



The impact of Human Resources Information Systems on individual innovation capability in Tunisian companies: The moderating role of affective commitment

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ABSTRACT

This research focuses on the study of the impact of the HRIS' use in human resources department (HR) on individual innovation capability. A research model was proposed and the related hypotheses were tested within human resources department of Tunisian companies with 42 respondents. Results estimated by Smart PLS software, showed that HRIS usage enhances individual innovation capability of Tunisian HR employees. Moreover, it has been found that employees' affective commitment moderates the relationship between HRIS usage and individual innovation capability. In fact, more the employees are engaged affectively to their organization more the HRIS impact is positive and noteworthy on individual innovation behavior of HR staff. The study allows clarifying some lines which are responsible of improving individual creativity.

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1. Introduction

The international environment has grown uncertain and become difficult to predict. Since January 14th 2011, Tunisia's post-revolution environment induced Tunisian companies into changing their working methods and adapting themselves to an increasingly more and more competitive and uncertain environment (Ben Moussa, 2018). Accordingly, to survive and remain competitive, companies should have an information system able to make available reliable and consistent information on all the company's activities. It is information that now guides decision-making because it generates knowledge within the organization and as such it is essential for the continuity of the company's activities. With the classic (non-integrated) information systems, companies find it difficult to manage a large amount of information coming from their different partners. This has forced companies all over the world to gear towards the adoption of information systems able to integrate data on all of the company's activities (Markus, Axline,

Petrie, & Tanis, 2000). These systems provide a knowledge platform that allows users to share information from different sectors such as manufacturing, finance, human resources, etc. (Davenport, 1998; Purvis, Sambamurthy, & Zmud, 2001). These systems are able to support decision-making and provide competitive advantages to the organization (Shao, Feng, & Liu, 2012; Wu & Wang, 2007). Similarly, Tunisian SMEs are moving more and more towards the adoption of new information systems like Enterprise Resource Planning (ERP). Indeed, these integrated systems allow companies to leverage more consistent and reliable information. Since competitiveness is much more about knowledge and communication with customers, human capital is now becoming the main source of competitive advantage. Nordhaug (1993) considers human capital as a very important facet in the development and success of the company. According to Hendricks (2002) the workforce has become a productive asset and not a burden that the company has to bear. Under an economic vision, Becker (2002) defined human capital as the knowledge, skills, creativity and health of the individual. Similarly, Weatherly (2003) and Namasivayam and Denizci (2006) link human capital to knowledge, education, work skills and psychological traits such as personality, behavioral styles, cognitive abilities, motivations, etc. Human capital is a critical factor for business success in general and innovation in particular. Indeed, the higher

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the human capacity, the higher the learning capacity of employees. This, in turn, enhances the innovative capacity of employees (Schneider, Günther, & Brandenburg, 2010). In order to maintain and develop this precious human capital, managers should pay particular attention to the human resources management function (recruitment, training, remunerations, etc.). This task is being facilitated by the acquisition of human resources information systems. In the literature, the array of technological innovations applied to human resources are classified into three categories: e-HR: electronic human resources, human resources information systems (HRIS) and virtual human resources groups (VHR) (Ngai, Law, Chan, & Wat, 2008). Upgrading the HR function allowed for improving the different services it offers, to share tacit knowledge across the organization and to cast on the entire function a rather strategic dimension.

HRISs contribute to modernizing and developing the HR function. Laval and Diallo (2007) focus on the triple impact of information and communication technologies on the HR function. Their findings were supported by the results of Reddick (2009). They concluded that the impact of HRIS on the HR function is operational and relational. The operational impact can be summed up in its ability to increase the efficiency of human resources operations; automation of the routine tasks and operations of the HR function; and finally, an increase in the productivity of HR staff. For the relational impact it amounts to reducing the execution time of customers' requests; and improving the level of satisfaction of HR staff and their acceptance by members of the organization. Hosnavi and Ramezan (2010) argue that following HRIS usage, employees will be able to perform their tasks with a high level of precision, accuracy and speed. HRIS is critical to the success of the HR function (Madhuchanda & Tripathy, 2009). Lengnick-Hall and Steve (2003) pointed out that the benefits of HRIS are speed of response, easy access to information, increased administrative efficiency, improved reporting and decision-making. Laval and Diallo (2007) point out that HRIS also affects the operational and strategic management of human resources. Bidan (2010) highlighted the role of information systems in sustainable development, as paper use is substantially reduced. In a similar vein, Rangriz, Mehrabi, and Azadegan (2011) argue that HRIS helps support strategic decisions. Indeed, the information generated by the system will be used at a high hierarchical level to support strategic decisions. Information reduces uncertainty rate, minimizes the gap between forecasts and actions, and produces data that serve as a basis for decision-making. This explains why, nowadays, companies invest in human capital in order to develop an organizational competence and guarantee their sustainability. In fact, human resources performance changes organizational success criteria in a knowledge-based economy (Chakraborty & Abu Mansour, 2013). In order to enhance employees' performance, companies should dispose of the most sophisticated technological equipment and systems. Many studies revealed the major role of human resource information systems (HRIS) in improving individual performance and productivity (Lengnick-Hall & Steve, 2003; Reddick, 2009; Hosnavi & Ramezan, 2010). HRIS became the key factor for all firms (Chakraborty & Abu Mansour, 2013).

The success of any company project can only be guaranteed with the full commitment of employees. Using HRIS and improving individual's innovation capacity are probably influenced by employees' commitment to the organization. According to Sheldon (1971), organizational commitment can be defined as a psychological state that reflects the nature of the relationship between employees and the organization. It determines their degree of belonging to their organization.

