

**The Scientific Journal of
Business and Finance**
<https://caf.journals.ekb.eg>

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Published Online: September 2024.

To cite this article: El-Hameed, Sherif Adel Abd El-Aleem., **Can Talent Management Enhance Psychological Capital: The Mediating Role of Organizational Justice (Evidence from the Egyptian Pharmaceutical Sector)**, The Scientific Journal of Business and Finance, 44, (3). 135-170

DOI: [10.21608/caf.2024.379108](https://doi.org/10.21608/caf.2024.379108)

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Article History

Received 29 May 2024, Accepted 26 June 2024, Available Online September 2024.

Abstract:

This study seeks to examine relationship between talent management practices and level of psychological capital revealed in the Egyptian pharmaceutical sector, the researcher throughout this research tries also to test the mediating role that organizational justice might perform in shaping this relationship. Simple random sample from employees & workers working within various managerial levels inside Arab drug & chemicals industries company was selected in order to test research hypotheses. Results revealed positive significant relationship between both talent recruitment dimension and talent management & evaluation dimension and level of organizational justice revealed, also positive significant impact was found between procedural justice dimension & level of psychological capital. However, in presence of organizational justice as a mediating variable, no significant impact was found between both retaining talents dimension & talents development dimension and level of psychological capital. Finally, in absence of organizational justice as a mediating variable, no significant impact was found between recruiting talents dimension & level of psychological capital.

Key Words: Talent Management, Organizational Justice, Psychological Capital, Interactive Justice, Self-efficacy

ملخص البحث:

تسعى هذه الدراسة إلى إختبار العلاقة بين ممارسات إدارة المواهب ومستوى رأس المال النفسي السائد داخل أهم القطاعات الحيوية في مصر وهو قطاع الأدوية المصري. كما حاول الباحث أيضا من خلال هذا البحث أن يختبر إذا ما كان هناك دورا وسيطا تلعبه مستوى العدالة التنظيمية السائد في تشكيل العلاقة بين إدارة المواهب ومستوى رأس المال النفسي. من أجل إختبار فروض الدراسة وللإجابة علي تساؤلات البحث، تم إختيار عينة عشوائية بسيطة من الموظفين والعاملين في مختلف المستويات الإدارية داخل الشركة العربية للصناعات الدوائية والكيميائية. أظهرت النتائج وجود علاقة إيجابية معنوية بين بعدي إستقطاب المواهب وإدارة وتنمية المواهب ومستوى العدالة التنظيمية السائد، كما أظهرت النتائج أيضا وجود علاقة إيجابية معنوية بين مستوى العدالة الإجرائية ومستوى رأس المال النفسي. كما أظهرت

النتائج عدم معنوية العلاقة بين بعدي الإحتفاظ بالمواهب وتنمية المواهب ومستوي رأس المال النفسي وذلك في ظل وجود العدالة التنظيمية كمتغير وسيط. وأخيرا، وفي ظل غياب العدالة التنظيمية كمتغير وسيط، لم يجد الباحث علاقة معنوية بين بعد إستقطاب المواهب ومستوي رأس المال النفسي.

الكلمات المفتاحية: إدارة المواهب، العدالة التنظيمية، رأس المال النفسي، العدالة التفاعلية، الكفاءة الذاتية.

1. Introduction.

World today is experiencing a real revolution in communication, information technology, and artificial intelligence (Achi & Sleilati, 2016). According to (Onwuka et al., 2015; Sora et al., 2021) any country aspiring to achieve long-term development & success can no longer do this without strong strategic sectors inside the country; as a result, Egypt generally starts to develop necessary infrastructure for information & communications technology, promote digital transformation in order to achieve high level of financial inclusion, encourage innovation and fight corruption, in order to enhance Egypt's position on the regional & international levels.

One of these strategic sectors is ultimately the pharmaceutical sector. For that reason, the need for talents become a must for all organizations because jobs nature currently become different than ever before (Muriithi & Makau, 2017). Global experiences have also indicated that effective investment in human resources makes different organizations competitive, and this investment is best embodied in talent management. In the current era which is characterized by continuous change, talent has become a highly valuable human capital, good selection of employees, as well as discovering and developing their talents should be a top priority (Mkamburi & Kamaara, 2017). Talent management practices includes set of dimensions related to attracting talent, developing talent, empowering talent, and retaining talents, as well as identifying talents impact as an input towards developing organizational performance.

