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The Role of HRIS in gaining a Competitive Advantage

The case study of telecommunication industry in Egypt

Tarek Mohamed Ali*

Abstract

The present research aims to examine the relationship between features of the Human resource information system (hereinafter HRIS) and gaining the competitive advantage (hereinafter CA). The research adds new insight to the current HRIS/CA literature through emphasizing how HRIS characteristics help gaining CA. For achieving the research purpose, data was collected about HRIS features and the gained CA using structured questionnaire that is conducted with (110) HR professionals, (21) IT technicians and (124) sales managers working in the Egyptian Company for mobile service. The results showed that HRIS features of database network, comprehensiveness and integration have the highest impact on the effectiveness of the transformational HRM practices, which explains the HRIS/CA positive relationship. On the practical side, the suggested HRIS model guides the practitioners in the telecommunications industry to implement the desired modifications in HRIS characteristics to compete in the Egyptian telecommunications market.

Keywords: Human resource information system; Competitive advantage; telecommunication industry

1. Introduction

The competitive advantage (hereinafter CA) has been widely known as “a firms’ superior performance in a competitive market conditions” (Lau 2002: P. 125). The drivers of the CA became a focal point of ongoing debate in the HR literature (Pahuja & Ramesh, 2012; Adner & Zemsky, 2006; Elliott,

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2003; El-Zahrany, 2012; Noe et al., 2000). To obtain and maintain a competitive advantage in the marketplace, organizations need to set a distinctive plan to manage their physical and human resources (Mohan et al. 2012). However, innovative employees provide a sustained competitive advantage because unlike physical resources, such intellectual capital is difficult to be imitated by competitors (Greer, 1995). Hence, managing the human resource efficiently has been considered the most critical driver for the competitive advantage (Porter, 1990)

Upon this, HR scholars introduced different approaches to understand the human resource management impact on gaining a CA. Here, the Human resource information system (hereinafter HRIS) had been introduced to the HRM literature referring to “an integrated system used to collect, store, analyze, retrieve, distribute and connect information regarding an organization’s human resources” (Hendrickson, 2003, P.13). On this context, the HR literature distinguished two types of HRM practices namely *transactional* focusing on day-to-day routine HR transactions, and *transformational* focusing on bridging the performance gap between HR desired and actual performance (Kavanagh et al. 1990; Mohan et al. 2012). Most HR departments spend approximately 65% to 75% of work time on transactional practices, and 25% to 35% on transformational practices (Wright et al. 1998). However, gaining a competitive advantage in a dynamic business environment requires HR practitioners to actualize their activities on strategic basis for achieving an effective alignment between an organization strategy and the HR strategy (Kariznoee et al. 2012). This in turn requires paying much more time and effort in performing transformational rather than transactional HRM practices. Building upon this, the HRIS as a combination between information technology and human resource management could successfully accelerate the transactional HR practices and facilitate the transformational ones (Gardner et al. 2003; Hussain et al. 2007).

2. Research problem (research gap)

In HRM literature, most research topics concerning the HRIS/CA relationship are oriented toward answering the main question of “What are HRIS features that facilitate gaining the CA”. They emphasize particular

HRIS features such as computer hardware and associated software (Alter, (2002), related electronic HR forms and templates (Parry, 2009), database networks (Gardner et al. 2003) and expertise team (Florkowski & Lujan, 2006). Most of these research topics focus mainly on the HRIS features that help gaining particular competitive advantages such as decreasing costs and wastes (Gurol et al. 2010 and Beadles et al. 2005); achieving operational excellence and developing new products and process (Chui & Fleming, 2011); improving decision making efficiency and effectiveness (Manyika 2009).

The present research instead goes beyond answering the traditional question of “What are HRIS features that help a company gain a competitive advantage?” to “How can HRIS help a company gain a wide range of competitive advantages?” through answering the following sub-questions:

- 2.1. To which extend the Egyptian mobile services Companies apply effective HRIS (hardware, software, database network, system integration and technical support services)
- 2.2. What is the degree to which the Egyptian mobile service Companies competes in the Egyptian telecom market considering competitive advantages of (cost leadership, product differentiation and innovation)?
- 2.4. How can the HRIS of the Egyptian mobile service Companies help gain a wide range CAs in the Egyptian telecom market?

3. Research objectives

The present research aims to *Measure, analyze and determine* the present situation characterizing the Egyptian mobile services Companies in terms of its HRIS characteristics, HRM practices and the gained CA in the Egyptian telecom market.

4. Research Importance

Attempts are made through the present research to bridge the gap in the current literature concerning the HRIS/CA relationship, whereas, most of

existing studies have focused mainly on the direct linkage between the two variables emphasizing HRIS characteristics generating particular competitive advantages (Gurol et al. 2010; Beadles et al. 2005; Chui & Fleming, 2011; Manyika 2009). Instead, the present research enriches the current literatures by explaining how different HRIS characteristics may affect gaining a CA through accelerating and enhancing HRM transactional and transformational practices, which has not been discussed exclusively, yet by the current literature.

Despite evidence of increasing the use of HRIS by various firms, most of the existing empirical studies have been conducted in developed countries (Ball, 2001; Barron et al. 2004; Beadles et al., 2005; Hussain et al. 2007; Ngai & Wat, 2006; Stone et al., 2006). Unfortunately, the results of these studies have been very little implemented to the developing countries especially the Arabian countries (Seyal et. al., 2000). Upon this, the present research empirical implications guide the practitioners in telecommunication industry to design or redesign their HRIS components and reviewing their HRM practices for the purpose of obtaining and maintaining a competitive advantage in the telecom market.

5. Reviewing literatures

This section discusses ongoing debate in the current literature regarding the interrelationships among research variables. The research conceptual framework is then determined.

