

The Role of The HR Quality in Supply Chain Management: An applied study in the Pharmaceutical Sector

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Abstract

This paper proposes helpful insights regarding the role of HR quality in supply chain management. The focus has been on the Egyptian pharmaceutical sector using a monthly data from January 2023 to JULY 2023 this is mainly an attempt to contribute to the ongoing debates about this relationship.

To achieve the objectives of this study, the descriptive analytical approach was adopted, through developing (the questionnaire) as a main tool for data collection, where 400 copies were distributed, of top, middle and executive managers in 8 Egyptian pharmaceutical companies, and a total of 396

Questionnaires were found valid for Analysis. The study used many statistical tools and methods, such as mathematical means, standard deviations, multiple regression analysis, simple regression.

The study findings reveal that: "There is a significant role for human resource management quality with all of its dimensions on supply chain management with all of its dimensions in Egyptian pharmaceutical industries companies.

Keywords: Supply Chain Management, Human Resource Management

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دور جودة الموارد البشرية في ادارة سلسلة الامداد دراسة تطبيقية علي قطاع الصناعات الدوائية

الملخص

تهدف هذه الدراسة الي التعرف علي دور جودة الموارد البشرية في إدارة سلسلة التوريد. وقد تم التركيز على قطاع الأدوية المصري باستخدام بيانات شهرية من يناير 2023 إلى يوليو 2023، وهذه في الأساس محاولة للمساهمة في المناقشات الجارية حول هذه العلاقة.

ولتحقيق أهداف هذه الدراسة تم اعتماد المنهج الوصفي التحليلي من خلال تطوير (الاستبيان) كأداة رئيسية لجمع البيانات، حيث تم توزيع 400 نسخة من المديرين التنفيذيين والوسطى والعليا في 8 شركات أدوية مصرية، وقد تبين أن الاستبيانات صالحة للتحليل عددها 396 واستخدمت الدراسة العديد من الأدوات والأساليب الإحصائية، مثل الوسائل الرياضية، والانحرافات المعيارية، وتحليل الانحدار المتعدد، والانحدار البسيط.

توصلت نتائج الدراسة إلى أن: "هناك دور كبير لجودة إدارة الموارد البشرية بكافة أبعادها على إدارة سلسلة التوريد بكافة أبعادها في شركات الصناعات الدوائية.

الكلمات المفتاحية:ادارة المواد البشرية ،ادارة سلسلة الامداد

1-Introduction

The Human Resource Management is considered as one of the most important part in developing any company ,as a result the HR Qualities and strategies such as training, compensation have a great impact on the company performance , All organizations or companies ,including the e-commerce industry ,can continue to advance and exist if they have quality human resources.by having quality human resources, the company's performance will be maximised and achieved success (**Runtu, Mandey, & Ogotan, 2015**) and complete its vision, mission and goals (**Raymond, Hatane, & Hutabarat, 2015**).

Quality human resources are human resources with abundant mindsets, rich in knowledge and skills (excellent skill sets), and good character (ample heart sets). Qualified human resources are human resources that have competencies that refer to three aspects, namely knowledge, skills (hard skills) and behavior (soft skills) such as loyalty, discipline, collaboration, responsibility (**Alfiyah, 2016**).

On the other hand ,supply chain management or SCM is considered as An Important Factor in the company performance and is defined as the process of managing the manufacturing and movement of goods from your suppliers to your customers. if you have a supply chain manager or a team overseeing your supply chain processes, it's their job to ensure your operations are optimal from start to finish .Today more than ever before ,supply chain management has become an integrated part of business and is essential to any company's success and customer satisfaction, Supply chain management has the power to boost customer service, reduce operating costs and improve the financial standing of a company .

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Supply chain management (SCM) is the active management of supply chain activities to maximize customer value and achieve a sustainable competitive advantage. It represents a conscious effort by the supply chain firms to develop and run supply chains in the most effective & efficient ways possible. Supply chain activities cover everything from product development, sourcing, production, and logistics, as well as the information systems needed to coordinate these activities. (Arntzen, B. C., Brown, G. G., Harrison, T. P., & Trafton, L. L. (1995).

A supply chain is the connected network of individuals, Organizations, resources, activities and technologies involved in the Manufacture and sale of a product or service. A supply chain starts with the delivery of raw material from a supplier to a manufacturer, and ends with the delivery of the finished product or service to the end consumer.