In order to develop organizational performance at the present time, great attention must be given to talent management practices, which is considered as the modern trend of human resources management (Pereira et al., 2022). Therefore, organizations should consider excellence an essential element for survival, growth, sustainability, and continuous development. In addition, talent management became the dominant characteristic that distinguishes one organization from another, interest in human element is one of the basic factors used in confronting organizational challenges; as a result, investing in human resources becomes a long term investment process (Rabbi et al., 2015).

On the other hand, psychological capital is one of the main resources for positive organizational behavior, it focuses on studying & analyzing all positive aspects of subordinates as well as striving to develop & improve their operational performance (Lupsa et al., 2020). Improving employee performance is considered one of the most important main goals of psychological capital, psychological capital classically defined as a positive feelings generated within organization's members, this feeling results in many positive results at both individual & organizational levels (Saraswati, 2019). High levels of psychological capital have been associated with increased organizational citizenship behavior, quality of work life, and job satisfaction (Paliga et al., 2022).

Sweetman et al. (2011) insist that, psychological capital also reduces level of job stress thus reducing negative work related attitudes. Many organizations focus on developing the psychological capital of their employees as it is one of the most important factors that raise the level of productivity and support organizational competitiveness. In other words, it considered as a source of sustainable competitive advantage in nowadays organizations as it enhances well-being at work, raise job satisfaction, strengthen organizational culture, enhance employee creativity, and job performance (Wu & Chen, 2018).

According to Akram et al. (2017), Budomo (2023) and Diposentono et al. (2023) organizational justice in turn is one of the important characteristics that must be characterized by organizations of the twenty-first century in order to achieve competitive advantage and organizational effectiveness. Also Gelens et al. (2014), Haynie et al. (2016) and Fahim (2023) argued that employees' perception of organizational justice greatly affects their attitudes and behaviors, which leads to both positive and negative results on job, tasks, and organizational performance.

2. Theoretical Framework & Literature Review.

Talent management is one of the most important contemporary areas of knowledge in modern administrative thought, which takes into account organization's intangible resources especially intellectual capital, through which employees are prepared to be capable of assuming new responsibilities (Alimansyah & Takahashi, 2023). Talent represents abilities, competencies, and skills that individuals possess in order to perform work effectively. Talented employees can influence their counterparts as a role model, which leads to team work & business success. Talents also can be regarded as a combination of exceptional intellectual skills including flexible thinking, dealing with unconventional problems, ambiguity, uncertainty, and commitment to work tasks (Groenewald et al., 2024).

Bhatia & Baruah (2020) argued that there is no specific & clear definition of the term talent management because it is considered a modern term that includes many interpretations, but generally, talent management can be regarded as an approach consisting of a set of activities, processes, and key functions to achieve sustainable competitive advantage for the organization by developing talents with high performance & capabilities, ensuring their commitment to organization tasks (Noha & Sahar, 2024; Sinyagin & Sinyagina, 2024).

After reviewing academic literature related to psychological capital (X. et al., 2020; Dirzyte & Patapas, 2022; Sindhura, 2022; Alghamdi et al., 2023; Gojny-Zbierowska, 2024), most studies have agreed that dimensions of psychological capital consist of four main dimensions; self-efficacy, optimism, hope, and flexibility. Self-efficacy refers to the extent of confidence that individuals have to complete all efforts required for work tasks, while optimism refers to positive state of feelings that enable individuals to achieve current & future success. Hope was regarded as an emotional state that express positive feelings towards the future, while flexibility finally was regarded as a positive response not only to adverse events but also to positive events that might cause adverse individual reactions.

Considering organizational justice, there were many definitions & interpretations to this concept; some academics defines it from a pure psychological approach, others explore it from functional & structural perspective (Farouk Abdel-Kader, 2016; Mubashar et al., 2022). However, regardless of which approach is correct, there is a prevailing trend that employees' perception of the lack of organizational justice within their workplace leads to creating a state of tension that leaves a negative impact on the organization (Alsharah, 2023). Traditionally, many researchers have agreed that organizational justice has two main dimensions which are distributive & procedural justice. Procedural justice furtherly divided into two dimensions which are organizational & social dimensions. Recently, third dimension for organizational justice has been formed, which is called interactive justice (Ghosh et al., 2014; Malla & Malla, 2023).

In the following section the researcher will present some studies & researches that dealt directly with talent management, organizational justice, and psychological capital.

