytical workforce models. Compare your predictions to the reality so any degradation can be acted upon immediately (Baesens et al. 2017).

5. The aspirations for HR Analytics

There are many predictions on the future of HR analytics, some see it progressing into becoming an indispensable part of HR and of the company entirely while others believe it would not live to its objectives. According to HRMID (2017), HR analytics has two potential scenarios, first, that it would be part of the HR function, but the HR function would become a center of excellence, covering training, performance management, and compensations, etc. Alternatively, HR analytics would be joined with another function such as an analytical team. This would allow it to work independently of any specific business discipline and focus but would work on overarching business cases and ways to improve business performance. There will no longer be a separate department for HR Analytics, it would be joined with operations or strategy for example. This scenario would mean that HR analytics would cease to function as a separate discipline”.

B. The Adoption Process

Most believe that the adoption process is not a single event. Whereas the decision to or not to adopt an innovation can be a one-time event, the route that leads to one’s decision does not take place in vacuum. Beliefs and attitudes are formed over time, which in turn may influence decisions (Straub, 2009). Going forward from that, we can say that adopting any new technology is a process and not a single act. For HR Analytics in specific, we set out to discover where Lebanese firms stand in this process. At what stage of utilization are they and what is needed to move this adoption process forward and ultimately reach diffusion or collective adoption of this technology throughout Lebanese firms. The diffusion process is concerned with how innovations

spread, that is, how they are assimilated within a market. More precisely, diffusion is the process by which the acceptance of an innovation (a new product, new service, new idea, or new practice) is spread by communication (mass media, salespeople, or informal conversations) to members of a social system (a target market) over a period of time (FĂDOR, 2010). According to Everett Rogers (1995), there are four main elements of diffusion which are innovation, time, communication and social system. Rogers is a pioneer of adoption and innovation theories and his work has been debated over time and in different aspects. Roger's theory is particularly important because it has influenced numerous other theories of adoption and diffusion (Boyne, Gould-Williams, Law & Walker, 2005; Deffuant et al. 2005; Pennington, 2004; Venkatesh et al. 2003) Adoption of new innovations is one of the aspects studied and has the most relevance to our research of HR Analytics in Lebanese firms considering that HR Analytics is the innovation in HR.

1. Innovation: the first element in the adoption process

Innovation has been referred as utilization of thoughts, ideas, plans and concepts to make economic benefits (Akinboye, 2003). Applying the concept of innovation on HR Analytics, would be to utilize HR Analytics to make economic benefits. But the process of innovation is complex and sophisticated and involves many factors not only concerned with HR specifically but with the organization as a whole. Highly fragment literature is available which suggest that diffusion & adoption is one of the most complex processes of innovation management (Kumar, Singh and Haleem, 2014). It requires various inputs like Social system variables, Knowledge management,

Human resource, Financial inputs, Technology related inputs, technology transfer, Technical know-how, Production capabilities, ICT Resources, Marketing/Sales inputs including customers' needs/wants, R & D facilities (Mannan & Haleem, 2017). In our research, several deficiencies were discovered in each of these inputs. These deficiencies may ultimately explain the reason behind the poor adoption rate of HR Analytics in Lebanon.

2. Communication channels: the second element of the adoption process

Researchers in management and marketing science have contributed to the development of diffusion theory by suggesting analytical models for describing and forecasting the diffusion of an innovation in a social system (FĂDOR, 2010). The lack of knowledge may be the result of the lack of marketing of HR analytics. The lack of publicity from software companies, and lack of promotions from HRIS companies may be the reason behind this deficiency of knowledge on HR Analytics.

3. Time: the third element of adoption process

In the adoption process, time has three dimensions which we will approach from our study area. The first dimension is the time from which the HR professional learn about HR Analytics till the time they decided on whether to adopt or reject it. The second dimension is the time difference between the first companies who adopt and other companies who follow. The third dimension is the rate of adoption of companies

in a given period of time. Going back to our findings, one of the codes emerging was time.

4. Social system: The fourth element of adoption process

Social system is defined as a set of interrelated units that are engaged in joint problem-solving to accomplish a common goal (Rogers, 2010). In this study, the social system characterizes the company as a whole. The employees, management, HR professionals and all stakeholders within the company. According to Rogers (2010), the social structure of the system affects the innovation in several ways: the effect of norms on diffusion, the roles of opinion leaders and change agents, types of innovation-decisions, and the consequences of innovation. Below, we will evaluate the status of adoption in relevance with our findings in terms of the fourth element of the adoption process, the social system; explaining each issue separately.

CHAPTER III METHODS

For the purpose of this research and the exploratory nature of it, we collected data from 20 companies through interviewing 20 of their human resources employees. Qualitative questions asked were related to the topic of HR Analytics, their knowledge of it provoking them to get their deepest insight on the matter. We addressed professionals with interest and ambition on the matter and encouraged them to speak out their stories and experiences. We combined this ontological side with the knowledge gained from various HR articles and previous research to gain a wider perspective on the factors that may push HR professionals into adopting HR analytics and utilizing it to optimal effectivity. A qualitative research was conducted because it can provide “well-grounded, rich descriptions and explanations of human processes” (Miles et al., 2012). Given the main question of adoption, we believe an exploratory research allowed in depth investigation of the true factors that may affect HR analytics adoption. It allowed for an understanding of the actual production of meanings and concepts used by social actors in real settings to emerge and to be further informed by pre-existing theoretical constructs (Rynes & Gephart, 2004).

A. Study Context

Lebanon, a small country in the middle east, was once torn by a civil war that left it destroyed and in ruins. Lebanon is a small (Gross Domestic Product (GDP) is estimated at \$24.6 billion in 2007) and service-based economy where services account

for approximately 71 percent of GDP (Poulis & Poulis, 2009). After the war ended, Lebanon sought the help of external allies to redevelop itself, but that left Lebanon with a major debt problem that continues to affect it till this day. The majority of Lebanese industrial firms are small and family-owned entities, which are concentrated in the capital city of Beirut (Poulis & Poulis, 2009).