SCM oversees each touch point of a company's product or service, from initial creation to final sale. With so many places along the supply chain that can add value through efficiencies or lose value through increased expenses, proper SCM can increase revenues, decrease costs and impact a company's bottom line. The effect is to increase the number of organizations involved in satisfying customer demand, while reducing managerial control of daily logistics operations. Less control and more supply chain partners lead to the creation of the concept of supply chain management. The purpose of supply chain management is to improve trust and collaboration among supply chain partners, thus improving inventory visibility and the velocity of inventory movement.

2-The Previous related Studies

Academics have extensively examined the impact of the HR quality and supply chain management in the performance of the company in many commercial sectors .However ,they always have conflicting results.

Table-1previous study summary

The study	The title	The objectives	The results
1) Ella Anastasya Sinambela et al.(2022)	"Effectiveness of efforts to establish quality human resources in the organization"	This study review the strategies as an effort to increase the effectiveness of human resource development in organizations. The quality of human resources is determined by two main things, namely organizational factors that contain company policies and working conditions; and individual factors	The management strategy in empowering existing human resources in the company is carried out with four strategic formulas, namely employee commitment to quality; targeted training programs; employee performance development and evaluation; and a performance-based reward system
2)Samsul Arifin et	Human Resources	This study aims to determine the role	All expert opinions say that the implementation

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The study	The title	The objectives	The results
al.(2022)	based on Total Quality Management	of TQM in empowering human resources in companies	of TQM will have a positive impact on empowering the human resources they have. The disadvantage of implementing TQM is that the costs incurred are quite high. Management needs to think of more strategies in order to get a lot of benefits but not interfere with the company's financial situation.
3) Cahyono et al.(2023)	The role of supply chain management practices on competitive advantage and performance of halal agroindustry SMEs	This study examines the relationship between the influence of SCM practices on competitive advantage and organizational performance. The data for this study were collected from 165 employees in one	The results suggest that higher levels of SCM practices can lead to increased competitive advantage and improved organizational performance. Also, competitive advantage can have a direct positive impact on organizational performance. This study also confirms the mediating effect of

The study	The title	The objectives	The results
		of the SMEs in the Halal Agroindustry in Indonesia. Survey data were analyzed using partial least squares structural equation modeling (PLS-SEM)	competitive advantage on the relationship between SCM practices and organizational performance

as compared with the previous studies, many similarity and differentiation has been found in this study from others as follows:

Table(2) the differentiation of current research from the previous studies

Results of the Previous Studies	Gap Reserarch	The Current Study
1-the previous studies target the service sector like banking and financial fields	It is very rare to find a study that target the firms and industries especially the pharmaceutical field.	This study target the Egyptian pharmaceutical field.
2- the previous studies used only 3parameters to determine supply chain management including both the	Limited parameters are used to measure the supply chain management .	This study deals with 6 parameters to measure Supply chain management as it added the customer satisfaction and the quality of the

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Results of the Previous Studies	Gap Reserarch	The Current Study
agile and lean supply chain.		product.
3-the previous studies does not deals directly on the impact oh HR quality on supply chain management	Many other variables are included in the study as an intermediate variables.	This study deals on the role of the HR quality including 4 important HR strategy on the supply chain management directly without using any intermediate variable.
4-the size and number of the population in the previous studies is smaller than the selected	Smaller number of population are used and in one sector either private or public sector	This study is done in 8 pharmaceutical companies in the private and public sectors.

However, the similarity of this study with the previous studies include:-

1. The current study has agreed with most of the previous studies in using the questionnaire as a tool for data collection.
2. The current study has agreed with the previous studies in using the descriptive analytical methods ,that help the data analyst to describe a data set by organizing, summarizing and visualizing the information in the quantative data using simple descriptive methods.

3.Literature Review

Mulyana (2010) describes quality as the conformity of standards with the results achieved, while human resources integrate the ability to think and the physical condition that a person has (Hasibuan, 2016). Wirawan (2015) and Soegoto (2014) explained that human resources works for an organization that contributes value to its achievement. Qualified human resources can be measured through their qualifications and competencies (Sunhaji, 2014). Wibowo (2016) explained that competence is a person's ability to complete his duties and responsibilities based on knowledge, skills, and attitudes needed in his work. In line with Makulova et al. (2015) argues that competence is the ability of a person to do a job based on life experience and knowledge and skills that he has. Spencer (2014) also explained that competence is the skills and abilities possessed and gained through work experience, life experience, education, and training. So it can be concluded that competence is a combination of knowledge, experience, skills, attitudes used and obtained to complete tasks and responsibilities.