Elnashmi & Alafari (2018) aims to measure how organizational justice can affect level of organizational commitment in pharmaceutical companies in Yemen. Scientific questionnaire was designed and used in order to collect research data, data was furtherly collected from a sample of 272 employees, out of them 264 were valid and reliable for statistical analysis. findings show statistical significant effect for all dimensions of organizational justice and level of organizational commitment revealed in Yemen pharmaceutical companies. Procedural justice had the most influential impact on

organizational commitment, while interactional justice was found to have the least influence. finally, results reflect that, adopting organizational justice in Yemen pharmaceutical companies will lead to enhancing level of employees' organizational commitment.

Jinda & Shaikh (2020) insists that pharmaceutical companies struggle for retaining talents to achieve continuously operational & organizational success. Acquiring talents through headhunting for example might be a costly choice for companies compared to developing talents. For that reason, organizations must follow efficient talent management strategies in order to attract, develop, and retain best talents. Researchers throughout this research develop a hypothetical model in order to trace the impact of talent management practices on succession planning within pharmaceutical companies. Analysis suggests that, hiring required leaders will not necessarily lead to winning a staff of talents, however, succession planning in pharmaceutical companies required efficient implementation of sound talent management strategies. Results revealed that, correct talent development & identification accordingly leads to talent retention & succession planning.

(Abbasi et al., 2013) aims to illuminate importance of talent management practices in pharmaceutical sector in Pakistan, also researcher throughout this research tries to highlight importance of implementing effective talent management mechanisms to assist Pakistani pharmaceutical industry in achieving sustainable competitive advantages in a highly competitive environment era. Research data was collected through questionnaire & structured interviews with top and intermediate management levels. Findings revealed that, there is a positive significant relationship between talent management practices & organizational performance in Pakistani pharmaceutical companies. As a result, Pakistani pharmaceutical organizations must keep eyes on their employees especially talents in order to gain sustainable competitive advantages. That's to say, talented employees are regarded as the most valuable assets inside the organization. Researchers finally recommends pharmaceutical companies to develop, support, and fully understand talent management practices in order to compete & survive in a highly competitive environment.

Considering Pakistanian healthcare sector, (Gohar, 2021) aims to examine to what extent there is a significant relationship between talent management practices & employee's retention in Pakistanian hospitals taking into consideration revealed level of organizational justice as a mediating variable. Research questionnaire was designed in order to collect necessary data, correlation and regression analysis was used specifically process model. Findings show positive significant relationship between talent management practices & employees retention. Results also verified the mediating role of organizational

justice in shaping the relationship between talent management practices & employee's retention.

(Al-Qeed et al., 2018) aims to realize the impact of talent management practices on overall organizational performance in pharmaceutical companies operating in Jordan taking into consideration the mediating role of emotional intelligence. Research questionnaire was designed & distributed among a stratified random sample containing employees & managers working in Jordanian pharmaceutical companies, 1125 valid responses were collected. Research hypotheses was tested through PLS-SEM model, results revealed that, positive significant relationship was found between talent management practices and both organizational performance & emotional intelligence. Also, positive significant relationship was found between emotional intelligence & organizational performance of Jordanian pharmaceutical companies. Through utilizing PLS model & structural modelling equation, emotional intelligence as a mediating variable was found to justify the relationship between talent management practices & organizational performance within Jordanian pharmaceutical companies.

(Mgbemena et al., 2022) examine the impact of talent management practices on organizational performance of pharmaceutical companies operating in Nigeria. Required data of this research was collected through designing detailed survey containing relevant questions considering research variables. In this research, employee performance was considered as a dependent variable, while talent attraction, retention, and training was employed as explanatory variables. Research population consists of 1800 employees & workers working within selected Nigerian pharmaceutical firms. stratified random sample consists of 353 respondents were selected in order to test research hypotheses. Findings indicate significant impact of both talent retention practices and performance management systems on employee's productivity. Also training & development practices was found to have a significant impact on productivity of employees in Nigerian pharmaceutical firms. Researchers recommends furtherly that top managers inside Nigerian pharmaceutical firms must design & follow efficient talent retention strategies in order to develop & retain continuously talented employees. Finally, in order to enhance employee & organizational productivity, organizations must focus primarily on training & development programs in order to enhance employees' competitiveness.