In 2009-2010, pupils, university students and students in vocational and technical education represented about 32% of the total population of Lebanon (SIF, 2012). The spoken languages in Lebanon are Arabic, French and English. According to SIF, only 53% of the population of Lebanon aged 15 years and above holding university degree are in employment, the remaining are either inactive or unemployed (SIF, 2012). In 2011, Lebanon ranked 25th among 63 countries in the classification of the results of mathematics and ranked 39th in the results of science (Soueid et al. 2012)

Apparently, the war has left Lebanon with several problems that affected not only its employment rates, business growth but also its educational sector. All these problems have their direct and indirect consequences of business growth, development and continuity leaving business owners in constant struggle.

B. Sampling and Data Collection

Given the topic of this research, sampling human resource professionals yielded the most valuable insight. Our aim was to collect data from different sized companies with a minimum of 10 employees. The emphasis of this study is Lebanon and HR analytics in Lebanese operating firms. Therefore, we wanted to include all types of businesses in Lebanon and especially SME's and family businesses since they are the most common types of businesses operating in the country. The chosen companies operate in different industries (Hospitality, Education, Consulting, Telecom,

Finance, Pharmaceutical, NGOs, and Banking) to eliminate any specificities and bring a wider understanding of the research at hand.

A sample of 20 HR professionals from different levels of the above-mentioned companies were chosen for a 16-question interview. The interview lasted for approximately 20 minutes. The criteria of choice for the interviewees was a minimum of 5 years of experience in HR so they have a wider knowledge of the research questions and would be able to provide valuable information to the study aim.

The interview included questions on 3 main topics that we thought were relevant to HR analytics: The data, the system and the human factor. We also investigated directly what the HR professional thoughts were regarding the factors of adoption of HR analytics and what can be done to further facilitate the introduction of HR Analytics into firms operating in Lebanon. The interviews were conducted in English. Any use of Arabic language was translated before data analysis, 2 bilingual researchers validated the credibility of the data translation.

Table 1.1 details the demographic characteristics of the recruited sample, as for the interview protocol used, it can be found in Appendix A detailing the research questions asked.

C. Recruitment

Before seeking any interviewees, we set to get IRB approval to ensure our research ethicality and proper conduct. After getting approved, we reached out to several HR professional in Lebanon through public platforms to ask for their participation in the research. After getting 20 responses, a summary of the research and a letter of consent to guarantee confidentiality was sent to the participant through email in addition to a sample of the interview questions. Upon agreement of the participant, a

time and date were scheduled for the interview. The interviewees names were changed below to ensure confidentiality. The table below shows several characteristics of the interviewees.

#	Name	Gender	Age Group	Years of Experience in HR	Company Size*
1	Adam	Male	>40	>10	Large
2	Rami	Male	>30	5	Large
3	Rand	Female	<30	>5	Large
4	Louay	Male	>30	>4	Large
5	Jihan	Female	>30	>10	Large
6	Sara	Female	>30	>10	Large
7	Amal	Female	<30	>5	Large
8	Samer	Male	>30	>10	Large
9	Doha	Female	>30	>5	Large
10	Sami	Male	<30	5	Medium
11	Julie	Female	>30	>5	Medium
12	Joelle	Female	>30	>7	Medium
13	Hiba	Female	>30	>10	Small
14	Riham	Female	>30	>10	Small
15	Ramzi	Male	>30	>7	Small
16	Jad	Male	>30	>7	Small

17	Karim	Male	>30	>7	Small
18	Fouad	Male	>40	>10	Small
19	Ayman	Male	>30	>5	Small
20	Steve	Male	<30	5	Small

Table. 1 Interviewee Details

- *Large companies (>50 employees) Medium Companies (>15, <50 employees) Small Companies (<10 employees).*

Sex		Years of Experience		Company Size		Age	
Male	50%	Between 4 and 7	45%	Large	45%	20-29	20%
Female	50%	More than 7 less than 10	20%	Medium	15%	30-39	70%
		More than 10	35%	Small	40%	40-49	10%

Table. 2 Percentage representation of indicators

D. Location of interview

We set out to agree on a convenient and secure location to ensure confidentiality and comfort of the interviewee. Most interviews were done at the interviewees' office. If a face to face interview was not possible, a phone call or a skype meeting was conducted instead.

E. Data Analysis

If consent was given, the interview was recorded, else, the interview was written down directly and with the exact answers given. Directly after the interview was finished, it was transcribed and re-read to ensure accurate information. When all the interviews were transcribed, the texts were ready for analysis and identifying common patterns that resulted from the answers of all 20 HR professionals. The data collected was qualitatively analyzed based on template analysis. Template Analysis is a form of

thematic analysis which emphasizes the use of hierarchical coding but balances a relatively high degree of structure in the process of analyzing textual data with the flexibility to adapt it to the needs of a particular study (Brooks et al. 2015). Central to Template Analysis is the development of a coding template, which summarizes themes identified by the researcher(s) as important in a data set and organizes them in a meaningful and useful manner (Brooks et al., 2014). Phrases, words, or sentences, which hold significance to our research purpose in interviews, were coded. Similar SPECIFIC codes were then grouped and categorized under BROAD codes. Similar BROAD codes were then grouped and categorized according to THEMES which interviewees perceive as important. During the coding process, we also explored prior codes from literature read and prior research conducted, and grounded codes discovered from all the research and questions were thereafter obtained. The themes and codes obtained helped us answer our research question and attain our research aim in discovered factors of adoption of HR analytics by Lebanese operating firms.

CHAPTER IV FINDINGS

HR Professionals Findings:

Emergent Themes from Interview Questions			
THEME	BROAD Code	SPECIFIC Code	EXAMPLE
Technological Readiness	HRIS status	Availability of Information System	10.2.1 We Have an information system
			1.2.1 something related to Oracle HR, others built in software, other simple excel sheets
			2.2.1 As information system, we deal with social security,...
			4.2.1 We just applied it now
			8.2.1 We have an information system, it is very advanced it is custom made
			9.2.1 our system, ..., work day: HR
			6.2.1 we have our own information system (custom-made)
			5.2.1 we do have HR management system and not information system
			12.2.1 we have an HRMS
			11.2.1 we have oracle and effort reporting
			14.2.1 HRIS already made 20 years ago
			18.2.1 We have Oracle system that records all the files
			19.2.1 We have a custom made system that is open to all HR departments
			13.2.1 incorporated on Microsoft Dynamics AX
		Unavailability of information system	3.2.1 Simple programs like Office.
			15.2.3 w place it on excel sheet
17.2.1 2 We have the employee information in one sheet and the payroll in another sheet.			