5.1. The relationship between HRIS and HRM practices

The review of HRIS/HRM literature stress the HRIS role in fostering transactional practices (Gardner et al., 2003), facilitating HR professionals' role as strategic partners (Hussain et al. 2007), ease cooperation between HR professions and line managers (Florkowski and Lujan, 2006), and enhancing HRM effectiveness (Haines and Lafleur, 2008; Mishra and Akman, 2010). In this context, Hussain et al. (2007) investigate the impact of HRIS on HR professionals. They survey HR professionals in 450 organizations in UK by questionnaires and 11 senior executives by in-depth semi-structured interviews. The results show that the application of HRIS enhances the

strategy partner role of HR professionals. Florkowski and Lujan (2006) examined the impact of HRIS on HRM practices in US, Canadian, UK and Irish organizations. The senior HR executives of 1,400 companies are invited to attend the research and in total 216 valid responses are obtained. The study finds out that HRIS enables HR professionals to dispatch routine transactional HR duties to line managers and employees by providing electronic HR forms that can be easily accessible and processed by line managers and employees which gives them the freedom to access the work-related information and provides effective delivery of HR services. Correspondingly, Gardner et al., (2003) mail surveys to 1814 HR executives and get 455 completed surveys. The results indicate that the more use of HRIS, the greater reduce HR routine work and allow better information communication and autonomy, which leads to fundamental change in the nature of HR professionals' work. Haines and Lafleur (2008) examine the possible influence of HRIS on the HRM effectiveness. They send mail survey to 1556 senior HR executives of leading Canadian corporations, The results reveal that the automation of HRIS is the best way to improve the HRM effectiveness through enabling HR professionals to manage large amount of information with great accuracy. Mishra and Akman, (2010), address the mechanism by which HRIS affect HRM practices focusing on HRIS instruments (E-forms) that facilitate integrating and transmitting information about HRM activities among all organizational levels. They provide example of how HRIS supports HR planning with information about supply and demand forecasts, staffing with information about applicant qualifications, and development with information about training program costs and trainee work performance. It can also support compensation programs, salary forecasts, pay budgets activities.

According to the above discussion concerning HRIS/HRM, we conclude that there is a positive significant relationship between HRIS characteristics and HRM practices.

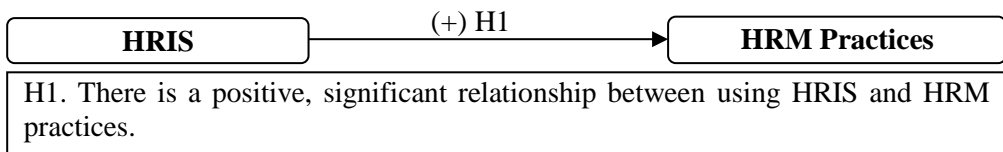


Figure 1: the proposed relationship between HRIS and HRM practices

5.2. HRM practices and gaining a competitive advantage

Even if there are different attempts to clarify the relationship between HRM practices and gaining a sustained competitive advantage, “best practices” and “best fit” remain the most popular adopted approaches (Purcell, 1999). According to the best practices approach, a competitive advantage can be obtained through the best 16 HR practices (Pfeffer, 1994; 1995). This was later refined to the seven practices of Employment security; Selective hiring; Self-managed teamwork; High pay contingent on company performance; Extensive training; Reduction of status differences; Sharing information (Pfeffer, 1998). The “best-fit” approach has been emerged referring to “the importance of making sure that the HR strategies are suitable to the different circumstances of the entire organization, together with culture, operational processes as well as external environment” (Armstrong 2006, p. 138). Thus, HRM practices leading to sustained competitive advantage must be consistent with each other (horizontal fit) and linked to the strategic needs of the business (vertical fit) as well as with particular aspects of the external environment (external fit) (Fisher et al, 2003, P 60-61).

Upon this, large number of studies concerns examining the relationship between HRM practices and gaining a competitive advantage in different fields. Some of these studies concern the pattern of HRM practices responsible for obtaining the sustained competitive advantage in IT, banking, and manufacturing organizations. Results of these studies showed the privilege of HRM practices of career-oriented training, competence-based performance appraisal, and performance-oriented training (Birasnav & Rangnekar, 2009); Employer-Employee Relations and Culture building (Saxena and Tiwari, 2009) or employee participation, empowerment and effective communication system (Pahuja and Chander, 2012). Still other studies concern the pattern of competitive advantage gained through the HRM practices in private and public organizations. Results of these studies revealed the dominant of competitive advantages of organization’s market value (Laursen and Foss, 2003); cost leadership (El-Zahrany, 2012); productivity (Huselid, 1995); product differentiation (Das and Joshi, 2007); shareholders returns (Arcand et al. 2002); or organization effectiveness and job performance (Atteya, 2012; Laursen and Foss, 2003; Delaney and Huselid, 1996).

Accordingly, we would expect HRM practices to be positively related to gain a competitive advantage, which helps developing the second research hypothesis:

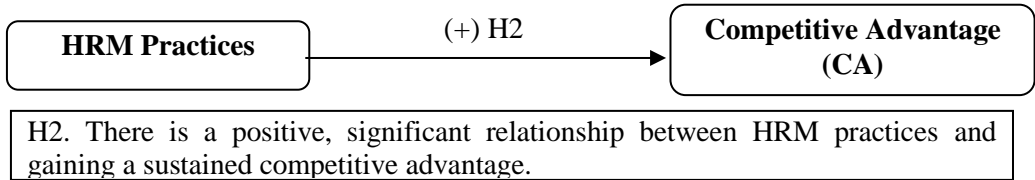


Figure 2: the proposed relationship between HRM practices and a sustained competitive advantage

5.3. HRIS Features and gaining a CA relationship

The literature concerning the relationship between HRIS features and gaining a competitive advantage claims that an effective HRIS helps organizations to gain a sustained competitive advantages through decreasing costs and wastes (Gurol et al. 2010 and Beadles et al. 2005); achieving operational excellence and developing new products and process (Chui & Fleming, 2011); improving decision making efficiency and effectiveness (Manyika 2009).