Gohar et al. (2023) primarily examine the mediating role of organizational justice in shaping the relationship between talent management practices & employee retention in healthcare sector. Researchers employ a number of quantitative approaches through following survey methodology to collect required data from government hospitals in Pakistan. Research questionnaire was distributed among 265 participants in order to test

research hypotheses, structural equation modeling was followed in order to trace the impact of succession planning & talent development on employees' retention. Results revealed that, talent management and justice serves as a viable role in addressing motivating behaviors exhibited by doctors in the Pakistanian healthcare sector.

Jnaneswar & Ranjit (2021) aims to propose & examine psychological ownership as an intervening variable in shaping the relationship between organizational justice and organizational citizenship behavior. cross-sectional analysis with a sample of 301 information technology Indian employees was conducted. Findings show significant impact between organizational justice and both psychological ownership and organizational citizenship behavior. Also, psychological ownership was found to have a partial mediation role in shaping the relationship between relationship between organizational justice and organizational citizenship behavior. findings of the study offer valuable messages to the organizational leaders in creating sustained competitive advantage through employee behaviors like organizational citizenship behavior and psychological ownership.

3. Pilot Study & Formulating Research Problem.

Lately, attention to talents has become a global phenomenon among specialists & researchers. Improving talent management practices is one of the strongest priorities that most professional organizations seek to achieve (Collings et al., 2015). In point of fact, pharmaceutical companies will continue to look towards advanced technologies & techniques in order to create efficiencies among internal functions & operations in order to contribute positively towards its community (Noermijati et al., 2023).

In order to define research problem and to clarify research objectives; the researcher conduct some personal interviews¹ in order to identify to what extent different dimensions of talent management practices are applied within Egyptian pharmaceutical sector and accordingly to recognize whether there is some sort of impact of these practices on both levels of organizational justice and psychological capital revealed in the Egyptian pharmaceutical companies. Different questions were asked & discussed with general managers, department managers, supervisors, and production & operations technicians.

(1) In this regard, the researcher chose a random sample of Twenty individuals working in the Egyptian pharmaceutical sector specifically inside production & operations department of Arab Drug & Chemicals Industries company (ADCO). ADCO is considered one of the oldest Egyptian pharmaceutical companies listed in the Egyptian stock exchange. Twenty employees were selected (two deputy general managers, five deputy department managers, eight supervisors, and five production & operations technicians) noting that there was no prior arrangement in the process of selecting the sample items, but rather they were chosen randomly.

The researcher furtherly noticed large consensus & agreement among respondents that managerial & administrative policies followed & applied within Arab drug & chemicals industries company is keen on recruiting, retaining, and developing talents. However, respondents didn't express any agreement or rejection regarding existence or absence of a direct relationship between talent management practices and both level of organizational justice & psychological capital revealed inside the company. Responses and viewpoints of respondents can be represented as follows:

- 1- Respondents agreed that managers objectively select candidates through matching their competencies with the nature of vacant positions.
- 2- Company's management insists to keep talented employees in case of downsizing decisions.
- 3- Company's internal system almost supports talented employees to be promoted at higher managerial levels.
- 4- Respondents agreed that managers are keen to spread the culture of excellence among employees.
- 5- Respondents agreed that Managers are keen to spread the principles of initiative and flexibility.
- 6- Company's management works to provide special training programs to develop different talents.
- 7- Respondents agreed that organizational justice & high level of psychological capital is very important objective that company management should exert utmost effort in order to achieve it.
- 8- Based on respondent's responses, the researcher wasn't able to determine whether there is an existing relationship between applying talent management practices and achieving organizational justice & raising psychological capital in the Egyptian pharmaceutical sector.

4. Research Problem.

After reviewing different studies that explain & analyze various concepts related to talent management, psychological capital, and organizational justice (Rahman et al., 2015; Khaola & Rambe, 2020; Miao et al., 2021; Knezović & Neimarlija, 2022); the main problem of this research can be formulated in terms of the following question: "What mediating role can organizational justice plays in shaping the relationship between talent management practices and level of psychological capital revealed in the Egyptian pharmaceutical sector?"

Accordingly, the researcher throughout this research attempts to answer the following questions:

- 1- Can talent management practices affect level of organizational justice revealed in the Egyptian pharmaceutical sector?
- 2- Does the level of organizational justice revealed in the Egyptian pharmaceutical sector affect the level of psychological capital?
- 3- Can talent management practices affect level of psychological capital revealed in the Egyptian pharmaceutical sector?
- 4- Does the level of organizational justice revealed in the Egyptian pharmaceutical sector play a mediating role in shaping the relationship between talent management practices and level of psychological capital?