		<p>20.2.1 We do not have a system, we use sheets to record our employee information</p> <p>16.2.1 2 We do not have an HRIS, we use excel sheets. WE set up several sheets for different departments and different information.</p> <p>7.2.1 currently developing one... data on excel</p>
	Outdated version of system	<p>10.2.2 updated after any change</p> <p>8.2.2 updating the system basically takes place annually</p> <p>3.2.2 no system that updates regularly</p> <p>4.2.2 it hasn't been used for long to be updated</p> <p>6.2.2 half annual</p> <p>9.2.2 we are always updating it</p> <p>12.2.2 every time someone asks</p> <p>14.2.1 updated regularly</p> <p>13.2.1 update at every new hire or status update</p>
Data Status	Data Usage	<p>6.3.1 Our projects are related to competencies... competencies found in profile.. System will be updated</p> <p>6.3.1 the decision was based on HR's recommendation.. HR evidence proved otherwise.</p> <p>14.3.1 make decisions based on level of education. So decisions are based on Data</p> <p>1.3.1 we have clear segregation between data and real data management</p> <p>1.3.2 now they are working on starting to use these things</p> <p>1.21.1 when it comes to management of human capital, yes</p> <p>1.11.1 yes, but again not yet fully incorporated</p> <p>5.3.1 they started thinking about how we can manage and benefit from the data</p> <p>5.9.1 experience skills, not really</p>

		10.11.1 we have another company which is in business,..., but internally, no we don't have it.
		3.3.1 practically it was just for payroll
		10.3.1 of course, they rely on our data. If they need any information, they open the folder and take any required data
		3.3.2 check his file for assessment
		15.1.1 I have my own way of doing things
		8.3.1 any decision we want to make is based on the data
		8.3.2 help us make decisions,.. Depend on data to take any decision related to HR
		8.4.1 we are focusing on some HR metrics like the rating of coming to work late and turn over
		8.21.1 Usually before the strategy, they depend on the data to check
		8.21.2 yes before any recruitment, we check from within before from outside
		9.5.1 it gives reports,..., it does all the analysis
		8.23.1 a small percent
		9.3.1 it is used throughout the company
		9.20.1 analytics of HR, recruitment, performance appraisal compared to performance, different types of reports
		11.2.2 yes they are
		6.17.1 We had several markets requests for psychometric testing,... so whenever they want to take a decision, they rely on these reports. Same goes for recruitment... So if such a service was available, we can benefit from it in the market.
	Data organization	11.2.3 we do not have any documentation, everything will be requested through the software

			<p>4.3.1 each has its own system of payroll, benefits, wages, and schedule</p> <p>9.3.2 as I said we do everything on it from hiring to disciplinary... everything is on it</p> <p>15.2.1 the data is all with me,... I am data.</p> <p>15.2.2 I place it on excel sheet</p> <p>3.2.3 not all data is centralized</p> <p>1.3.3 it is not yet fully integrated, and it is not yet fully adopted ,... Not yet fully incorporated</p> <p>7.4.1 yes (data centralized) it is</p> <p>14.3.2 we do not ask for personal data</p> <p>2.2.1 As information system, we deal with social security,...</p>
		Data Count Shortage	<p>4.22.1 we already started with analytics but the deviation was too large. Low data count lead to high deviation and error.</p> <p>11.11.1 I believe data analytics or HR analytics is more useful if you have a large number of employees</p> <p>10.17.2 In Lebanon you don't have a company with more than 500 employees</p>
HR Readiness	Level of Analysis	Presence of analysts	<p>9.5.2 the system does it by itself</p> <p>3.5.1 no, there are no specialists it start with</p> <p>10.5.1 no, we don't</p> <p>5.5.2 no not really, the only technical people that understand data in our department are somehow the organizational development unit</p> <p>1.5.1 as the role of analysts, I can say there are around five out of the total fifty</p> <p>13.5.1 the organizational development team at HR is responsible for coordinating with all HR entities to collect monthly data from different resources and analyze it.</p>

		<p>9.5.3 we get reports for analysis turnover,.. It gives reports</p> <p>8.11.1 by a small percentage</p> <p>5.10.1 we can use them mainly in performance, career development, recruitment, training and development.</p> <p>1.20.1 I know they should be in order, but a bit of each</p> <p>13.3.1 reports are always extracted and relied on for statistical purposes, analysis are used for process optimization.</p> <p>2.23.1 mostly it is for work loads, another thing is the projects and annual plans .</p> <p>13.7.1 Business Insights related to company overall performance, human capital value added, training and recruitment/turnover movements, in addition to employees' demographics, are supplied on monthly basis to Management. The HR dashboard output comprises a base for any new strategic orientation from Management, related to employees.</p>
	Degree of analysis	
HR knowledge and value	Awareness of Analytics	<p>9.18.1 No, I will see today after we finish speaking</p> <p>9.9.2 not sure</p> <p>8.9.1 we start by checking a specific company and doing HR analytics to check the reality of HR in it</p> <p>8.16.1 if I obtained enough knowledge, of course</p> <p>3.9.1 it is applied on big data and how to optimize it on HR theoretically</p> <p>10.17.1 I think companies don't need HR analytics that much</p> <p>13.10.1 HR Analytics are extremely important and essential for the success of any company, they provide an insight of the general business activity of a Department, while highlighting discrepancies or</p>