As Mohan et al. (2012) states “decreasing costs of computer technology versus the increasing costs of employee compensation and benefits made acquisition of computer-based HR systems a necessary business decision” (p.9). Here, Booth et al. (2011), show that qualified HRIS fundamentally shifts the cost of doing business or reduce the costs of business processes through avoiding non-value-added process and finding new ways to perform jobs more efficiently. In the empirical domain, Gurol et al. (2010) and Beadles et al. (2005) report the significant positive relationship between HRIS characteristics and middle managers capabilities to make an effective decision when redesigning work process and assigning tasks to employees which reduce the cycle time of processes. They stressed that fewer people in the loop usually mean greater efficiency more productivity, profitability and lowered cost per transaction. In competitive advantage literature, this is compatible with the cost reduction and waste reduction advantages of Stahl and Grigsby (1997). On the other hand, Chui & Fleming (2011) have shown

that an effective HRIS helps identifying and creating (or assist in creating) new products and services or to radically change business processes via automation. They argued that high automated HRIS enables employees to continue to expect more data and more accessibility than ever before. Likewise, Manyika (2009) argued that HRIS with well integrated database network enables employees to manage more data and use the systems to answer questions and make decisions. They will begin to ask new questions and seek broader information. In competitive advantage literature, this fits the concept of firm innovation introduced by Lumpkin and Dess (1996).

According to the above discussion regarding research variables and their relationships, we can draw the research conceptual framework.

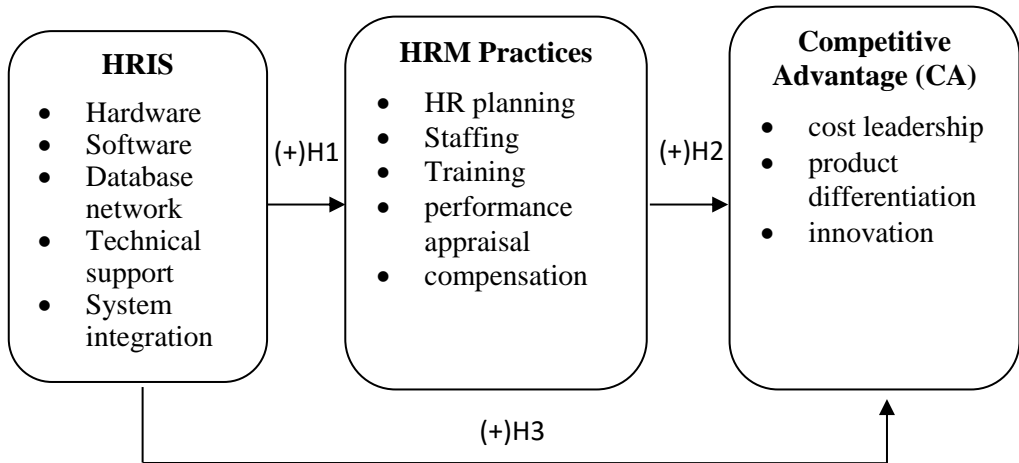


Figure 3: The research conceptual framework

6. Research variables and measures

6.1. Human Resources Information Systems

The human resources information system (HRIS) measure consists of 17 items that included respectively possessed hardware (3 items), software (4 items), database network (3 items), technical support team (4 items), and system integration (3 items). All items were adapted from El-Zahrany (2012). Here, IT staff has to respond to the 17 items to assess the company's HRIS

features using a simple 5 points scale that ranges from strongly disagree (1) to strongly agree (5). The high score means high HRIS characteristics. In (El-Zahrany, 2012), the HRIS measure records an overall average Cronbach Alpha of (0.87) distributed to 5 basic dimensions of hardware (0.92), software (0.86), database network (0.90), technical support team (0.79), and system integration (0.83).

6.2. The Competitive advantages

The competitive advantage (CA) measure consists of 15 items that included respectively cost leadership (5 items), product differentiation (4 items), and innovation (6 items). All items were adapted from Vinayan, (2012). Here, sales managers have to respond to the 15 items to rate the company's competitive advantages achieved in the market using a simple 5 points scale that ranges from ranging from (5) very high, to (1) very low, whereas, the higher the score, the higher achieved CA. In (Vinayan, 2012), the CA measure demonstrates high internal consistency reliability while it records an overall average Cronbach Alpha of (0.867) distributed to the 3 basic dimensions of cost leadership (0.881), product differentiation (0.86), and innovation (0.86).

6.3. HRM practices

HRM practices measure consists of 15 items that include respectively human resource planning (3 items), recruitment (3 items), reward system (3 items), performance appraisal (3 items), and training (3 items). All items were adapted from Argawala (2003). HR staff responds to all items to rate their agreement regarding the characteristics of HRM practices using a simple 5 points scale that ranges from strongly disagree (1) to strongly agree (5). In (Tan & Nasurdin, 2011), the HRM practices measure recorded high overall average Cronbach Alpha of (0.872) for all 5 dimensions distributed to the 5 basic dimensions of human resource planning (0.91), recruitment (0.82), reward system (0.87), performance appraisal (0.87), and training (0.89).

7. Research population, data collection & analysis

The present research population consists of 298 staff members working in

the Egyptian Company for mobile services whom are classified into different occupations as in table (1).