5. Research Hypotheses.

In the light of the research problem stated earlier, research hypotheses can be presented as follows:

First Main Hypothesis: There is a statistical significant relationship between talent management practices and level of organizational justice revealed in the Egyptian pharmaceutical companies.

Second Main Hypothesis: There is a statistical significant relationship between level of organizational justice revealed in the Egyptian pharmaceutical companies and psychological capital.

Third Main Hypothesis: There is a statistical significant relationship between talent management practices and level of psychological capital revealed in the Egyptian pharmaceutical companies.

Fourth Main Hypothesis: Levels of organizational justice revealed in the Egyptian pharmaceutical companies might shape the relationship between talent management practices and psychological capital.

6. Research Model.

Based on the aforementioned research objectives and hypotheses, and in the light of examined research literature (Shaikh et al., 2017; Bibi, 2018; E. A. El Dahshan et al., 2018; Cao et al., 2020; Mitosis et al., 2021; Budomo, 2023; Diposentono et al., 2023; Chang et al., 2024), research model can be represented as follows:

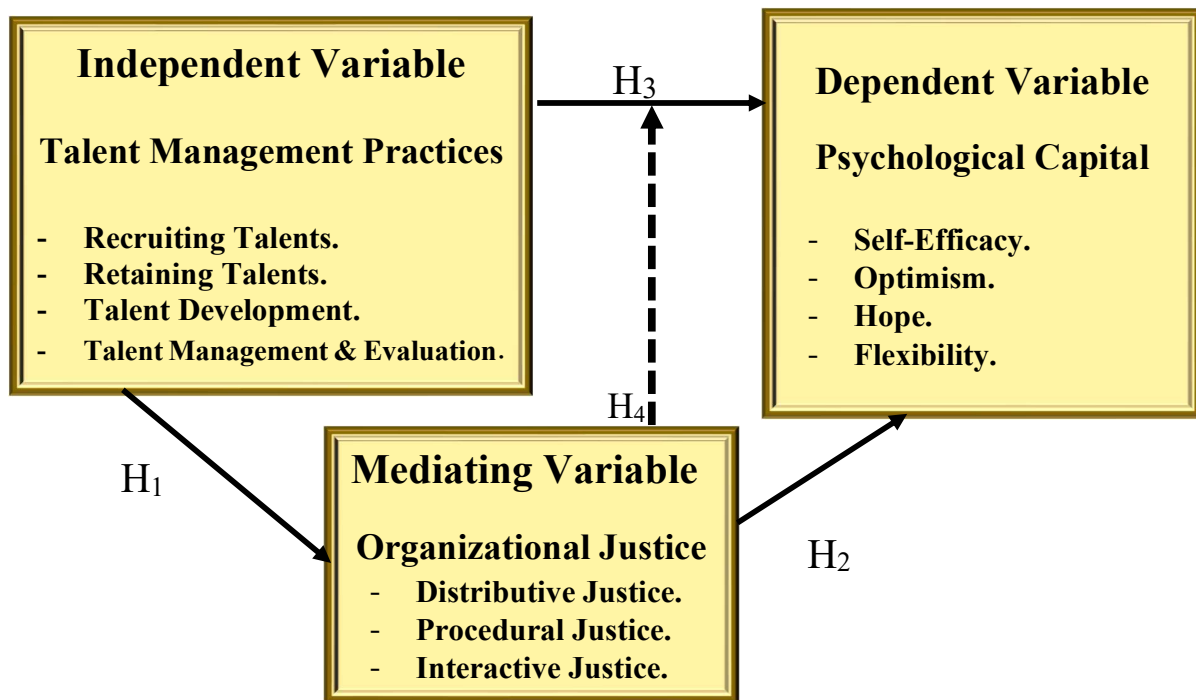


Figure 1: Research Model

7. Research Objectives.

In the light of research problem and hypotheses stated earlier, basic objectives of this research can be summarized as follows:

- 1- Identifying level of employees' awareness regarding the extent to which talent management practices (recruiting talents, retaining talents, talent development, and talent management & evaluation) are applied within the Egyptian pharmaceutical companies.
- 2- Identifying level of psychological capital (self-efficacy, optimism, hope, and flexibility) revealed in the Egyptian pharmaceutical companies.
- 3- Identifying level of organizational justice (distributive justice, procedural justice, and interactive justice) revealed in the Egyptian pharmaceutical companies.
- 4- Identifying how talent management practices can affect level of organizational justice revealed in the Egyptian pharmaceutical companies.
- 5- Identifying how level of organizational justice revealed in the Egyptian pharmaceutical companies can affect level of psychological capital in these companies.
- 6- Identifying how talent management practices can affect level of psychological capital revealed in the Egyptian pharmaceutical companies.
- 7- Identifying to what extent level of organizational justice revealed in the Egyptian pharmaceutical companies can shape the relationship between talent management practices and levels of psychological capital.