		anomalies: “you cannot manage what you cannot measure”.
		5.2.2 They don't stress on the importance of the data for the employees
		7.9.1 I have a small idea but not in details
		14.10.1 I organize data and take decision based on it
		4.9.1 I studied HR metrics, any decision made should be based on information not on data. The analyzed data provide information and have decisions support reports
		12.6.1 No we do not have analysts, it is the lack of awareness. While I believe we have a lot of interesting data, it is not being analyzed effectively and we are not driving enough insights out of it.
		1.10.1 will help build a certain objectivity level, .., will help you do more often scenario analysis, ..., you can do predictions,.. It can help institutionalize and systemize things
	Simple knowledge of HR analytics	5.10.2 But detailed benefits of how we can use them and where we can get the benefit from, no not really
		10.10.1 HR analytics will give data analysis, my background is in MIS so I know the benefits of such a system
		5.5.1 I am not trained and I don't have knowledge to work
		3.9.2 in our expertise, we worked on these but there were no advanced programs that provided more information
		4.21.1 it happened in recruitment and in a project that was going to start, we provided data that showed that it is not convenient to start the project and they changed the business proposition
HR Power		9.6.1 our director of people and culture is one of the plan committee

			members which are the board that discusses the strategic changes
			8.7.1 especially if the proof isn't 100% accurate
			8.7.2 HR should prove his presence as a leader not a follower
			3.5.2 when an HR employee comes, they were above him
			3.7.1 the HR was weaker than others
			3.7.2 they even made a committee that recruits or dismisses, taking the place of HR
			3.12.1 the whole HR isn't being utilized and they see it as an expense
			3.12.2 HR didn't claim their presence well
			10.6.1 yes, everything related to employees. We provide suggestions, but we are not decision makers
			5.7.1 you can put your input, what you see, what you want to do. They take it into consideration
		Minimal value of HR department	7.3.1 they do take it into consideration but not always
			6.5.2 Most organizations didn't know what HR is, they didn't know the importance of HR,.. A lot of companies hand HR to another position. They do not see the importance of HR
			14.7.1 all business decision with direct and indirect impact have response to HR
			13.6.1 Improvements in certain procedures or general enhancements are always proposed at Human Resources level before being presented to Management for review and strategic decisions.
			4.7.1 we participate in the strategic plans also
			12.4.1 the executives take our data seriously and base their decisions on it. Every HR present their data with an action plan,.. Then top

			management discusses and evaluates which plans we should prioritize
			7.14.1 HR manager,.. Will need to prove himself more and they will take him seriously
		Management Support	6.5.1 HR submits the report to management that in turn take the decision
			9.9.1 if corporate applies it, we will
			9.13.1 the decision comes from our head office
			8.9.2 the problem is that the top management won't read the reports
			8.13.2 we need to change top management's policy to have change
			3.3.3 senior managers had their own islands
			1.5.2 the key success factor in having successful role of analyst and data mining,....is whether the executive believes in numbers or not
			1.22.1 the only barrier to this is the institution,.. It needs 100% adoption and support from the executives
			2.17.1 Whoever is above, doesn't want you to overpower him,.., plus whoever is in a higher position doesn't have the energy for additional work.
			2.16.1 This topic should be addressed with top management not HR. HR role is to protect employees and apply organizational goals.
			6.16.1 I n Lebanon, you address the decision maker. If the decision maker was convinced and took the decision, everyone will abide by it.
			2.8.1 Employees are my capital but the organization doesn't regard them as so. Everything is related to money. We hope for a day were companies work to help employees.
			12.4.1 the executives take our data seriously and base their decisions on it. Every HR present their data with an action plan,.. Then top

			management discusses and evaluates which plans we should prioritize
			11.15.1 She is more than willing to finance, they like the idea of analytics and they like to improve things,.. But there are no funds now
			7.11.1 I don't think it is possible in the near future, we do not have the full support of top management
Cultural Readiness	Employee and Management Readiness	Employee support for Data	9.4.1 employees also use our HR system
			8.4.2 all information given by employees are given willingly and easily
			8.4.3 they know this information is necessary for the decisions
			5.4.1 I believe they won't have any problem . If it is a benefit for them, they won't say no
			1.4.1 in Lebanon, we have a problem about providing data. We are not a society or culture familiar with providing data
			7.4.2 employees don't play a role in collecting the data
			12.5.1 Employees do not have access to HR data. We rather consider it confidential
			11.4.1 We did a training for all employees and all of them liked the idea because actually most employees hate the documents
		Culture awareness	8.13.1 we are a culture that doesn't like numbers
			1.2.2 to make these changes, you have to incorporate like a culture point of view where everyone should understand how these systems work
			1.5.3 if you have the background of executives that has never dealt with numbers, definitely the analysts will not understand why it is important
			7.5.1 our department is still developing, so the shift from old to new takes time

			12.18.1 we are all more qualitative driven people rather than quantitative. This requires a change in mindset and recruitment of people with different skill set.
			13.15.1 lack of competence among respective staff to utilize properly the data, absence of resources/tools supporting such practice, not enough knowledge needed for the data processing (HR ratios and standards), etc.
	Strategic Planning	ongoing process	8.5.2 in our plan, we want to use more metrics
			8.13.2 it is included in our plan
			15.3.1 I hope it be systemized soon so I can do some reporting
			5.3.2 a plan for 2019, ..., one of the projects was data analytics
			8.4.1 we are focusing on some HR metrics like the rating of coming to work late and turn over
			14.11.2 we plan on utilizing it and we are planning on acquiring the new system that has analytics
		Time need	1.4.2 it is not yet incorporated, it needs time
			8.5.3 this requires time
Financial Readiness	Monetary Value	Cost	15.2.4 I was pushing for a system but the resources are all allocated
			15.2.5 we need these resources for something else and they take it away from me
			10.14.1 the costs are constraints
			12.17.1 No I am not sure they will be willing to finance HR analytics adoption at this stage since we are optimizing resources and are on a budget
			2.17.1 Even if they were convinced with the idea, they will not be convinced with the cost.
		Funding	5.17.1 we already have a big budget for HR so definitely management would fund