Meyer and Allen (1991) distinguished between three types of commitment: affective commitment, continuity commitment, and normative commitment. Normative commitment is a sense

of obligation to stay in the organization and to continue working (Allen & Meyer, 1990). Allen and Meyer (1996) defined commitment to continuity by recognizing the cost associated with the disruption of activity and consider it a psychological state. Commitment to continuity can be considered as a result of a deficit equation for the employee, if he/she ever leaves the organization. This is a purely rational reasoning. Affective commitment is appreciated by the positive feelings the employee feels toward his or her organization. It determines the importance of the contribution or sacrifice that the employee is willing to make to the benefit of the organization. In our study, we are only interested in affective commitment because we consider it to be the most important dimension on which the other two dimensions depend. Mercurio (2015) considers affective commitment to be at the heart of organizational commitment. In addition, affective commitment can play an important role in the success of the ERP project in general and the HRIS module in particular. It is able to contribute to the improvement of employee creativity as a result of effective use of HRIS. Indeed, organizational commitment and more specifically affective commitment of employees facilitates the adoption and especially the use of information systems. This, in turn, enhances the innovative capacity of employees. Given the fairly high failure rate of ERP (Trkman, 2010; Vom Brocke, Zelt, & Schmiedel, 2016), companies are called upon to involve their employees before and after its implementation. It is therefore necessary that the use of HRIS be accompanied by an affective engagement of employees to ensure a greater chance of improving capacity for innovation. Studying the impact of this specific tool on users' attitudes shows the many benefits that an organization can generate. HRIS has many effects on individual users. Besides enhancing their performance, it has the potential of developing individual creativity (Oldham & Da Silva, 2013). Thus, creativity represents the first step in the innovation process (Coelho, Augusto, & Lages, 2011). In summary, several researchers (e.g.: Laval & Diallo, 2007; Reddick, 2009) have pointed to the usefulness of the human resources information system. They highlighted a multitude of benefits, such as easy access to human resources information, reduced time to complete tasks, improved planning programs (Hosnavi & Ramezan, 2010; Madhuchanda & Tripathy, 2009; Lengnick-Hall & Steve, 2003). However, very little research has paid particular attention to the contribution of HRIS to the development of employee innovation capacity. In this paper, our interest lies in the study of the moderating effect of affective commitment on the relationship between HRIS and employees' innovation capacity.

Indeed, few studies on information systems did integrate models with moderators (Lacroux, 2010; Chin, Marcoin, & Newsted, 1996). Our study extends this line of research and contributes to its enrichment in the management field. In fact, to our knowledge, the combined effect of HRIS use and affective commitment on innovation capacity has never been studied.

Aware of the importance of employees' affective commitment to the success of any company project, we try to study its moderating role in improving the relationship between HRIS usage and capacity innovation. It goes without saying that when employees feel no positive feeling for their organization, they will never allow for an efficient HRIS use. Therefore, our main research question is: What is the impact of affective commitment on the relationship between HRIS usage and employee innovation capacity?

Our aim then is to study, first, the effect of HRIS usage on improving the creativity of employees. Second, we will study the moderating effect of affective commitment on this relationship. This paper is an addition to HRIS research and examines its impact on individual innovation capacity. Furthermore, the purpose of this study is to clarify the nature of the moderating effect of affective commitment.

Then, our paper is structured as follows. Section 2 reviews the literature on HRIS and other research disciplines. Section 3 develops and tests our research model through an empirical study of a sample of Tunisian companies. Section 4 presents the results. Finally, section 5 discusses the results and presents the limitations of this study.

2. Literature review

2.1. Human resource information system (HRIS) usage

HRIS involves materials, software, staff, data, and proceedings (Bidan, 2010; Reix, 2004; Tixier, 2004) which allow for acquiring, storing, processing, analyzing, retrieving and disseminating information about an organization's human resources (Chandra, 2009; Reix, 2004). HRIS implementation within an HR department showed many benefits: automating HR function tasks and routine operations, reducing client request time execution, increase efficiency of operations, improving HR quality service (Laval & Diallo, 2007; Reddick, 2009) developing employee productivity and knowledge (Lengnick-Hall & Steve, 2003; Chandra, 2009; Hosnavi & Ramezan, 2010; Sadiq, Khan, & Ikhtlaq, 2012). Previous studies (e.g.: Hosnavi & Ramezan, 2010; Sadiq et al., 2012) had already covered HRIS adoption advantages for the firm and employee. In fact, its usage allows for reducing costs by decreasing the number of employees and the magnitude of paper usage. It improves development programs and planning and promotes communication between employees by creating knowledge management flows. It offers also the opportunity to improve organizational performance, facilitates communication between top management and employees, produces relevant information and data which represents the base for making decisions in an organization (Chandra, 2009; Bhavsar, 2011; Ngai et al., 2008; Razali & Nehari, 2011; Chakraborty & Abu Mansour, 2013). It was shown that the sustainable usage of this tool allows the HR function to reduce daily operations so that it can focus on strategic decisions (Lengnick-Hall & Steve, 2003; Bhavsar, 2011). Thus, the system's generated information forms a base for strategic decision-making (Rangriz et al., 2011). The literature puts an emphasis, at the same time, on the role of information systems and information technology in general in developing employees' performance (Razali & Nehari, 2011) in addition to developing their innovation capacity (Qutaishat, Khattab, Abuzaid, & Al-Manasra, 2012). In this study, we try to determine the direct HRIS impact on employees' innovation capacity in the HR department and to point out whether this relationship is moderated by affective commitment.