8. Research Significance.

First: Scientific Significance of the Research.

Current research derives its scientific significance from the importance of its topic. Egyptian pharmaceutical sector plays a critical role in safeguarding public health through providing essential medicines and vaccines that combat diseases & pandemics. Pharmaceutical sector in Egypt is expected to generate total revenue of US\$1,449 million by the end of 2024 with oncology drugs holding the largest market share, while looking forward to experience an annual growth rate of 7.68%, this expected growth rate will turn the market volume of the Egyptian pharmaceutical sector to reach US\$1,948 million by 2028.

Egyptian pharmaceutical sector regarded as the largest in the MENA region, the sector continues to attract high level of foreign direct investment despite the fact that laws in Egypt doesn't always provide patent protection right to pharmaceuticals. But after signing TRIPS agreement (Trade-Related Aspects of Intellectual Property Rights) the situation becomes totally different as many foreigner investors after this agreement start to increase rapidly their volume of investments inside the Egyptian pharmaceutical market making Egypt first in rank across the middle east. Pharmaceutical sector in Egypt is regulated through the Egyptian Drug Authority (EDA)² which working directly under supervision of the Egyptian ministry of health.

Second: Practical Significance of the Research.

This research derives its practical importance from results & recommendations expected to be generated after its completion. Through these results, the researcher can suggest a typical model to support talent management practices implementation in the Egyptian pharmaceutical sector so as to enhance & improve levels of organizational justice & psychological capital within Egyptian pharmaceutical companies, the matter which is totally consistent with Egypt's Vision 2030³.

(2) On August 25, 2019, Egyptian president ratified law no. 151 of year 2019; article fourteen established the Egyptian Drug Authority, in addition article sixteen specified its mandate. According to Article fourteen, a public service authority, called the Egyptian Drug Authority, is created; it has a juridical personality and is affiliated with the Prime Minister.

(3) During the past few years, Egypt has witnessed great boom in both healthcare & pharmaceutical sectors; this was evidenced by the establishment of effective entities, such as the Egyptian Drug Authority (EDA) and the Unified Purchasing Authority (UPA), which all come in line with Egypt's Vision 2030. Egypt's pharmaceutical sector is a promising significant sector that characterized by significant growth potential; pharmaceutical sector expected to achieve \$5 billion in exports by 2030 up from \$964 million in 2022. Currently, Egypt has one-hundred and seventy

9. Research Limits.

This research was conducted within the following limits:

Theoretical limits: The current research is limited to studying talent management practices and its impact on enhancing level of psychological capital and organizational justice revealed in the Egyptian pharmaceutical companies⁴.

Human limits: The current research is limited to studying and analyzing talent management practices and its impact on enhancing level of psychological capital and organizational justice from the viewpoints of employees and workers at various managerial levels in the production sector (department) within Arab Drug & Chemicals Industries company (ADCO)⁵.

licensed pharmaceutical factories, one-hundred and fifty-two of them are owned by private sector, nine by public sector and nine by multinationals. According to Egypt vision 2030, local pharmaceutical production in 2030 is expected to cover about 95% of local market needs.

(4) Egyptian pharmaceutical sector was exclusively selected due to the critical role that this sector performs inside the Egyptian economy on both individual & societal levels. Egypt is the largest producer & consumer of pharmaceuticals in both gulf & MENA regions, with a market value of USD 56.6 billion. The Egyptian Pharmaceutical sector is a critical significant player in the global supply chains of pharmaceuticals with exporting volume of USD 400 million. Egyptian pharmaceuticals expected to have great & huge market access opportunities with a dynamic local market of exceeding 110 million Egyptian customers. Also, through Suez Canal economic zone, the Egyptian pharmaceutical sector has great access to more than two billion customers around the world while benefiting from several free trade agreements that Egypt had recently signed with many Arab, African, and European countries including African Continental Free Trade Agreement, Free Trade Agreement with EFTA States, Agadir Free Trade Agreement, and Mercosur Free Trade Agreement with Latin American countries. Finally, the Egyptian pharmaceutical sector considered as critical strategic sector especially after considering Egypt as one of the four African countries along with Nigeria, Nigeria, and Ghana that can export vaccines across the globe.