		11.5.1 My company is an international NGO and we rely on funds, so the main reason is financial. Because we do not have funds.
		2.11.1 No, we don't utilize HR analytics. To implement an HR analytics process, we have a costly process whether software or change management. This is expensive. The company isn't willing to pay for something knowing its results will take time to appear.
Return Value	Return on Investment	8.17.1 they should show how the HR department added to the profits of the company
		8.17.2 the rate of absence is not only about stopping absences, but rather to show that his presence will increase the profits
		3.17.1 if HR provides a business case as that the solution provided is saving money, then they will provide support
		7.17.1 If we convince him that it is beneficial to his business in terms of cost, profit, he would be willing?
	Employee Benefit	5.14.1 research, case studies, to see if we adopt what are the benefits. To show them the positive side.
		1.4.3 we never saw the importance of data, we never saw the whole process,.. , what outcome can come from this process of data management and how can I relate this as a benefit

Table. 3 Thematic Table

By analyzing the transcript interviews of 20 HR professional from 20 different sized companies operating in Lebanon, four themes emerged:

1- Technological Readiness

- 2- HR Readiness
- 3- Strategical Readiness
- 4- Financial Readiness

Table 2 represents the thematic table above summarizes the themes, broad codes, and specific codes yielded from the data collection. The source identifies the number of participants who mentioned the specific code mentioned.

Please note that the names given are pseudonyms for confidentiality purposes.

Technological Readiness

Technological Readiness is the first theme identified. It includes two broad codes: (1) HRIS Status and (2) Data Status.

HRIS Status.

Several HR professionals mentioned that they have information systems, some are custom made while other are ready for use. Some of the information systems mentioned are directly related to HR while others are general information system with no link to HR. They do not utilize HR specific criteria.

“We have an information system, it is very advanced, it is custom made” – Samer

“We usually have our system which we use corporately. It is called Work Day: My HR. This is our system and all the information regarding employees are put into an app system.” - Rami

“We do have an HRMS (Human Resources Management System), we use it very often as all our data in all functions is there” – Doha

“We do have an information system, we do have a department that they mainly incorporate all the data but not related to employees.” “We have an HR management system and not an information system” – Karim

Some HR professionals also mentioned that they lack a system. They rely mostly on Excel sheets to keep record of their data. Excel sheets are used in the manner of data bank but with no analysis or linkage between data. Each sheet is specific for a type of data regarding employees.

“It was implemented on very simple programs like office on the main server at the head office. Not all data is necessary present at the head office, it may be distributed in several offices” – Jad

“I upload them on my own, I have an excel sheet. It is somehow old school, but I have my own ways of doing things..., I also have a system for payroll, it is very simple just, so I don’t calculate the pay by hand” – Riham

“We have the employee information in one sheet and the payroll in another sheet.”- Sara

Data status.

Some employees mentioned the different usage of data retrieved from employees. Some use it for reporting while others use it in recruitment or for statistical awareness of the company data. Other employees mentioned that the data helps make HR related decisions. Some mentioned the hinders for data analytics.

“we have clear segregation between data and real data management” – Adam

“.. each has its own system of payroll, benefits, wages, and schedule”- Louay

“...we already started with analytics, but the deviation was too large. Low data count lead to high deviation and error.” - Louay

“I believe data analytics or HR analytics is more useful if you have a large number of employees” - Rami

HR Readiness

HR Readiness is another theme that emerged from the findings. It includes three broad codes, Level of analysis, HR knowledge and value and HR power. The first indicates the level of analysis that is currently done by HR, the second is the knowledge available with the HR professional on Analytics while the third code indicates the power that HR holds in the company.

Level of analysis.

The level of analysis describes the degree of analysis of data that the HR professionals are able to do using the resources at hand.

“the organizational development team at HR is responsible for coordinating with all HR entities to collect monthly data from different resources and analyze it.” – Julie

“Business Insights related to company overall performance, human capital value added, training and recruitment/turnover movements, in addition to employees’ demographics, are supplied on monthly basis to Management. The HR dashboard output comprises a base for any new strategic orientation from Management, related to employees.” – Julie

“We get reports for analysis turnover, It gives reports.” - Ayman

HR Knowledge and Value.

This code describes the availability of knowledge that the HR professional holds regarding HR analytics and the awareness of its benefits and usage.

“I studied HR metrics, any decision made should be based on information not on data. The analyzed data provide information and have decisions support reports” – Louay

“HR Analytics are extremely important and essential for the success of any company, they provide an insight of the general business activity of a Department, while highlighting discrepancies or anomalies: “you cannot manage what you cannot measure”.- Doha

HR Power.

HR Power describes the degree of power that HR is supported in their companies. Whether their recommendations are taken, or their voice is heard. Whether they exist as an influential department or a simple entity to facilitate the paper work.

“A lot of companies hand HR to another position. They do not see the importance of HR.” – Sami

“HR should prove his presence as a leader not a follower” – Samer

“the whole HR isn't being utilized and they see it as an expense” - Jad

Strategical Readiness

The third theme that surfaced was Strategical Readiness. It consists of 2 broad codes. The first being employee and management readiness and the second being planning.

Employee and Management readiness.

Employee and Management readiness includes the employee's support for data and how much of awareness is apparent at the company.

“if you have the background of executives that has never dealt with numbers, definitely the analysts will not understand why it is important” – Adam

“we are all more qualitative driven people rather than quantitative. This requires a change in mindset and recruitment of people with different skill set.” - Rand

“lack of competence among respective staff to utilize properly the data, absence of resources/tools supporting such practice, not enough knowledge needed for the data processing (HR ratios and standards), etc.” - Julie

Planning.

Planning describes the status of HR analytics in some companies. The culture is almost set to introduce such a new trend. It is either in an ongoing process or needs some time to implement.

“a plan for 2019, ..., one of the projects was data analytics” – Rand

“we plan on utilizing it and we are planning on acquiring the new system that has analytics” - Joelle

Financial Readiness.

Financial Readiness is the final Theme that emerged from the analysis of the interviews. It includes two broad codes: (1) Monetary Value and (2) Return Value.

Some companies have financial worries to adopting HR Analytics.