2.2. HRIS usage and HR employees' innovation capacity

Innovation is considered to be the corner stone of the success and survival of companies (Moises, Casadesús, & Petnji, 2016; Yesil & Sozibilir, 2013) in this informational era. In fact, it provides the foundations for the company to increase its performance (Kalyar, 2012). Resources theory stipulates that the individual in an organization represents a sacred resource. In line with this line of thinking, we support the crucial role of employees in the creation of innovation (Yesil & Sozibilir, 2013). Innovation and creativity shown by employees are the first step in the innovation process (Coelho et al., 2011; Reinhardt, Gurtner, & Griffin, 2018). This willingness and capacity of individuals to innovate ensure the transfer of innovation within the organization (Yesil & Sozibilir, 2013). To better understand the concept of innovation capacity, first of all it is essential to define it. For De Sousa, Pellisier, and Monteiro, 2012, p29), the capacity to innovate represents "an emotional and a cognitive process relative to creativity". According to Iqbal (2011), p2), creativity

or innovation of an individual could be defined as "Novel and useful ideas, processes or products offered by an employee, as judged by relevant others". In a general manner, innovation of an individual or innovation in general should meet a well-determined need and specially should be useful. In the same perspective, Lewis and Wright (2012) claim that innovation is a process that consists of passing from divergence of ideas to convergence of solutions. The literature studied individual innovation capacity under different perspectives. Some studies pointed out that creativity represents an important factor for innovation (Coelho et al., 2011; Ernst, Kahle, Dubiel, Prabhu, & Subramaniam, 2015; Gutiérrez & Vernis, 2016; Story, Boso, & Cadogan, 2015). To this end, organizations should encourage their employees to be more innovative by putting at their disposal appropriate systems (Yesil & Sozibilir, 2013). In the same vein, Borjesson, Elmquist, and Hooge (2014) advocate that organizations should be aware of the critical needs of the permanent development of individual innovation capacity. They add that innovation capacity development requires involving managers throughout the learning process, and setting up adequate policies and changes like the usage of available resources.

Previous studies highlighted factors that are likely to boost individual creativity. Among those factors, several studies insisted that transformational leadership with front-line work has direct and significant impact on employees' creativity (Wang, Tsai, & Tsai, 2014). Moreover, intrinsic motivation also proves to be a factor with a significant effect on creativity (Coelho et al., 2011). Yesil and Sozibilir (2013) pointed to the direct and positive impact of the dimension 'Opening up to experience' on individual innovation. As for Kalyar (2012), individual innovation results from creativity and self-leadership. Actually, the author stipulates that creativity should be strengthened by self-leadership which helps the individual to develop and sustain their creative ideas. HRIS is the focus of our study. In particular, we are interested then in the impact of this tool on innovation at an individual level. Many studies revealed the nature of the relationship between HRIS and individual innovation capacity. Gordon, Tarafdar, Cook, Maksimoski, and Rogowitz (2008) indicated that the usage of IT tools and applications improves and boosts operational efficiency. On the one hand, according to these authors, these tools allow for sharing and transferring knowledge. On the other hand, and as a consequence, this knowledge helps individuals, in the firm, to generate ideas that are creative and potentially useful at the same time. Similarly, Qutaishat et al. (2012) identified the direct and significant impact of ERP implementation on the capacity of employees to innovate in telecommunication firms in Jordan. In a very recent study, Oldham and Da Silva (2013) claim that information and digital technologies are likely to improve and promote innovation of individuals and the organization itself. According to them, these digital technologies ensure and provide the necessary conditions for the employees to perfect their jobs and especially generate creative ideas. This study highlights the crucial role of different tools, information support and applications in the creation of new outstanding ideas and the shaping of these ideas to be actually implemented into an innovative product. Oldham and Da Silva (2013) state that instantaneous access to new information provides the employee with new approaches and ideas. Moreover, computer applications promote individual creativity. Bearing on the above proposals, we formulate the following hypothesis:

H1. HRIS usage improves HR employee's innovation capacity.

2.3. Moderating role of affective commitment

Allen and Meyer (1990) defined affective commitment as the attachment of the employee to their organization. The employee determines the degree of his or her involvement and identification.

Khan (2011), p3) define affective commitment as “The employee’s emotional attachment to the organ

ization, his identification and involvement with it». Consistency between the employee’s values and the organization’s values can only reinforce their identification and their degree of belonging to the organization. According to Meyer and Herscovitch (2001), affective commitment reduces employee absenteeism and improves their organizational behavior and job performance. In addition, Jaros, Jermier, Koehler, and Sincich (1993) showed that affective commitment enhances organizational citizenship behavior. Meyer and Allen (1991) identified three factors determining organizational commitment: work experience, organizational characteristics and employee demographics. Digitizing the human resources management function is a radical change that requires the total commitment of employees (Xu et al., 2008). Moreover, the success of a new project depends on the receptivity of employees and their propensity to adopt new ideas (Popa, Soto-Acosta, & Martinez-Conesa, 2017; Rubera & Kirca, 2012). Fernandez and Moldogaziev (2011) highlighted that innovation capacity depends on the degree of employees’ commitment. The higher the commitment of employees, the more they try to adopt new technologies such as HRIS (Gruman & Saks, 2011). Among the causes of failure often cited is employee resistance to change (Abdolvand, Albadvi, & Ferdowsi, 2008). We cannot consider individual innovation capacity as separate from commitment and involvement. In fact, the employee can be creative only when they feel comfortable with and involved in their organization. As a result, sharing the firm’s vision and disseminating relevant information encourage the employee to participate in the implementation of global strategies and to be proactive in searching for solutions to problems (Coelho et al., 2011). Many studies insist on the role of commitment in improving performance and individual motivation (Nadeem, 2010; Yesil & Sozibilir, 2013). Meanwhile, motivation leads to creativity development (Coelho et al., 2011; Khan, 2011). Oldham and Da Silva (2013) point to three necessary conditions for developing employees’ creativity and subsequently enhancing individual and organizational innovation. Of these conditions, the authors distinguished commitment. They also emphasized that creativity and the capacity for innovation cannot surface and cannot develop unless the employee is fully committed to his work. The results of Akinyemi (2012) confirmed that affective commitment promotes organizational citizenship behavior. In addition, their results show that organizational citizenship behavior improves organization effectiveness, efficiency and innovation. Soto-Acosta, Popa, and Palacios-Marqués (2016) and Kmiecik, Michna, and Meczynska (2012) showed that staff commitment contributes to improving innovation capacity. In fact, the more employees develop an emotional affinity with a company, the more likely they are to remain members of the organization and to achieve the goals of the company (Allen & Meyer, 1990). The use of HRIS is enhanced when employees are affectively committed to their organization. HRIS implementation and use is perceived by employees as an opportunity to be seized to improve the functioning of the company.