(5) This pharmaceutical company was exclusively selected as it considered one of the oldest listed pharmaceutical companies operating in the Egyptian market. The company offers wide range of critical pharmaceutical products including anti-infective medications, nervous system medications, dermatological medications, and cardiovascular medications. In addition, this company considered on the top of exporting companies list as it exports its products to nearly forty countries around the world including Jordan, Korea, China, Syria, Sudan, and Morocco. This company was also chosen due to its unique mixed capital structure, where the holding company for pharmaceuticals, chemicals and medical supplies (state owned) owns sixty percent of company's shares, shareholding worker's union owns ten percent, and remaining percentage which is about thirty percent is owned by the private sector. Finally, Arab drug & chemicals industries company was selected due to ease of access to the required data.

Employees and workers were selected exclusively because they are the ones who are subject to different managerial and leadership styles, so through them the researcher can evaluate the impact of applying talent management practices on the level of psychological capital and organizational justice

Time limits: This research will be conducted during the first quarter of 2024.

Application Limits: The current research will be applied on one of the biggest public enterprise listed pharmaceutical companies which is Arab Drug & Chemicals Industries company (ADCO), a subsidiary of Holding Company for Pharmaceuticals, Chemicals and Medical Supplies.

10. Research population, sample, and data collection methods.

Research population consists of all employees and workers at all managerial levels within production & operations department inside Arab Drug Company (ADCO). Research population includes all workforce working within the production department including supervisors, technicians, workers, warehouse supervisors, department heads, department directors, and their deputies. The Arab Drug Company was chosen because it is one of the leading companies in the Egyptian pharmaceutical sector. In addition, Arab drug company were selected because of its effective role not only in the field of pharmaceutical manufacturing but also in the field of manufacturing cosmetics, medical preparations, chemicals, veterinary medicines, and pesticides.

Arab Drug & Chemicals Industries company (ADCO) is considered one of the oldest Egyptian pharmaceutical companies registered in the Egyptian stock exchange, as it has been registered and listed on the official tables of the Egyptian Stock Exchange since February 1996 (about 28 years of listing). According to the Egyptian Stock Exchange's disclosures, Arab Drug & Chemicals Industries company (ADCO) achieved net profits in 2023 amounted to 83 million pounds, compared to 76 million pounds in the previous year, an increase of about 8.5%. Production & operations department inside the Arab Drug company was exclusively chosen due to its vital and effective role within pharmaceutical companies compared to other departments. Moreover, workforce size generally in production department represents about 75% to 80% from the total size of pharmaceutical companies' workforce⁶.

(6) Based on the pilot study that was conducted by the researcher.

Organization structure of production & operations department inside the Arab Drug company can be represented as follows:

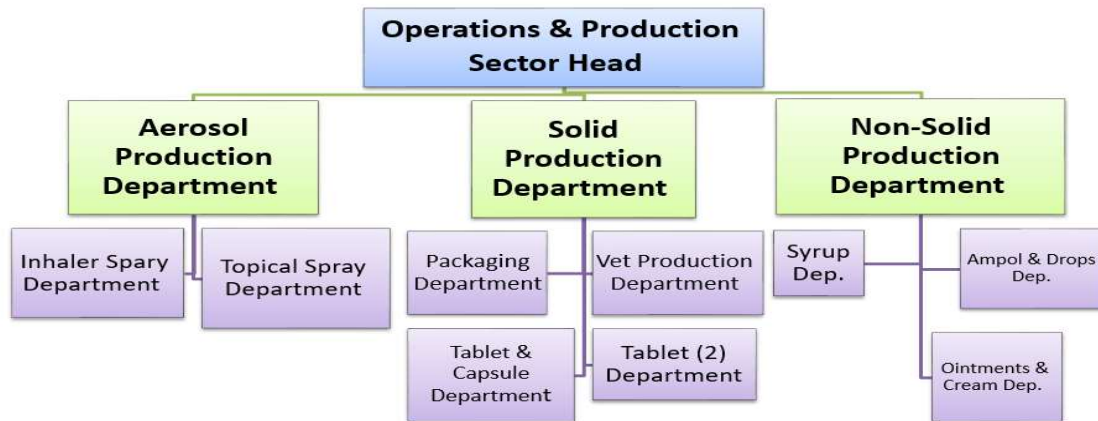


Figure 2: Production & Operations Department Organization Structure.