The term “Strategic human resource management (SHRM)” was introduced, according to Devanna, Fombrun, and Tichy (1981): A strategic perspective which shifts the focus on perform role such as training and benefit to integration and organization, driven by human resource management value added.the evolution of SHRM from human resource management is focused on the issue of human resource management in organization perspective context, instead of individual perspective context and its role to support the business (Liao, 2005). The main study context was proven against the relationship and alignment of business strategy and

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HRM to the organizational performance (Bao et al., 2011; Shameem, 2011; Luna-arocas and Camp, 2008).

The term strategic human resource management was well-defined by Wright and McMahan (1992) as “the pattern of planned human resource deployments and activities intended to enable an organization to achieve its goals.

From the literature review, the principle of study has shifted from testing various human resource practices individually toward testing the whole human resource management Systems as a bundle, because those practices operate with a synergistic effect. In addition, organizational workforce does not interact with single practice but all practices such as A systems (Ichniowski et al., 1997; Becker and Huselid, 1998;lepak et al.,2006).

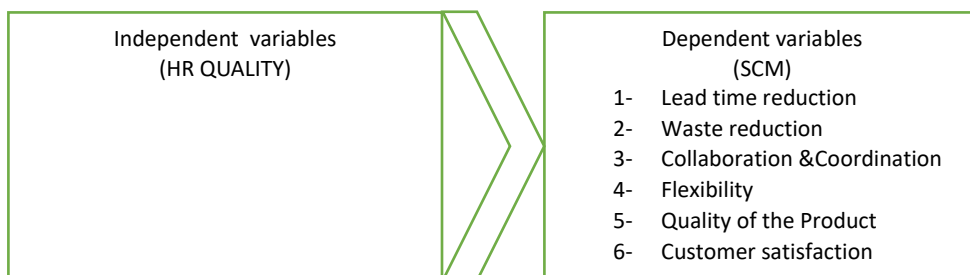
According to the previous studies, The rapid change in the Egyptian market enforce the companies to search another effective ways to cope with the this rapid change and fierce competition, and the rapid development in supply chain management and the appearance of other new supply change models like leagile supply chain management that is worldwide nowadays in many international companies enforce the company to modify its strategy to cope with this new models to avoid getting out of business.

Reflecting on the different findings of the above discussed models that have attempted to capture the relationship between the HR quality and the Supply chain management,the wide array of empirical findings indicate that there is somehow ambiguity.hence,it is crucial to have a fresh attempt to understand the role of HR quality on the Supply chain

management .consequently,the following question is suggested in order to fulfill the call for further research in these terms,”what is the role of the HR quality in supply chain management in the Egyptian pharmaceutical sector”

4.Model of the Study

This study includes dependent and independent variables as shown in the following figure.



Fig(1)the variables of the study

This study focuses on the relationship between the independent variable(hr quality) included the items recruitment &selection, training & development, compensation & benefits. and the dependent variable including the items (lead time reduction, waste reduction, collaboration & coordination ,flexibility, quality of the product)

5.Hypothes of The Study

The main hypotheses that will be tested through research:

First main hypothesis :-

H1:There is a statistical significant effect at level $\alpha \leq 0.05$ of HRM quality on supply chain management

Sub hypotheses:

A. There is a statistically significant effect at level $\alpha \leq 0.05$ of

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HRM (Recruitment and Selection) on supply chain management.

B. There is a statistically significant effect at level 0.05 of HRM (Training and Development) on supply chain management.

C. There is a statistical significant effect at level $\alpha \leq 0.05$ of HRM (performance appraisal) on supply chain management.

D. There is a statistical significance effect at level $\alpha \leq 0.05$ of HRM (Compensation & benefits) on the supply chain management.

The second main hypothesis :

H2: there are statistical significant effects at level $\alpha \leq 0.05$ among the respondents towards the impact of the human resource management quality on supply chain management due to personal demographic (gender, occupation, education level, experience).

6. Research Population and Samples

The data was collected from different EIGH (8) Egyptian Pharmaceutical Companies belonging to the Private and Governmental sectors as shown

Table (3) The Details of the Participant.