Monetary Value

Shows the cost consciousness that most companies show when planning to adopt new trends especially if they rely on funds such as NGOs.

“I was pushing for a system, but the resources are all allocated.” – Riham

*“No, we don't utilize HR analytics. To implement an HR analytics process, we have a costly process whether software or change management. This is expensive. The company isn't willing to pay for something knowing its results will take time to appear.”
- Ramzi*

Return Value.

The “Return Value” Code portrays the expectations that are expected if HR Analytics is utilized. If the return value is present, HR Analytics adoption would be easier to attain.

“they should show how the HR department added to the profits of the company” – Samer

“we never saw the importance of data, we never saw the whole process,.. , what outcome can come from this process of data management and how can I relate this as a benefit” - Adam

CHAPTER V DISCUSSION

In Lebanon, we set to investigate this adoption of HR analytics and the status of HR Analytics in firm operating in Lebanon regardless of their size. This study investigated the current status of HR Analytics in Lebanese firms from the perspective of HR professionals starting with a general look at the status of HR in the firms and going in depth through the requirements of HR analytics: The availability of Human Resources Management System, the data availability and organization, the role of HR.

Our emerging themes signify that four important factors affect the adoption process for HR analytics: Technological Readiness, HR Readiness, Strategical Readiness and Financial Readiness. To further investigate our findings, we examined them from the theoretical assumption of Roger Everett's theory of adoption. The four elements of adoption according to Rogers are Innovation, Communications channels, Time and Social System.

A. Innovation: the first element in the adoption process

Technology related input

Technological capabilities play an important role in innovation. If the technological resources available do not have upgrade capabilities, innovation will be slower and would take additional time. To be able to utilize HR analytics, you must have 2 crucial things available: Human Resources Information System and Big Data. As for the Human Resources Information System (HRIS), we first noticed in our interviews that most companies do have a system that incorporates the data from employees, data

is organized in a software regardless of this software's capabilities, but it still exists. The theme Technological Readiness indicates that HRIS status and Data Status lack the needed capabilities for advancement. Some companies have a management system, some have a data entry system and others have a custom made HRIS. So, we can say that HR in Lebanon is moving in the right direction. They have systemized their data. Several companies mentioned their use of Excel sheets to document any employee data they have. Excel may not have advanced analytical options, but it can still produce reports and generate statistical records. The first stage of HR analytics is reporting. And whether using Excel, Microsoft Dynamics, or Oracle, companies are being able to generate reports and present statistical findings. They may not be able to reach the 2nd or 3rd level of HR Analytics but they can at least reach the first level which is reporting.

As for the Big Data, we came across several obstacles. First, most companies in Lebanon are SMEs or family businesses that have an average of 20 employees. As the name entitles, Big Data has to be big. One of the companies interviewed started with second level analytics but weren't able to generate any business insight due to high deviation. The data wasn't big enough to generate any insight. In large companies with more than 500 employees, Analytics was well performed, and they were able to generate valuable data that helped in their decision making. So even if Data is organized as most companies indicated, and has good quality, it still falls behind on quantity.

Technical Know-how

When questioned about their knowledge of HR analytics and its benefits, few were able to define HR analytics but were even short on explaining how it works, what is needed to utilize it and even the benefits of it. They lacked any know-how on the matter. Few were able to explain how metrics work and how to generate input from

data. The HR department often lacked any analysts. They often responded that they do their own analysis. Relying on intuition and common sense rather than relying on mathematical equations and metrics. For the first level of analytics, this may be fine. A few numbers and a few graphs would determine the current status of the company and display some knowledge on recruitment, payroll, turnover and absences. But it would definitely not be able to generate any forecast or predict any future insights. Such work in analytics would be the true benefit behind analytics and would save the company undesirable costs.

The lack of technical know-how and the technological disability definitely shows a lack of innovation in HR. According to the emerging theme “HR Readiness”, the level of analysis and degree of knowledge is very minimal in most companies. HR are not yet aware of the analytics benefits and have simple knowledge about it. There are no analysts in the companies working with HR, that was observed even in large companies. According to past research, structured educational experiences (Agarwal & Prasad, 1998a), personal experimentation, and social pressures, and/or change agents (Hord et al., 1987) are suggested as possible moderators for attitudes toward innovation. This lack of innovation is a factor slowing down the adoption process of HR analytics in Lebanese firms.

We can assume that the market has its fears and doubts when it comes to this specific type of technological advancement. HR professionals may be doubting the relative advantage, compatibility, and complexity of the new technology. As well as fearing its trialability, and observability. We must indicate here that for HR Analytics to yield the expected results, data should be gathered over a long period of time. And that emerged in our code “planning” under the theme of “Strategical Readiness” where HR

professional said they needed more time and some mentioned it was still an ongoing process. The benefits therefore may need additional time to be harvested.

B. Communication channels: the second element of the adoption process

When questioned about HR analytics research, very few participants were able to confirm that they had done research on the matter, they hadn't read case studies, explored the benefits nor the cost of utilizing this technology. Most didn't even research the topic, and several hadn't heard of the term before the interview. The emerging theme "HR Readiness" depicts that the awareness of analytics was very simple as we mentioned before. The innovation had not been communicated to them and therefore communication channels can be considered as weak. When asked about their knowledge of any other companies who were practicing HR analytics, few responded with affirmation. And even when confirming, they explained that they hadn't known from word-of-mouth but rather from coincidences or requests. HR analytics has been described as a competitive advantage to the company utilizing it, therefore they may regard it as a hidden treasure not to be exposed to competitors.

C. Time: the third element of adoption process

If we take the first dimension of decision making. According to Rogers (2010), there are five main steps in the innovation-decision process: (1) knowledge, (2) persuasion, (3) decision, (4) implementation, and (5) confirmation. We can say that

according to our research findings, HR professionals are between the first and second steps. Some have reach confirmation and adopted but they remain scarce.