Table (1): the classification of research population

Positions / titles	Population No	Respondents No	Return %
HRM specialists & managers	122	110	90.2
IT technicians & managers	26	21	80.8
Sales Managers	150	124	82.7
Total	298	255	84.6

Source: HRM documents of the Egyptian Company for mobile services

Data was collected about the company's HRIS characteristics and the gained CA on complete census-base through a structured e-mailed questionnaire that was translated into Arabic and modified to suit the telecommunication industry. Upon this, the HRM practices questionnaire had been conducted with HR team that consists of (122) members. The team includes (1) head department and (5) managers of compensation, training, staffing, HR planning and appraisal divisions that contain a total of (113) HR specialists and coordinators. This is in addition to (3) HR partners within financial, commercial and technical departments. The HRIS questionnaire had been with the IT team that consists of (26) members. The team includes (1) head department, (3) managers of database network, hardware and software divisions that contain a total of (22) IT technicians.

Finally, collecting data about the company's CA gained during last year entails conducting the CA questionnaire with the (150) sales managers. Classification of sales team takes a cluster-base while (1) Head of sales department is directing (4) managers of distribution, retail, corporate and complementary divisions. Each division manager in turn is responsible for overseeing other lower level managers. Distribution division manager is overseeing (4) managers of wholesales, retails and key account who are supervising (80) team leaders located in (5) regions. Similarly retail division manager is overseeing (26) franchises and shops managers within (5) regions. Corporate division manager oversees (23) regional managers providing the company's services to SMEs and LEs within (5) regions.

Finally, complementary division manager is responsible for overseeing (12) van-store and door-to-door selling team leaders. Thus, total of 298 survey questionnaires was e-mailed to the represented respondents. The questionnaire e-mailing yielded 255 completed questionnaire returns, for a response rate of 84.6%.

Collected data had been revised, sorted, assorted and analyzed using SPSS statistical software package. While, testing the research hypotheses entailed implementing *Alpha scale* to test reliability of the research measure, *Descriptive statistical measures* based on percentages, means, standard deviations to describe the present situation of the represented company regarding the research variables; *Simple regression* and *Pearson correlation* analysis to test the significance and direction of the relationship between HRIS and CA, and finally, *Structure analysis* to test the relationship between HRIS and CA.

8. Research limitations

The present research has been conducted within the following limitations:

- 8.1. This study is focusing on the Egyptian Company for mobile services which has been considered one of three telecommunication companies competing in the Egyptian market. However, Egyptian Company is the oldest one while it founded in 1998. By the end of 2010, the Company was leading the Egyptian telecom market with share estimated by 40% (33.8 million subscribers), providing revenues of EGP (10.3) billion and covering more than 99.6 % of the Egyptian geographic areas. From 2011 until now, the Egyptian company is facing a dramatic slowdown in its market share to record less than 30 million subscribers by the end of December 2012. In an interview with the company's HR manager, she asserts that "the company nowadays is revising its HRM practices-based technology as part of the recovering strategy that would help to get the company back to the leadership position in telecom market". This makes Egyptian Company a typical case-study that is compatible with the present research purpose that highlights the impact of HRM practices on the relationship between holding HRIS and gaining a CA.

8.2. The present research had been conducted only with HR, IT and sales team members whom represent the best source of data collection regarding the company's HRIS characteristics, HRM practices and gained competitive advantage.

9. Data Analysis

Pearson correlation and descriptive statistical analysis had been employed to test the study variables.

Hypothesis 1: “There is a significant relationship between human resource information system characteristics and the human resources management (HRM) practices”. The results show significance, positive, strong relationship between HRIS and HRM practices at (0.01) significance level.

Simple regression analysis had been applied to ensure the HRIS/HRMP relations as in table (2).

Table (2): Simple regression analysis of the human resources management practices on the human resource information system characteristics.

variables predictor	Beta	B	R	R ²	Adj. R ²	T	F	Sig. F
HRM practices	0.63	0.71	0.63	0.40	0.34	2.59	2.66	0.02

HRIS features positively influences HRM practices ($F = 12.68$ at 0.05) and Beta is positive. The adjusted R² reveals that HRIS features explain 34% of variance in HRM practices. Those results are compatible with correlation analysis. So, the hypothesis would be accepted.

Hypothesis 2: “There is a positive significant relationship between the HRM practices and the competitive advantage achieved”. The results show significance, positive, strong relationship between the HRM practices and the CA achieved at (0.05) significance level. Simple regression analysis had been employed to ensure the HRMP/CA relations as in the next table.

Table (3): Simple regression analysis of the competitive advantage (CA) achieved on the human resources management practices.

variables predictor	Beta	B	R	R ²	Adj. R ²	T	F	Sig. F
CA	0.70	2.43	0.70	0.49	0.44	3.11	9.68	0.01

HRMP positively influence CA (F = 9.71 at 0.01) and Beta is positive. The adjusted R2 reveals that HRM practices explain 44% of variance in CA. Those results are compatible with correlation analysis. So, the hypothesis is accepted

Table (4): Descriptive statistics, Alpha Reliabilities, and Correlations among study variables

Variables	Mean	Std.	1	2	3
1. HRIS	3.02	0.17	(0.88)		
2. CA	3.48	0.65	*0.62	**0.70	(0.91)

Correlation is significant at **0.01 and *0.05 levels; Cronbach alpha reliabilities for observed variables are in parenthesis in the diagonal.

Hypothesis 3: “there is a positive significant relationship between human resource information system (HRIS) characteristics and the competitive advantage (CA) achieved”. The results show significance, positive, strong relationship (R= 0.62) between the HRIS and the CA at (0.05) significance level. Simple regression analysis had been also employed to ensure the HRIS/CA relations as in the next table.