Bearing on these assumptions, we can propose that affective commitment improves individual innovation capacity. This is reformulated into the following hypothesis:

H2. Affective commitment moderates the relationship between HRIS usage and innovation capacity of HR staff.

The following figure shows our research model and hypotheses (Fig. 1).

3. Methodology

Our research methodology consists in administering questionnaires for SMEs that had already implemented HRIS. These

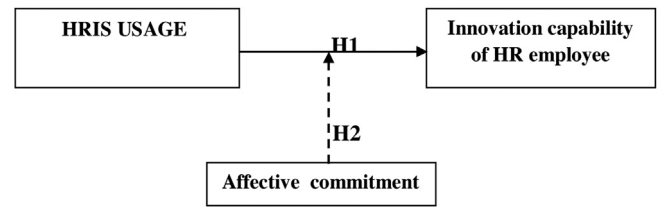


Fig. 1. Research model.

Table 1
Distribution of respondents according to demographic characteristics.

	Frequency	Percent
Age :		
• [20–25]	1	2.38%
• [26–35]	25	59.52%
• [36–45]	11	26.20%
• Older than 45	5	11.90%
Total	42	100
Academic level		
• University	39	92.9%
• Secondary	3	7.1%
Total	42	100
Seniority		
• More than 5 years	30	71.43
• Between 1 and 5 years	10	23.80
• Less than 1 year	02	4.77
Total	42	100
sector of activity		
• industry	12	28.57
• service	30	71.43
Total	42	100

companies operate in different sectors which can be classified under two categories: industry and service. Since we do not have pre-established statistics on the organizations that use HRIS, a convenience sampling method is adopted. We sent 120 questionnaires to 28 Tunisian SMEs using HRIS. These SMEs are all located in Tunisia. The questionnaire is addressed uniquely to the Human Resources department where HRIS is deployed (HRD or human resources manager, training officers, recruitment manager, the performance evaluation manager, the entire HR team). Only 12 SMEs replied, with a total of 46 respondents. During data processing, it was revealed that 4 questionnaires were unusable because of a high rate of omitted questions. Then, only 42 were retained with a 35% return rate. In this survey, measurement scales of our constructs were adapted from the literature (Appendix 1). HRIS usage is measured by use frequency on a 7-item scale (Ruel & Kaap, 2012; Straub, Limayem, & Karahanna-Evaisto, 1995). Employees’ innovation capacity is measured by 3 items adopted by Ganesan and Weitz (1996) and adapted by Coelho et al. (2011).

Finally, an abridged version of the scale of Allen and Meyer (1990) was adapted to measure “affective commitment” with 4 items. The three constructs of our research model are measured by a 5-point Likert scale ranging from zero to very strong. In order to validate our scales, first we used the SPSS software to purify our measurement scales. Second, we used the PLS software (Ringle, Wende, & Becker, 2015) to test the hypotheses of our research model.

3.1. Descriptive statistics of the sample

The results in Table 1 show that our sample consists of SMEs operating in two sectors: industry (28.57%) and service (71.43%). The surveyed employees are 59.52% young people between 26 and 35 years old. Similarly, 26.20% are between 36 and 45 years old. Employees over the age of 45 represent only 11.90%. They have

Table 2
Descriptive statistics for functionality of HRIS Usage.

HRIS Usage	Min	Max	Mean	S.D
1 payroll	2	5	4.19	,804
2 personnel administration	2	5	3,98	,924
3 time and labor management	2	5	3,79	,925
4 e-recruitment	2	5	3,50	1,088
5 compensation and benefits administration	2	5	3,26	1,270
6 e-performance evaluation	2	5	3,31	1,115
7 e-training and development	2	5	2,79	,898

seniority that exceeds 5 years (71.43%). Most surveyed employees (92.9%) pursued university education.

The descriptive statistics shown in Table 2 show a difference in the use of HRIS. The employees of the surveyed SMEs use the 7 functionalities of the HRIS, but to different degrees. The surveyed companies use the HRIS module mainly for the following purposes: payroll (mean = 4.19), personal administration (mean = 3.98), time and labor management (mean = 3.79), e-recruitment (mean = 3.50), and compensation and benefits administration (mean = 3.26). On the other hand, e-performance evaluation (mean = 3.31) and e-training and development (mean = 2.79) dimensions are poorly used by Tunisian SMEs.