As for the later dimensions, several HR professionals indicated that time was of essence to the adoption process. Our emerging theme “Strategical Readiness indicates that HR Analytics adoption was in some cases an ongoing process, it was in the planning phase. Several indicated that they would need to see the benefits of adopting this technology in other companies before adopting it themselves. According to what was previously mentioned, HR analytics benefits require a long period of time to show; especially if we reach the third level of analysis which is perspective analysis. Therefore, the rate would be very slow, and adoption may take a long period of time before it can be diffused on the whole market. We should also indicate that companies who indicated their use of HR Analytics mentioned their need for more time. HR Analytics was still in the trial phase and needed more time to experiment and utilize to be able to benefit from.

D. Social system: The fourth element of adoption process

Social Structure and Diffusion

Structure within the system plays an important role in indicating whether or not an innovation would be adopted. There are two types of structure, formal and informal.

The structure can play a role in facilitating innovation adoption and to the contrary it can play a role in hindering its adoption. Therefore, the social structure within a company can play an important role in determining whether or not HR analytics would be adopted. This discrepancy was clearly apparent in our research, but

we weren't able to define it exclusively. Some companies unlike others, did start adopting HR analytics, they may be scarce in number, but they do exist. According to the theory above, we can assume that the social structure in the companies who adopted analytics is different than the companies that didn't. Our study did show that some companies had clear HR structures, defined roles and hierarchies within the HR department and also within the company as a whole. Other companies had unclear structure where the decision makers were not clearly defined. Since most businesses in Lebanon are family business, the decision maker is usually the eldest family member, this would affect structure of the company, since the business owner has the final say in any decision and doesn't follow any hierarchal position. Once again the theme "Strategical Readiness" gives an indication that the structuring on the company in terms of processes, planning and decision making are most of times underdeveloped and management considers any feedback from HR as recommendations and not strategic decisions.

System Norms and Diffusion

Norms are a set of predefined behaviors that are expected from individuals in a certain social structure. In this study, norms define what is expected behavior out of HR professionals in their setting; the way they are expected to work and the type of work they are expected to perform as well as the boundaries they are expected to hold. Based on our research, we can assume that most companies do favor innovation. They do value their employees and their ideas and recommendations. Some companies have an open-door policy to encourage feedback. Other companies have regular meetings to

listen to their employees including HR. But what also emerged was the notion that HR is not a critical role in the company which was indicated under the broad code of “HR Power”. Although the human resources department handles the most important resource in the company, the human capital, it is still not considered as an indispensable. Several participants indicated that tasks that should be handled by the human resources department are being allocated to different departments. Especially in the case of innovation or analytics, human resources are not the one managing HR analytics, it is rather OD or IT. Such a norm or ideology would definitely obstruct any desire to innovate. Several participants indicated that they were unaware of any developmental plans that their company was undergoing because they were not informed. Also, several HR professionals indicated they thought the culture was not supportive of their ideas. Even their submitted reports were not taken into consideration. These actions build up a norm that is expected of the Human Resources: Handle your work and leave the innovation to us. This in turn will leave Human resources fearful of even presenting an innovation in their surroundings.

Opinion Leaders and Change Agents

Opinion leadership is the degree to which an individual is able to influence other individuals' attitudes or overt behavior informally in a desired way with relative frequency. Opinion leaders are in the heart of the interpersonal communication network.. Change agent perform the same but differ in their communication capabilities, they don't have the right skills to convince others of adopting a new technology. Based on our research, we found that participants who usually had more experience and

knowledge of HR Analytics, were more confident about reaching out to their management and asking them to adopt this new technology. The majority however lacked sufficient knowledge and experience and weren't as confident in presenting their ideas. The "HR power" under the theme "HR Readiness", determined the level of confidence and change they were able to conflict on the company. Companies which had HR amongst its board of directors were able to be opinion leaders in their domain and ask for innovation. If HR wasn't as powerful in terms of character as well, their recommendations weren't taken into consideration. An opinion leader should have leadership characteristics or else he wouldn't be able to impose change or even request it. Our findings suggested that if HR doesn't gain its power and position as a strategic partner in the company, it will not be able to even ask for innovation in its area. Several participants indicated that they thought they were easily replaced. And that the HR department entirely was replaceable. They believed that the worth of any department was the amount of profit it could generate for the company. HR in the opinion of management is a liability, a cost that the company has to endure to get its employees organized. Although HR analytics would bring in profit and reduce cost for the company, unless HR professional are able to be leaders, they will not be able to communicate that gain to their superiors and therefore won't be able to adopt it.

Types of innovation-decisions

In our research, we came across different types of decision making depending on the type of company. Our study examined SMEs, Family businesses, and Large companies. Each of these companies possessed a different type of innovation decision. Large companies tend to have Collective decision-innovation. The board of directors

meets, is presented with a plan and a recommendation, it studies the case and makes a collective decision that is communicated throughout the company and is acted upon by different players in different domains. In family businesses, the decision tends to be Optional, regardless of the wants and needs of the HR department the decision maker remain the owner of the family business, usually the eldest family member, and unless he approves to adopt the innovation, no one in the company can take any decision or request any reforms in the ways of business. As for SMEs the decision usually tends to be an Authority innovation-decision. The HR and the General Manager meet and discuss the suggestion and make the decision with finance to adopt the innovation.

Different types of decisions play a role in deciding the rate of adoption if you do not know the type of decision making at the company. Several participants indicated they have to present their suggestions to several individuals because they didn't know who the decision makers in the company were. If the decision makers and the type of decision is clearly set at the company, the decision to adopt any innovation would be easier because you can reach the decision makers quickly.

Consequences of innovation

The consequences of innovation address the changes that affect the social system from adopting an innovation. They are at least three:

- Desirable vs. Undesirable
- Direct vs. Indirect
- Anticipated vs. Unanticipated

The consequences of the innovation play an important role in adopting the innovation. If the consequences aren't very clear, the decision makers will not approve

the innovation. The innovation would be considered too risky. For HR analytics, our study suggests that although the consequences can be easily observed through case studies and research, the HR personnel usually didn't quest it and that emerged in the theme "HR Readiness" with the lack of Knowledge. Some suggested waiting until other companies started adopting and then their decision would be based on the advantages witnessed from others. Therefore, the desirable and undesirable consequences remained vague. As for the direct and indirect consequences, they can be evaluated in terms of money. One of the emerging themes of this study was "Financial Readiness". The direct cost entailed in adopting analytics is the cost the company has to endure from acquiring professionals to acquiring the system and inducing change into the company as a whole. These consequences were feared and seldom supported by the decision makers. As for the anticipated and unanticipated consequences, they were also very vague, we assume that the lack of research and lack of knowledge on new innovation in HR is the reason behind that.