Table (5): Simple regression analysis of the competitive advantage (CA) achieved on the human resource information system (HRIS) characteristics.

Variable predictor	Beta	B	R	R ²	Adj. R ²	T	F	Sig. F
CA	0.62	2.37	0.62	0.38	0.32	2.48	6.16	0.03

HRIS features positively influences CA (F = 2.66 at 0.02) and Beta is positive. The adjusted R2 reveals that HRIS features explain 32% of variance in CA. While those results are compatible with correlation analysis in next table, so, the hypothesis is accepted.

10. Findings discussion

The following paragraphs discuss and interpret briefly the present research results.

10.1. The research results - based on means (M) and standards deviations (Std.) - provide clear description of the current situation of the Egyptian company regarding its human resource information system (HRIS), human resource management (HRM) practices and gained competitive advantage (CA). In this context, HRIS of the Egyptian company possesses high hardware facilities (M=4.3; Std. =0.27), and moderate software and technical support facilities (M=3.7; 3.4 and Std. 0.24; 0.32). On contrary, it is inefficient in terms of data-base network and its ability to be integrated with HRM and other systems within the company (M=1.91; 1.83 and Std. =0.3; 0.25). On the other hand, the company's HRM practices of recruitment, compensation and performance appraisal are ranging from moderate to slightly strong (M=3.7; 3.6; 3.4 and Std. =0.2; 0.23; 0.3) respectively. Conversely, the HRM practices of human resource planning and training are unsatisfactory (M= 2.7; 2.75 and Std. = 0.41; 0.36). Finally, the Egyptian company CA is slightly above average in terms of cost leadership (M=3.4; Std. =0.57); product differentiation (M= 3.6; Std. =0.64) and innovation & creativity (M= 3.4; Std. =0.68).

10.2. The research results show positive, significant relationship between capabilities of the company's HRIS and gaining a CA (R=0.62 at sign. 0.05). This in turn agreed with results obtained by studies concerning HRIS/CA relations. These studies highlight the HRIS role in generating particular competitive advantages such as decreasing costs and wastes (Gurol et al. 2010 and Beadles et al. 2005); developing new products and process (Chui & Fleming, 2011) and innovation (Lumpkin and Dess (1996). In this context the present research argues the impact of HRIS on CA while adjusted R^2 reveals that HRIS explains 38% of variance in CA at sign. (0.03). Based on this, we conclude that HRIS features shape the company's CA.

- 10.3. The research result show also positive, significant relationship between the HRIS characteristics and HRM practices ($R= 0.63$ at sign. 0.05). This agreed with results obtained by studies concerning HRIS/HRM practices relations. These results stress the HRIS role in fostering transactional practices (Gardner et al., 2003), facilitating HR professionals' role as strategic partners (Hussain et al. 2007), ease cooperation between HR professions and line managers (Florkowski and Lujan, 2006), and enhancing HRM effectiveness (Haines and Lafleur, 2008; Mishra and Akman, 2010). In this context, the present study argues that the ability of an organization to foster its HRM practices depends heavily on the characteristics of its HRIS. While adjusted R^2 reveals that HRIS capabilities explain 40% of variance in HRM practices at sign. (0.02).
- 10.4. The research results show positive, significant relationship between the company's HRM practices and gaining CA ($R= 0.70$ at sign. 0.01). This agreed with studies concerning HRM practices/CA relation such as (Huselid, 1995; Das and Joshi, 2007; Arcand et al. 2002; Atteya, 2012; Laursen and Foss, 2003; Birasnav & Rangnekar, 2009; Saxena and Tiwari, 2009; Pahuja and Chander, 2012). In this context, the present study argued the impact of the HRM practices on gaining CA. While adjusted R^2 reveals that HRM practices explain 49% of variance in CA at sign. (0.01). Based on this, we infer that HRM practices are very essential for gaining a CA in the market.
- 10.5. Based on the above discussion, we infer that the HRIS capabilities explain directly 38% and 40% of the variances in HRM practices and gained CA respectively at significance (0.03; 0.02). On the other hand, the indirect relation between HRIS and CA after mediating the HRM practices shows that HRIS capabilities explain 54% of CA variances at significance (0.03). Results of the stepwise analysis reveal that the two steps of entering HRM practices to the HRIS/CA relations assert that the HRM practices mediation led to increasing the strength of the indirect relationship between the independent variable (HRIS) and the dependent variable (CA).

11. The Proposed HRIS Model

The model in hand offers opportunities to make information-based decisions responding swiftly to the market demand. This can be achieved through five HRM practices of job analysis, design, HR planning, recruitment & selection and compensating employees (see figure 6).