To validate our measurement scales, we conducted a principal component analysis (PCA). The construct HRIS usage contains 7 items. The results of the (PCA) showed that two items have low coefficients in the correlation matrix, then it was deemed necessary to apply another principal component analysis without these two items (item4 and item5).

The new results validate the measurement scale and confirm the unidimensionality of “HRIS usage” with a KMO (Kaiser–Meyer–Olkin) equal to 0,772. The same procedure is conducted to validate the other two measurement scales, “employees innovation capacity” and “affective commitment”. The results confirm their validity, with a KMO equal to 0,751 for ‘employees’ innovation capacity’ and 0,641 for “affective commitment”. In a second step, we used the PLS software (Ringle et al., 2015) to check the reliability of our measurement scales. PLS allowed us to calculate Cronbach’s Alpha coefficient of each variable. The results indicate that the items are homogeneous. Then, we conclude about the reliability and unidimensionality of our measurement scales. Cronbach’s Alpha is 0,905 for HR staff innovation capacity, 0,814 for affective commitment and 0,747 for HRIS usage. Table 2 reports the correlations and Cronbach’s Alpha coefficients (Table 3).

4. Results

The test of the first hypothesis (HRIS usage improves HR staff innovation capacity) yielded the following results: on the one hand, the structural coefficient is 0,569, which indicates the importance of the effect. On the other hand, the coefficient of determination R^2 is 0,361, which validates the model. The Bootstrap procedure of the Smart PLS software is used to measure the significance of the relationship. Table 4 shows that the t-statistic is 7,917 > 1,96, which confirms the significance of the relationship. This model is significant and explains 36% of variance in the development of HR staff innovation capacity. Then, the more HR employees use HRIS features in their daily operations, the more they develop and improve their innovation capacity. Subsequently, hypothesis 1 is retained.

In fact, the use of HRIS makes it possible for reducing costs over time by minimizing task execution time as well as reducing HR employees and paperwork. It improves development programs and planning, stimulates communication between employees, develops employees’ knowledge through the creation of knowledge management flows that circulate throughout the company and feed all departments. It also offers the opportunity to improve

organizational performance, facilitates communication between top management and employees, and produces relevant data and information as a basis for decision-making within the company (Bhavsar, 2011; Chandra, 2009; Ngai et al., 2008). As a result, not only the adoption of an HRIS allows the HR department to be highly effective, but also it contributes to the overall development of the company. HRIS also allows top management to have at their disposal operational staff and future plans ready for any new project. Dashboard follow-up, automatically generated by HRIS following a specific request, allows for monitoring the evolution of work conditions and the alarms set on the working environment and safety at work. Repetitive absences reported in a department or team are detected quickly to diagnose their origin and to quickly find solutions for them. In fact, when accessible, relevant information can help managers and employees respond more quickly to changes. Hypothesis 2 assumes that the relationship between HRIS usage and HR staff innovation capacity is moderated by affective commitment. First of all, the results, reported in Table 5, showed that the relationship between HRIS usage and HR staff innovation capacity remains significant with the presence of the moderator variable “affective commitment”. T-Statistic of hypothesis 1 in the presence of the moderator is 5184. Therefore, hypothesis 1 is retained. Then, the moderator effect is significant. Comparing the coefficient of determination of hypothesis 1 before and after including the moderator “affective commitment”, we notice that R^2 has improved ($R = 0,456 > R = 0,361$).

The results of the Bootstrap procedure validate the significance of the relationship with a t-statistic of (3173 > 1,96). Affective commitment moderates the relationship between HRIS usage and HR staff innovation capacity. The relationship is strong when affective commitment is strong. Therefore, hypothesis 2 is retained. Another contribution is to highlight the role of employees’ affective commitment. In fact, sharing the company’s vision and involving employees in discussing the strategy and the future of the company helps to develop employees’ commitment. Affective commitment in an HRIS project enhances employees’ innovation capacity as they seek to bring new creative ideas to their organization.

5. Discussion

In an environment that is becoming increasingly uncertain, creativity is the right way to survive and stay competitive in the domestic and international markets. To achieve this goal, managers should invest in new technologies and move towards integrated information systems such as ERP. Our study first examines the nature of the relationship between HRIS usage and HR staff innovation capacity. Then, it measures a moderating effect in this relationship. Our results indicate that using the different HRIS applications and features tends to foster the development of HR employees’ innovation capacity. First, the interviewed HR employees claimed that everyday use of HRIS applications could enhance their creativity. This is in line with the results of Gordon et al. (2008); Kalyar (2012) and Qutaishat et al. (2012). Last, the data collected from the survey proves that affective commitment moderates the relationship between HRIS usage and HR employees’ innovation capacity. This result supports those of Khan (2011). They found that employees’ commitment allows for expanding and increasing their creativity and satisfaction. Indeed, employees’ affective commitment encourages the individual to flourish, to bring new creative ideas and to tap on their individual knowledge for the good of the organization.

This study enriches other studies that examined information systems with the presence of a moderating variable. SMEs such as Tunisian firms can indeed invest in these sophisticated information systems to grow. In fact, an HRIS project in the Tunisian

Table 3
Cronbach's Alpha and correlations.

	Cronbach Alpha	Innovation capability	Affective commitment	HRIS usage
Innovation capability	0.905	1.000		
Affective commitment	0.814	0.195	1.000	
HRIS usage	0.747	0.576	0.042	1.000

Table 4
PLS results before including affective commitment.