Key Findings

HR analytics is facing different obstacles worldwide in its adoption in companies. In Lebanon however, we can assume that the biggest obstacle is lack of knowledge and experience in HR analytics and the lack of readiness from the HR professionals towards this utilization. As per the adoption theory by Everett Rogers we can say that this lack of readiness from HR has led to a lack of innovation which is primary element for the adoption of any technological advancement. Other obstacles have been indicated that are technological, strategic and financial. But the ultimate change factor would be if HR armed itself with the right tools of knowledge and

experience in Analytics, metrics and Big Data it would then have the power to convince, adopt and implement.

E. Limitation to the theory

It is important to note that we find the adoption and diffusion process to lack an important element that is worthy of considering. Based on our study, we found that the adoption process differs with regard to the company size. When considering companies in Lebanon, we found discrepancies between Large companies, Family businesses and SME's. Each company had a different rate of adoption based on the employee size. The size of the social structure can play a role in the rate of adoption as well as the decision of adoption. In Large companies, adoption seemed to take longer time because data had to be extracted from a large pool of employee, whereas in smaller companies, data could be gathered at a shorter period of time.

Also, Large companies may have a higher resistance to change and therefore, employees would require additional time to accept the change and go along with the process. Whereas smaller sized companies, whether SMEs or Family businesses, the culture was homogenous and therefore enforcing any change would be easier because the culture of unity would ease the acceptance of the innovation.

Supported by the adoption and diffusion theory of Everett Rogers, we detailed the findings of our study. We can assume that the diffusion process is still in its early stages as very minimal adoption has taken place due to various factors. The lack of innovation amongst HR, the weakness of communication channels amongst all

members of the company, Time constraints and the different obstacles present in the social system has made it very difficult to adopt HR Analytics in Lebanese firms.

CHAPTER VI

PRACTICAL IMPLICATIONS AND FUTURE RESEARCH

Practical Implications

In this study, we examined the status of HR Analytics and the factors that are hindering its adoption and utilization in Lebanese firms. We explored the role of HR in Lebanese firms as well as their knowledge about HR Analytics. We further explored their status in their companies and the perception of management towards their advancement as a department and as employees. In order to minimize the effect of the factors hindering adoption and consequently increase the rate and degree of utilization of HR analytics, we suggest the following:

- HR Managers should empower themselves through education and research. The more knowledgeable they are, the more powerful and insightful they become, thus increasing the value of their work and gaining respectful status.
- HR Managers should claim their status as strategical partners in their company. This can be done by presenting evidence of their value through constant reporting of their hidden profits and cost prevention decisions.
- HR managers should increase their communication with management and the social structure they belong to. This can be done by circling the departments and acting as beneficiaries rather than police.
- Better technological tools and software attainment in the HR department.
- HR managers should be more open to technology and update by reading more case studies and up-to-date discoveries in their field.

- HR managers should seek acquiring degrees or courses regarding HR analytics and the advanced use of information systems.

Future Research

This study was conducted from the perception of HR professionals and their thoughts regarding HR analytics adoption. We believe further research should be done to investigate the adoption factors from a management perspective. To examine furthermore the factors which are limiting management from acquiring HR analytics despite its numerous benefits and results. In addition to that, scholars should examine the status of HR analytics in Lebanon through a longitudinal study to dictate any form of improvement in the rate of adoption and the degree of utilization. Furthermore, scholars can examine the different methods of use of HR analytics, in what domain is it being used, by examining only companies who have adopted it. These studies will bring more awareness on the topic and encourage hesitant adopters to investigate the topic furthermore and hopefully adopt the new innovation.

APPENDIX A

The interview questions for HR Professionals:

- 1) Please explain the role of the HR department in your organization.
- 2) How do you incorporate the data derived from your employees? Do you have an HRIS? If yes, when do you often update your HRIS?
- 3) How would you imagine/describe your executives' response to HR data? Will they be willing to work upon it? Take decision based on it?
- 4) How do you imagine/describe your employees' response to HR data? Are they willing to provide personal data to your company? To what level?
- 5) Do you have any analysts working in your HR department? If yes, how do you describe their work? How do you function together? If no, state the reasons why.
- 6) Does your department or senior HR personnel have a say in the strategic decisions of your company? In what grounds?
- 7) Have you ever supplied your management with business insights? Please elaborate the situation. What was their response? If no, state the reason why.
- 8) Do you see your employees as critical resources in the business decision-making process? If yes, explain in what ways. If no, explain your reason.
- 9) Do you know what HR Analytics is?
- 10) Do you know any benefits of HR analytics? If yes, further explain them. If no, why don't you feel the need to explore them?
- 11) Does your organization utilize HR Analytics?
If No,
- 12) Does your organization plan on utilizing HR analytics? If yes, when and how? If no, state the reason why.
- 13) What do you think can be the reason behind the lack of HR analytics in your organization?
- 14) What would facilitate its adoption?
- 15) When would you be willing to further investigate this utilization?
- 16) By whom do you think this issue should be addressed?
- 17) Would you/management be willing to finance the HR department into adopting HR analytics? Explain.
- 18) Have you conducted any research on the matter? Why not, if so?
If Yes,
- 19) What were the factors that triggered your utilization of Analytics?
- 20) To what level is HR Analytics being utilized in your company??
- 21) Have you ever taken a business decision based on HR data? Explain the situation.
- 22) What do you think are the barriers to further utilization of HR analytics?
- 23) In what domain specifically are you utilizing Analytics? (recruitment, training, succession, etc.)
- 24) Do you know of any competitive companies who have adopted HR analytics? How are they performing?

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