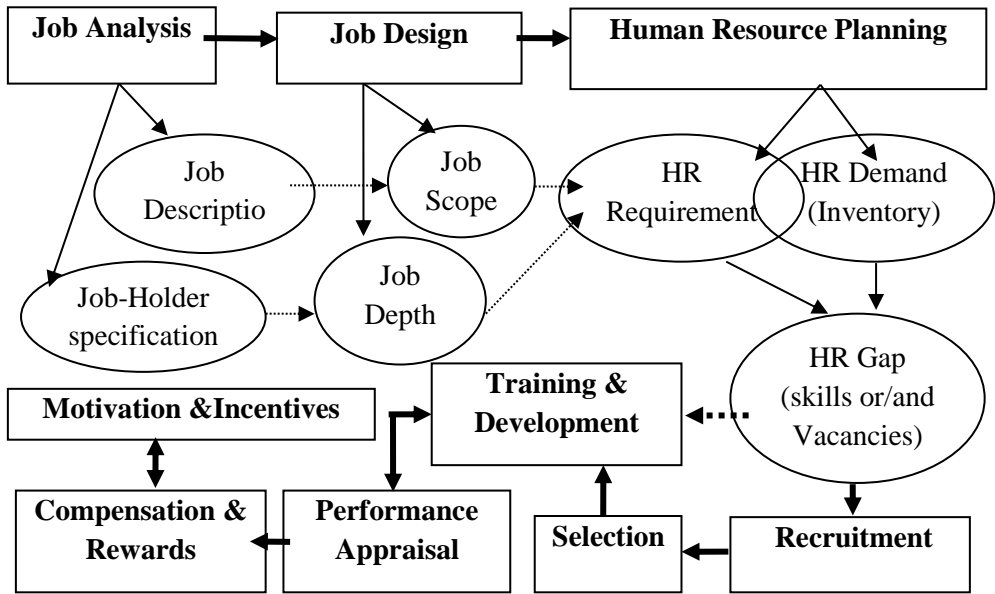


Figure 4: Core Functions of the HRIS Model

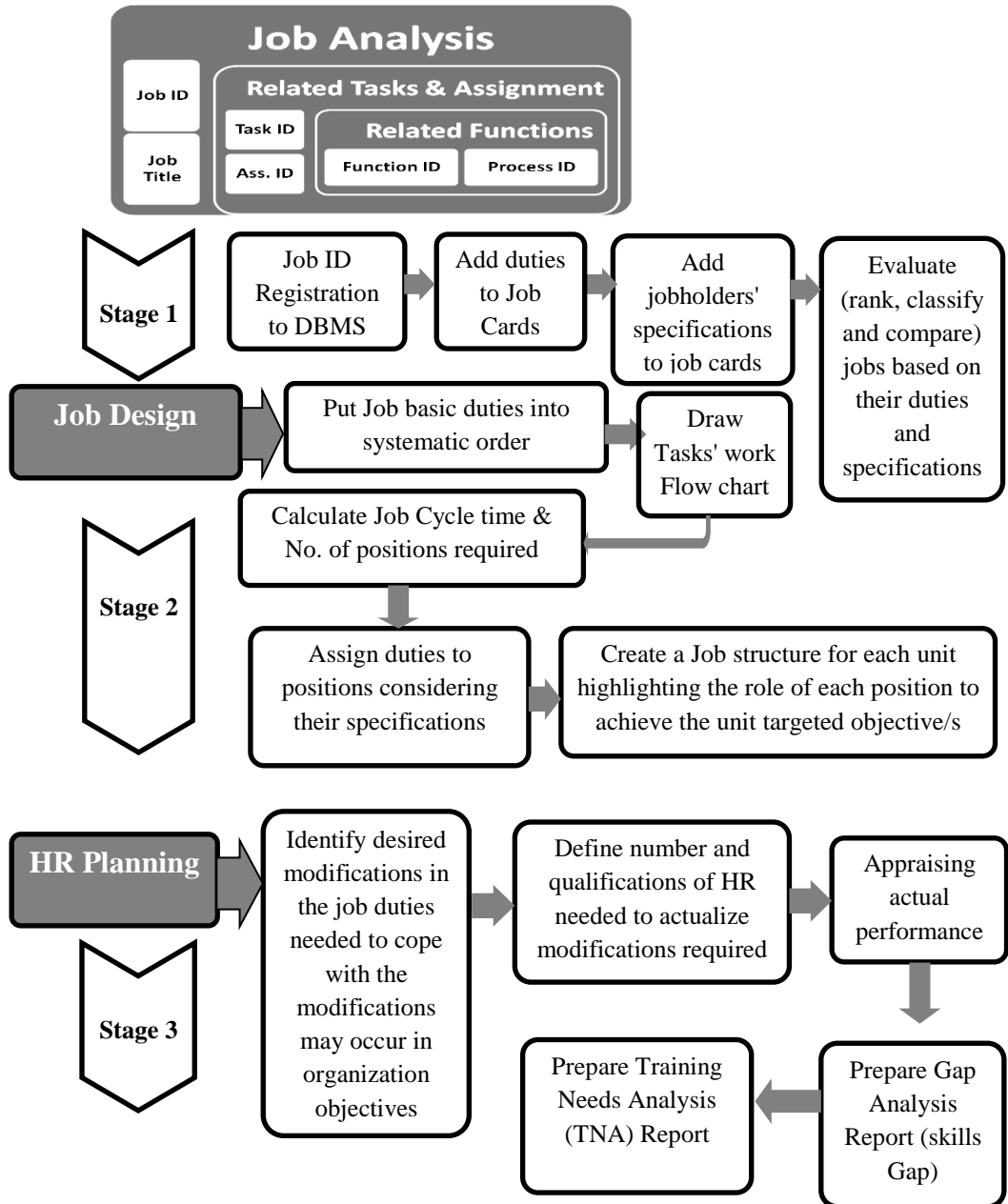


Figure 5: Stages Constituting HRIS Model (Stages 1–3)