	Statistic t	R Square	β
HRIS usage -> Innovation capability	7917	0,361	0,569

Table 5
PLS results after including affective commitment.

	t-Statistic	R Square
HRIS usage -> Innovation capability	5184	0,456
HRIS usage* Affective commitment -> Innovation capability	3173	

context, as suggested by our results, not only facilitates work in the HR department but also develops employees' individual innovation capacity. In order to optimize employees' creativity, it is important and required to highlight the role of affective commitment in the process. A committed employee brings new creative ideas and improves one's work. The combination of affective commitment and HRIS use further enhances the creativity of the organization.

Managers are required to convince employees of the utility of the use of HRIS. Investment in HRIS is a project that requires a reorganization of the company. Among the employees, there are always those who refuse to abandon the old methods. This resistance to change can be mitigated by the affective commitment of employees. Our results can serve HR managers in their efforts to develop their companies. An HRIS project cannot only facilitate the work in the HR department but also contributes to the development of staff innovation capacity and improves service quality. Our results could help managers visualize the benefits of implementing an HRIS project. Indeed, a careful implementation should be pursued and programmed to succeed and to achieve the objectives already set. In fact, HRIS simplifies the HR function, automates administrative tasks, eliminates duplicate tasks, reduces costs, and improves service quality.

In a similar vein, [Lengnick-Hall and Steve \(2003\)](#) point out that e-HR, the different information systems and information and communication technologies applied to human resources management have the potential to affect the effectiveness and efficiency of this function. From a management point of view, this study may encourage managers to implement human resources information systems

given their contributions to the company. Its ease of use and appropriation will contribute to increasing the individual productivity of employees, improving their capacity for innovation and improving service quality. Management practices that favor the development of employees' commitment, involvement and organizational skills will help reach the results already mentioned. Managers are expected to consider the affective commitment of employees when using HRIS. In fact, the ability to innovate is better when HRIS use is combined with affective commitment of employees. Affective commitment reduces resistance to change by employees. This resistance is often recognized as a failure source for ERP projects.

Our results are not only meant for managers and consultants, but also for employees who want to accumulate tacit knowledge and improve their work. Although it advanced some interesting insights, our study is not without limitations. First, sample size is relatively small, only 42 participants. Another limitation relates to some statements in our questionnaire. These statements probed the respondents on their activity sector, age, academic level and position held in the company. The data collected from these statements was used only in the exploratory analysis (the descriptive statistics of the sample). Future studies should take into account these standard data to determine whether they affect the contribution of respondents. Future studies would be able to comprehensively determine the relationship between human resources information systems (HRIS) and individual employee productivity or the relationship between HRIS and the quality of human resources service, or the relationship between HRIS and these two variables at the same time.

Future research can also test our model in different contexts to check that these results remain valid across cultural contexts. This study can also be replicated as a detailed qualitative case study or in several case studies in which HRIS will be closely examined and where our results can be compared.

It is also important to check whether organizational citizenship behavior (OCB) is able to affect the relationship between HRIS usage and employee innovation capacity. Finally, it is possible to test the effect of demographic variables as moderators.

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Appendix 1 Variable measurement items

Constructs	Items	Auteur (s)
Employees' innovation capability	<ul style="list-style-type: none"> • The use of HRIS allowed me to improve my level of creativity in work • Using the HRIS has allowed you to experiment with new approaches when carrying out my work • The continued use of the HRIS has allowed me to increase my level inventive way to bring new solutions in case of emergence of problems 	Ganesan & Weitz, 1996 Coelho et al., 2011
HRIS usage (frequency of use)	<ul style="list-style-type: none"> • Payroll • Personnel administration • Time and labor management • e- recruitment • compensation and benefits administration • e-performance evaluation • e-training and development 	Ruel & Kaap, 2012 Straub et al., 1995

Affective commitment

- The degree of my pride in being part of this organization is:
- The degree of resemblance of my own values and those of the organization is:
- The feeling of shared problems of my company and my own problems is:
- My sense of belonging to my organization is

Allen and Meyer (1990)