	The Name of the company	Governmental or private sector	The Number of distributed questionnaires
1	The Arab Drug Company (ADCO)	Governmental	180
2	Memphis pharmaceutical & chemical industries	Governmental	30
3	Khaira pharmaceuticals	Governmental	30
4	RAMEDA	Private	20
5	ATCO Pharma	private	20

6	Arab Drug Company (SWANCO)	private	9
7	Smartec pharmaceuticals& cosmetics	private	35
8	ACDIMA (ACDIMA INTERNATIONAL TRADING)	private	20
9	Panax pharma		25
	Total		369

Data analysis

-Sample distribution due to gender

Table(4) :Sample distribution in regards to gender

Gender	Frequency	Percent	Valid percent	Cumulative percent
Male	297	80.5	80.5	80.5
Female	72	19.5	19.5	100.0
Total	369	100.0	100.0	

as shown in the table-1 the number of male exceed the number of females in many companies.

- Sample distribution due to age

Table(5):Sample distribution due to age

Age	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 30	52	14.1	14.1	14.1
30 to less than 40	201	54.5	54.5	68.6
40 to less than 50	106	28.7	28.7	97.3
50and above	10	2.7	2.7	100.0
Total	369	100.0	100.0	

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as shown from the table-2 the participant between 30 to less than 40 are common and represent 54.5% of the participants.

-Sample distribution due to Occupation

Table(6):Sample distribution due to occupation

Occupation	Frequency	Percent	Valid Percent	Cumulative Percent
technician	170	46.1	46.1	46.1
worker	112	30.4	30.4	76.4
manager	63	17.1	17.1	93.5
General manager	24	6.5	6.5	100
Total	369	100.0	100.0	

as shown from the table 6 the technician represents the majority of the respondent and represents 46.1%

- Sample distribution due to Education level

Table (7): sample distribution due to Education level

Education level	Frequency	Percent	Valid Percent	Cumulative Percent
diploma	60	16.3	16.3	16.3
bachelor	202	54.7	54.7	71
postgraduate	107	29	29	100
Total	369	100.0	100.0	

as shown from the table, the bachelor degree represents the major of the respondent, this is matching with the major occupation technician and pharmacists which represents the major employees especially in the governmental sector.

-Sample distribution due to Experience

Table(8) :Sample distribution due to Experience

experience	Frequency	Percent	Valid Percent	Cumulative Percent
Less than	54	14.6	14.6	14.6

5years				
5 to 10 years	42	11.4	11.4	26.0
10 to 15 years	101	27.4	27.4	53.4
15 years and above	172	46.6	46.6	100.0
Total	369	100.0	100.0	

as shown from the table the major of the respondent have experience more than 15 years experience, and this means that the Egyptian pharmaceutical sector is highly stable and has great effective staff.

-Sample distribution due to company classification

Table (9): Sample distribution due to company classification

Company classification	Frequency	percent	Valid percent	Cumulative percent
Governmental sector	240	65	65	65
Private sector	129	35	35	100
Total	369	100	100	

-Analysis of overall Human resource management items

Table (10) Means and Test values for Human Resource Management

ITEM	MEAN	STD-DEVIATION	TEST VALUE	p-value (sig)
Recruitment and selection	4.1351	1.01505	63.242	*0.000*
Training and Development	4.1029	0.75169	84.735	0.000*
Performance assesement	3.9424	0.74484	82.339	0.000*
Compensation and Benefits	4.0389	0.78026	80.525	0.000*

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Human QUALITY	3.7	0.45027	130.860	0.000*
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*The mean is significantly different from 3

From the above table it is clear that the mean of the 4 HRM Strategies is 4.1251,4.1029,3.9424,4.0389 and the mean of the Human Resource Quality is 3.787 and the p-value is less than 0.05.

-Analysis of overall supply chain management items

Table (11): Means and Test values for Total Quality Management

ITEM	MEAN	Std. Deviation	TEST VALUE	p- value (sig)
Lead Time Reduction	4.2444	0.73262	89.939	0.000*
Waste Reduction	3.8079	0.93136	63.602	0.000*
Collaboration &Coordination	3.7734	0.82853	70.849	0.000*
Flexibility	3.2655	1.08508	46.816	0.000*
Quality of the product	3.9591	0.80149	76.683	0.000*
Customer Satisfaction	3.6771	0.83558	68.457	0.000*
SUPPLY CHAIN MANAGEMENT	4.0515	0.62995	100.049	0.000*

*The mean is significantly different from 3

From the above table it is clear that the mean of the 6 SCM Items is 4.2444,3.8079,3.7734,3.2655,3.9591,3.6771 and the mean of the Human Resource Quality is 4.0515 and the p-value is less than 0.05.