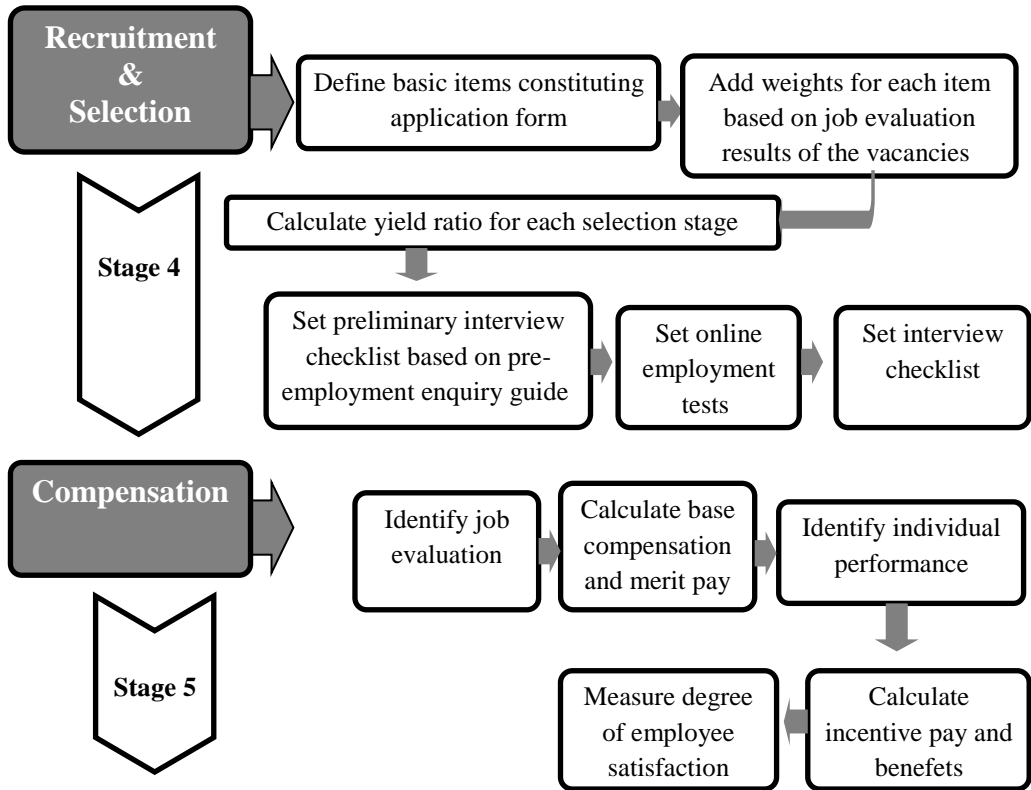


Figure 6: Stages Constituting HRIS Model (Stages 4&5)

According to the previous discussion about HRIS model stages, data needed to accomplish each stage has to be collected and analysed using various instruments. This in turn led to the emergence of a number of forms as illustrated in the next table.

Table 6: HRIS model Functions, data, Techniques and Outputs

HR Functions	Required Data	Data collection (instrument)	Outputs (form)
Job Analysis	<u>Job ID</u> <ul style="list-style-type: none"> job/position title code job family & occupation location in organization structure supervision span <u>Job content</u> <ul style="list-style-type: none"> job purpose core duties authorities <u>Jobholders specifications</u> <ul style="list-style-type: none"> personalities education skills experiences 	Position Description Questionnaire (PDQ) (Dessler, 2007) (Appendix 1) Factor Comparison system (FCS) (Armstrong et al., 2005) (Appendix 2)	Job / position Descriptive Card
Job Design	<ul style="list-style-type: none"> Duties ordering Estimated duties' time Job cycle time Number of employees needed to actualize job duties. 	Task Assignment Model (TAM) (Lee et al., 2007) (Appendix 3)	-Workflow Chart -Job Structure
HR Planning	<ul style="list-style-type: none"> HR requirement needed to accomplish a job purpose HR inventory (Demand) as individual actual performance Skills gap Vacancies 	Potential Rating Scale (PRS) (Dessler, 2007) (Appendix 4)	-Performance Gap Analysis Report -Placement Chart -Training Need Analysis Report
Recruiting, testing and selecting candidates	A degree of compatibility between the vacancy's duties and required jobholders' specifications	Weighted Application Template. (Appendix 5)	Interviews Checklist

		Structured Behavioural Interview (SBI) (Appendix 6) (Roth et al., 2005)	
Employee Compensation & Incentives	Base rate and incentives including commissions, bonuses, merit pay and benefits.	Enterprise Incentives Management (EIM (Banfield and Kay, 2008) (Appendix 7)	-Salary structure -Compensation Spreadsheet