References

- Abdolvand, N., Albadvi, A., & Ferdowsi, Z. (2008). Assessing readiness for business process reengineering. *Business Process Management Journal*, 14, 497–511.
- Akinoyemi, B. (2012). The influence of affective commitment on citizenship behavior and intention to quit among commercial banks' employees in Nigeria. *Journal of Management and Sustainability*, 2(2), 54.
- Allen, N. J., & Meyer, J. P. (1990). The measurement and antecedents of affective, continuance and normative commitment to the organization. *Journal of Occupational Psychology*, 63, 1–18.
- Allen, N. J., & Meyer, J. P. (1996). Affective, continuance, and normative commitment to the organization. *Journal of Vocational Behavior*, 49, 252–276.
- Becker, G. S. (2002). The age of human capital. *Education in the Twenty-First Century*, 3–8.
- Ben Moussa, N. (2018). The contribution of job satisfaction, organizational climate and employee commitment on management innovation in Tunisian SMEs: The effect of the post-revolution environment. *Economics Bulletin*, 38(4), 2167–2183.
- Bhavsar, A. (2011). A conceptual paper on human resource information system (HRIS). *Golden Resrach Thoughts*, 1(5), 1–4.
- Bidan, M. (2010). Systèmes d'information et développement durable : Modèles théoriques et pratiques organisationnels. *Revue Management & Avenir*, 39, 304–306.
- Borjesson, S., Elmquist, M., & Hooge, S. (2014). The challenges of innovation capability building: Learning from longitudinal studies of innovation efforts at Renault and Volvo Cars. *Journal of Engineering and Technology Management*, 31(1), 120–140.
- Chakraborty, A. R., & Abu Mansour, N. (2013). Adoption of human resource information system: A theoretical analysis. *Social and Behavioral Sciences*, 75, 473–478.
- Chandra, R. (2009). Role of HRIS in improving modern HR operations. *Advances in management*, 2(12), 21–24.
- Chin, W., Marcolin, B., & Newsted, P. (1996). A partial least squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and voice mail emotion/adoption study. In *Proceeding of the Seventeenth International Conference on Information Systems*.
- Coeelho, F., Augusto, M., & Lages, L. (2011). Contextual factors and the creativity of frontline employees: The mediating effects of role stress and intrinsic motivation on economy and finance organization in Tehran. *Journal of Retailing*, 87.
- Davenport, T. H. (1998). Putting the enterprise into the enterprise system. *Harvard Business Review*, (July–August), 121–131.
- De Sousa, F., Pellissier, R., & Monteiro, I. (2012). Creativity, innovation and collaborative organizations. *The International Journal of Organization Innovation*, 5.
- Ernst, H., Kahle, H. N., Dubiel, A., Prabhu, J., & Subramaniam, M. (2015). The antecedents and consequences of affordable value innovations for emerging markets. *The Journal of Product Innovation Management*, 32, 65–79.
- Fernandez, S., & Moldogaziev, T. (2011). Empowering public sector employees to improve performance: Does it work? *The American Review of Public Administration*, 41, 23–47.
- Ganesan, S., & Weitz, B. A. (1996). The impact of staffing policies on retail buyer job attitudes and behaviors. *Journal of Retailing*, 72(1), 31–56.
- Gordon, S., Tarafdar, M., Cook, R., Maksimoski, R., & Rogowitz, B. (2008). Improving the front end of innovation with information technology. *Research Technology Management*, 51(May–June (3)), 50–58.
- Gruman, J. A., & Saks, A. M. (2011). Performance management and employee engagement. *Human Resource Management Review*, 21, 123–136.
- Gutiérrez, R., & Vernis, A. (2016). Innovations to serve low-income citizens: When corporations leave their comfort zones. *Long Range Planning*, 49, 283–297.
- Hendricks, L. (2002). How important is human capital for development? Evidence from immigrant earnings. *The American Economic Review*, 92(1), 198–219.
- Hosnavi, R., & Ramezan, M. (2010). Measuring the effectiveness of a human resource information system in National Iranian Oil Company an empirical assessment. *Education Business and Society Contemporary Middle Eastern Issues*, 3(1).
- Iqbal, A. (2011). Creativity and innovation in Saudi Arabia: An overview. *Innovation Management Policy & Practice*, 13(3), 376–390.
- Jaros, S., Jermier, J., Koehler, J., & Sincich, T. (1993). Effects of continuance, affective, and moral commitment on the withdrawal process: An evaluation of eight structural equation models. *The Academy of Management Journal*, 36, 951–995.
- Kalyar, M. (2012). Creativity, self-leadership and individual innovation. *The Journal of Commerce*, 3.
- Khan, T. I. (2011). Job involvement as predictor of employee commitment: Evidence from Pakistan. *International Journal of Business and Management*, 6(4).
- Kmieciak, R., Michna, A., & Meczynska, A. (2012). Innovativeness, empowerment and IT capability: Evidence from SMEs. *Industrial Management & Data Systems*, 112(5), 707–728.
- Lacroux, A. (2010). *L'analyse des modèles de relations structurelles par la méthode PLS : Une approche émergente dans la recherche quantitative en GRH*. Toulouse: XX^{ème} congrès de l'AGRH.
- Laval, F., & Diallo, T. (2007). L'e-RH : Un processus de modernisation de la gestion des ressources Humaines à la mairie de Paris. *Revue Management & Avenir*, 13.
- Lengnick-Hall, M. L., & Steve, M. (2003). The impact of e-HR on the human resource management function. *Journal of Labor Research*, 24(3), 365–379.
- Lewis, T., & Wright, G. (2012). How does creativity complement today's currency of innovation? *Journal of Strategic Innovation and Sustainability*, 7.
- Madhuchanda, M., & Tripathy, S. K. (2009). HRIS of Indian Scenario: Case study of large organizations. *South Asian Journal of management*, 16(2), 137–168.
- Markus, M. L., Axline, S., Petrie, D., & Tanis, S. C. (2000). Learning from adopters' experiences with ERP: Problems encountered and success achieved. *Journal of Information Technology*, 15, 245–265.
- Mercurio, Z. A. (2015). Affective commitment as a core essence of organizational commitment an integrative literature review. *Human Resource Development Review*, 14(4), 389–414.
- Meyer, J. P., & Allen, N. J. (1991). A three-component conceptualization of organizational commitment. *Human Resource Management Review*, 78(1), 61–89. [http://dx.doi.org/10.1016/1053-4822\(91\)90011-Z](http://dx.doi.org/10.1016/1053-4822(91)90011-Z)
- Meyer, J. P., & Herscovitch, L. (2001). Commitment in the workplace: Toward a general model. *Human Resources Management Review*, 11, 299–326.
- Moises, M., Casadesús, M., & Petnji, L. H. (2016). The impact of standardized innovation management systems on innovation capability and business performance: An empirical study. *Journal of Engineering Technology*, 41, 26–44.
- Nadeem, M. (2010). Role of training in determining the employee corporate behavior with respect to organizational productivity: Developing and proposing a conceptual model. *International Journal of Business and Management*, 5(12).
- Namasivayam, K., & Denizci, B. (2006). Human capital in service organizations: Identifying value drivers. *Journal of Intellectual Capital*, 7(3), 381–393.
- Ngai, E., Law, C., Chan, S., & Wat, F. (2008). Importance of the internet to human resource practitioners in Hong Kong. *Personnel Review*, 37(1).
- Nordhaug, O. (1993). *Human capital in organizations: Competence, training and learning*. Oslo, Norway: Scandinavian University Press Publication.
- Oldham, G., & Da Silva, N. (2013). The impact of digital technology on the generation and implementation of creative ideas in the workplace. *Computers in Human Behavior*, 42, 5–11, in press.
- Popa, S., Soto-Acosta, P., & Martinez-Conesa, I. (2017). Antecedents, moderators, and outcomes of innovation climate and open innovation: An empirical study in SMEs. *Technological Forecasting and Social Change*, 118, 134–142.
- Purvis, R. L., Sambamurthy, V., & Zmud, R. W. (2001). The assimilation of knowledge platforms in organizations: An empirical investigation. *Organization Science*, 12(2), 117–135.
- Qutaishat, F., Khattab, S., Abuzaid, M., & Al-Manasra, A. (2012). The effect of ERP successful implementation on employees' productivity, service quality and innovation: An empirical study in telecommunication sector in Jordan. *International Journal of Business and Management*, 7(19).
- Rangriz, H., Mehrabi, J., & Azadegan, A. (2011). The impact of human resource information system on strategic decisions in Iran. *Computer and Information Science*, 4(2), 81–87.
- Razali, Z., & Nehari, A. (2011). Can functional performances of HRM be improved with the adoption of IT? *The Business Review Cambridge*, 18.
- Reddick, C. (2009). Human resources information systems in Texas City governments: Scope and perception of its effectiveness. *Public Personnel Management*, 38(4).
- Reinhardt, R., Gurtner, S., & Griffin, A. (2018). Towards an adaptive framework of low-end innovation capability. A systematic review and multiple case study Analysis. *Long Range Planning*, 51(5), 770–796. <http://dx.doi.org/10.1016/j.lrp.2018.01.004>
- Reix, R. (2004). *Systèmes d'information et management des organisations (5^{ème} édition)*. Paris: Vuibert.
- Ringle, C. M., Wende, S., & Becker, J.-M. (2015). *Smartpls 3*. Boenningstedt: Smartpls GmbH. <http://www.smartpls.com>
- Rubera, G., & Kirca, A. (2012). Firm innovativeness and its performance outcomes: A metanalytic review and theoretical integration. *Journal of Marketing*, 76(3), 130–147.
- Ruel, H., & Kaap, H. (2012). E-HRM usage and value creation. Does a facilitating context matter? *German Journal of Research in Human Resource Management*, 26(3).
- Sadiq, U., Khan, A., & Ikhtlaq, K. (2012). The impact of information systems on the performance of human resources department. *Journal of Business Studies Quarterly*, 3.
- Schneider, L., Günther, J., & Brandenburg, B. (2010). Innovation and skills from a sectoral perspective: A linked employer–Employee analysis. *Economics of Innovation and New Technology*, 19(2), 185–202.
- Shao, Z., Feng, Y., & Liu, L. (2012). The mediating effect of organizational culture and knowledge sharing on transformational leadership and Enterprise Resource Planning systems success: An empirical study in China. *Computers in Human Behavior*, 28(6), 2400–2413.
- Sheldon, M. E. (1971). Investments and involvements as mechanisms producing commitment to the organization. *Administrative Science Quarterly*, 16(2), 143–150. <http://dx.doi.org/10.2307/2391824>