7. Discussion of the Results

Based on the data analysis and findings in previous chapter, the researcher summarized the results as follows:

First: sample demographic characteristics

The statistics show that:

1. the majority of respondents are male with 80.5% while 19.5% of respondents are females.
2. The majority of respondents are in category of (30 to less than 40 years old) with 54.5%.
3. The majority of the respondents are technician with 46.1%
4. The majority of the respondents are bachelor's degree holders with 54.7%.
5. The majority of the respondents have experience from 15 years and above with 46.6%.
6. the majority of the respondents are working in the governmental sector.

Second: Hypotheses of Correlations and Differences

1. There is a significant relationship at level $\alpha \leq 0.05$ between Recruitment & Selection and supply chain management in the Egyptian pharmaceutical companies .

Recruiting and Selecting the right people with the right qualifications and requisite skills is a prerequisite to facilitate league supply chain .

2. There is a significant relationship at level $\alpha \leq 0.05$ between Training & Development and the supply chain management in The Egyptian Pharmaceutical companies.

Training people to equip them with the needed skills and knowledge can significantly contribute to the implementation and delivery league supply chain.

3. There is a significant relationship at level $\alpha \leq 0.05$ between Performance Assessment and supply chain management in the

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Egyptian pharmaceutical companies. Performance assessment system contribute to implement league supply chain.

4. There is a significant relationship at level $\alpha \leq 0.05$ between Compensation & Benefits and supply chain management in the Egyptian pharmaceutical companies. Compensation and benefits are highly considered to contribute to the implementation and delivery of league supply chain.

5. There are no significant differences at level $\alpha \leq 0.05$ among the respondents towards the impact of the HRM quality on supply chain management due to Age.

6. There are significant differences at level $\alpha \leq 0.05$ among the respondents towards the impact of the HRM quality on supply chain management due to Occupation.

7. There are no significant differences at level $\alpha \leq 0.05$ among the respondents towards the impact of the HRM quality on supply chain management due to Education Level.

8. There are no significant differences at level $\alpha \leq 0.05$ among the respondents towards the impact of the HRM quality on supply chain management due to Experience.

8. Study Recommendations

In the light of the study analyses, results and conclusions, the researcher proposed the following recommendations to top management of the Egyptian pharmaceutical sector:-

1. pharmaceutical companies supposed to follow scientific and objective recruiting and Selection process for its considerable relationship with supply chain management.

2. the researcher recommends that recruitment and selection process should be made very carefully according to the best ability of the employee concerned based on merit and efficiency by applying justice, honesty and truthfulness. companies also should implement equal employment opportunities away from bias in order to determine the actual needs of the workforce in the light of the company`s financial ability to ensure smooth running of the business operations.
3. To improve and support employees through more participation in training courses and symposiums. this should take be performed to increase their knowledge, skills and abilities ,so the pharmaceutical companies are supposed to have the highest considerable effort in improving and keeping up training and development programs.
4. Companies should review the performance assessment system by:-
 - A. to listen to employees ideas clearly outline the work to be executed to encourage them to care about the work they perform.
 - B. To provide the employees with work feedback and encouragement to enhance their ability to influence their department and perceive themselves as free to choose the work they perform.
5. Constant feedback to prevent committing mistakes that might harm the company.in addition , this will certainly encourage employees to learn and develop themselves so they can seek the development by their own, based on professional clear feedback and identified criteria.
6. The researcher recommends for Egyptian pharmaceutical sector especially the public sector to conduct formal assessments of all employees during the first five years of employment to measure success in providing an employment

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environment that promotes job satisfaction .this may provide information useful for analyzing and modifying HRM practices that will help to improve where there are deficiencies in employee perception of job satisfaction.

7. The personal characteristics(occupation)must be considered to contribute to better implementation and utilization of supply chain management.

9.Action plan to achieve recommendation

The researcher put an estimation action plan to achieve the objectives and the recommendation of the study and this part the researcher put an estimation time and costs to achieve it, although we insist that the pharmaceutical companies put in consideration that this part is estimation in terms of costs and time.

Item	Activities to achieve the recommendati on goal	Estimation Time to achieve the recommendation goal	Management Responsible	Estimation cost
Recruitment &selection	Set up a plan to selection a suitable candidate	About 1month	Hr manager	15,000L.E
Training & development	Set up regular training courses conducted by specialized trainers	Regular training every 3 months	CEO and HR Manager	35000 L.E

Performance appraisal	Set up regular reports including the performance appraisal of every employee and the strength and weakness points in its performance	Regular appraisal every 3 months	Hr manager and upper management	15,000L.E
Compensation and benefits	Set up a bonus strategies to reward effective and the top employee regularly to encourage others	Regular compensation every month	The managers and general manager of each sectors	100,000 L.E

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