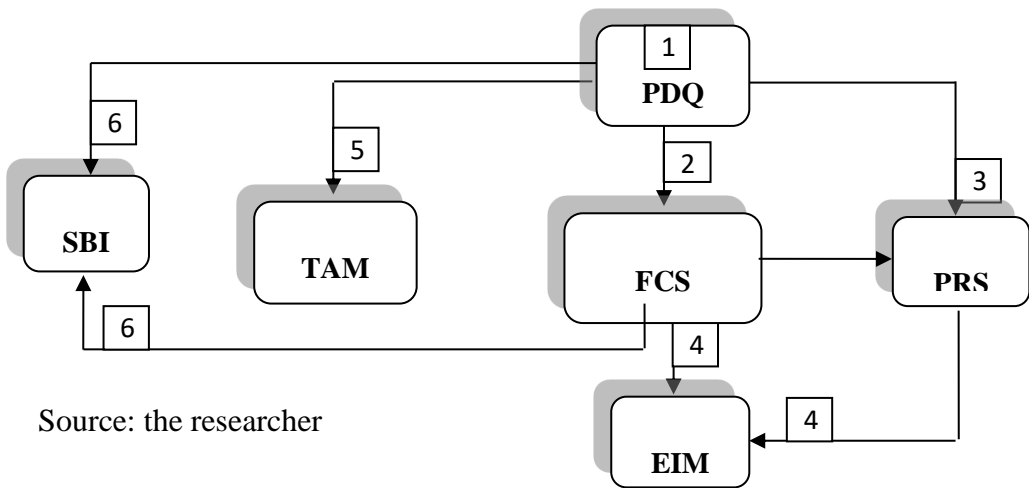


Figure 7: Data transmitted among instruments constituting HRIS model

Table 7: Data transactions among instruments of HRIS model

Transactions	Instruments	Transactions description
1 → 2	PDQ x FCS	Data provided by PDQ about job ID and the desired jobholders' specifications has been used by the FCS instrument to rank, classify and compare jobs.
1 → 5	PDQ x TAM	Data provided by PDQ about job duties has been used by TAM to be assigned to the positions for designing the job structure.
1 → 3	PDQ x PRS	Data provided by PDQ about job objectives has been used by PRS as criterion to appraise individual performance in terms of reaching such objectives.
1 → 6	PDQ x SBI	Data provided by PDQ and processed by FCS about jobholders' specifications and their weights has been used by SBI to define and assess weights for the basic items constituting the interview checklist. Those are used in filtering job candidates for a certain job.
2 → 6	FCS x SBI	
2 → 3	FCS x PRS	Data provided by FCS about job importance regarding a job key performance indicator has been used by PRS to appraise individual performance. This is to determine performance gap precisely.
2 → 4	FCS x EIM	Data provided by FCS about job importance has been used by EIM instrument to calculate a job base rate.
3 → 4	PRS x EIM	Data provided by PRS about individual performance has been used by EIM instrument to calculate incentive structure.

Source: the researcher

11. Research Implications and conclusion

Based on research results discussed above, we may conclude number of theoretical and empirical implications as follows:

The present research asserts the positive, significant relationship among the HRIS features, HRM practices and gaining CA, which had been argued previously by the current literature. However, most of existing literature has focused mainly on the direct linkage among those three variables spotlighting HRIS characteristics that help generating particular CA (Gurol et al. 2010; Beadles et al. 2005; Chui & Fleming, 2011; Manyika 2009). Other studies focus on the direct HRIS/HRM practices relations paying attention to the HRIS characteristics enhancing particular HRM practices (Gardner et al., 2003; Hussain et al. 2007; Florkowski and Lujan, 2006; Haines and Lafleur, 2008; Mishra and Akman, 2010). Instead, the present research enriches the current literatures by explaining how different HRIS characteristics may affect gaining a CA through accelerating and enhancing HRM transactional and transformational practices which has not been discussed exclusively yet by the current literature. Despite evidence of increasing the use of HRIS by various firms, most of the existing empirical studies have been conducted in developed countries (Ball, 2001; Barron et al. 2004; Beadles et al., 2005; Hussain et al. 2007; Ngai & Wat, 2006; Stone et al., 2006). Unfortunately, the results of these studies have been very little implemented to the developing countries especially the Arabian countries (Seyal et. al., 2000). From this line of reasoning, attempts are made by the present research to bridge such gap by revealing HRIS characteristics that accelerate and facilitate HRM practices. This in turn provides guidelines for practitioners in the telecommunications industry when designing or redesigning their HRIS components and reviewing their HRM practices for the purpose of obtaining and maintaining a competitive advantage in the marketplace.

12. Further research

Based on the previous discussion - regarding the present research results, implications and limitations - we produce the following related research topics:

First: Focusing on the HRIS features regarding the system integration with other organization systems to examine its impact on the corporate performance. Second: Examining the mediating impact of the impersonal organizational trust and the perceived organizational support (POS) on the relationship between HRM practices and gaining a sustained competitive advantage (SCA). Third: Examining the impact of employing the KPIs based HR scorecard (emphasizing financial and operational perspectives) on the relationship between the HRM practices and gaining a SCA.

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دور نظام معلومات ادارة الموارد البشرية في تحقيق الميزة التنافسية في السوق

"دراسة ميدانية بالتطبيق علي خدمات المحمول في مصر"

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ملخص البحث

هدفت الدراسة الحالية الي اختبار دور نظام معلومات ادارة الموارد البشرية في رفع قدرة المنظمة علي تحقيق الميزة التنافسية في السوق. إستند الاطار المفاهيمي للدراسة علي مدخل الممارسات الاكثر ملائمة Best-Fit Practices لتحقيق هدف الدراسة التي اجريت علي (255) من العاملين بالشركة المصرية لخدمات المحمول موزعين علي النحو التالي: (110) من العاملين بادارة الموارد البشرية, (21) من العاملين بوحدة نظم المعلومات و (124) من العاملين بادارات البيع. وقد توصلت الدراسة الي وجود علاقة ارتباط موجبة, دالة احصائيا بين خصائص نظام معلومات ادارة الموارد البشرية بالمنظمة – من حيث شمولية قاعدة البيانات database comprehensiveness وتكامل اجزاء النظام system integration – وكلٍ من طبيعة ممارسات ادارة الموارد البشرية وقدرة المنظمة علي تحقيق الميزة التنافسية في سوق المحمول في مصر. كما اثبتت الدراسة ان ممارسات ادارة الموارد البشرية الخاصة بتخطيط القوي العاملة والتدريب تعتبران من اكثر الممارسات تاثيرا في قدرة نظام معلومات ادارة الموارد البشرية علي تحقيق الميزة التنافسية. و قد انتهت الدراسة بتقديم نموذج يوضح اليه تكامل نظام معلومات ادارة الموارد البشرية مع ممارسات ادارة الموارد البشرية بالمنظمة مع القاء الضوء علي طبيعة البيانات التي يجب ان يشملها اجزاء النظام لتحقيق ذلك التكامل.

مصطلحات البحث: نظام معلومات ادارة الموارد البشرية Human Resources Information System, ممارسات ادارة الموارد البشرية Human Resources Management Practices, الميزة التنافسية Competitive Advantage