- Soto-Acosta, P., Popa, S., & Palacios-Marqués, D. (2016). Social web knowledge sharing and innovation performance in knowledge-intensive manufacturing SMEs. *The Journal of Technology Transfer*, 40(4), 581–601.
- Story, V. M., Boso, N., & Cadogan, J. W. (2015). The form of relationship between firm-level product innovativeness and new product performance in developed and emerging markets. *The Journal of Product Innovation Management*, 32, 45–64.
- Straub, D., Limayem, M., & Karahanna-Evaisto, E. (1995). Measuring system usage: Implications for IS theory testing. *Management Science*, 41(8), 1328–1342.
- Tixier, J. (2004). Les relations filiales-maisons mère au sein d'une firme multinationale : Le système d'information des ressources humaines (SIRH) comme outil d'intégration. In *Thèse de doctorat en sciences de gestion*.
- Trkman, P. (2010). The critical success factors of business process management. *International Journal of Information Management*, 30, 125–134.
- Vom Brocke, J., Zelt, S., & Schmiedel, T. (2016). On the role of context in business process management. *International Journal of Information Management*, 36, 486–495.
- Wang, C., Tsai, H., & Tsai, T. (2014). Linking transformational leadership and employee creativity in the hospitality industry: The influences of creative role identity, creative self-efficacy, and job complexity. *Tourism Management*, 40.
- Weatherly, L. A. (2003). *Human capital—The elusive asset measuring and managing human capital: A strategic imperative for HR*. *Research Quarterly March*. Retrieved June 1, 2003, from <http://www.shrm.org/research/quarterly/0301capital.pdf>
- Wu, L.-Y., & Wang, C.-J. (2007). Transforming resources to improve performance of technology-based firms: A taiwanese empirical study. *Journal of Engineering and Technology Management*, 24, 251–261.
- Xu, Z., Lin, J., & Lin, D. (2008). Networking and innovation in SMEs: Evidence from Guangdong province, China. *Journal of Small Business and Enterprise Development*, 15(4), 788–801.
- Yesil, S., & Sozibilir, F. (2013). An empirical investigation into the impact of personality on individual innovation behaviour in the workplace. *Procedia - Social and Behavioral Sciences*, 81.