Population of this research consists of all employees & workers working inside production & operations department within the Arab Drug & Chemicals Industries Company (ADCO). According to sample size tables; research sample will consist of 286 employees and workers from all managerial levels inside the production department of Arab Drug & Chemicals Industries company (ADCO). About 300 surveys were distributed on all categories of employees & workers inside the production department of the company. Data was collected through field visits & Google Forms lists. After excluding incomplete & invalid lists, the number of correct responses reached 259 forms which means a response rate of 90%.

11. Statistical Analysis & Testing Hypotheses.

In this research, we will study & analyze trends revealed in observations of research sample towards the mediating role that organizational justice might play in shaping the relationship between talent management practices and psychological capital in the Egyptian pharmaceutical sector. This will be done through analyzing respondents responses in order to identify general trend of those observations. Statistical analysis & testing hypotheses will be done through relying on a number of statistical techniques & tests including Statistical package of social sciences (SPSS) & Analysis of Moment Structure (Amos). Statistical analysis will be conducted in the following sequence:

- Reliability & Validity Tests.
- Distribution of the research sample according to personal & occupational information.
- Descriptive statistics of research variables.
- Path Analysis.

11.1 Reliability & Validity Tests.

Reliability refers to what extent the scale is stable and doesn't contradict itself. To verify stability of research scale, Cronbach's Alpha coefficient can be used. On the other hand, validity refers to what extent research tool can measures what it was designed to measure. Cronbach's Alpha coefficient and validity coefficient for research variables can be represented in the following table:

Table 1: Reliability & Validity Coefficients for Research Variables.

Variables	Items	Cronbach's Alpha coefficient	Validity Coefficient
Independent variable: Talent Management Practices	16	0.853	0.924
Dimensions	Recruiting Talents	4	0.729
	Retaining Talents	4	0.736
	Talent Development	4	0.785
	Talent Management and Evaluation	4	0.708
Dependent variable: Psychological Capital	16	0.759	0.871
Dimensions	Self-efficacy	4	0.824
	Optimism	4	0.778
	Hope	4	0.73
	Flexibility	4	0.732
Mediating variable: Organizational Justice	9	0.797	0.893
Dimensions	Distributive justice.	3	0.811
	Procedural justice.	3	0.734
	Interactive justice.	3	0.756
Total	41	0.876	0.936

It is clear from the table that, value of the Cronbach's Alpha coefficient for all research variables and its dimensions exceeds 0.7, which is acceptable (high value) thus research tool enjoy high level of stability & internal consistency. On the other hand, validity coefficient for all research variables with all of its dimensions exceeds 0.8, and this value is considered acceptable and high as well. Accordingly, values of reliability & validity coefficients for the whole research tool is acceptable, therefore research tool can actually measure what it supposed to measure.

11.2 Distribution of Research Sample.

In the following section the researcher will analyze research sample based on some personal & occupational characteristics for employees & workers working within the Egyptian pharmaceutical sector. Distribution of research sample can be represented in the following table.

Table 2: Distribution of Research Sample.

Personal & Functional Factors	Criteria	Frequencies	Percentage %	Ranking
Gender	Male	202	78	1
	Female	57	22	2
	Total	259	100	
Age	Less than 30	31	12	3
	30 to 40	171	66	1
	40 to 50	35	13.5	2
	More than 50	22	8.5	4
	Total	259	100	
Academic Qualification	PhD	66	25.5	2
	MA	48	18.5	4
	BA	61	23.5	3
	Intermediate Diploma	84	32.5	1
	Total	259	100	
Management Level	First-Line Management	131	50.5	1
	Middle Management	74	28.5	2
	Top Management	54	21	3
	Total	259	100	
Job Title	General Manager	6	2	9
	Deputy General Manager	7	3	8
	Department Manager	9	3	7
	Deputy Department Manager	15	6	5
	Supervisor	51	20	2
	Production Technician	103	40	1
	Store Manager	16	6	4
	Storekeeper	13	5	6
	Worker	39	15	3
	Total	259	100	

It is clear from the previous table that; majority of research sample members were males representing about 78%. Also, majority of research sample fall in an age stage that lies between 30 & 40 years, their number reached 171 member representing about 66% from the whole research sample. Regarding academic qualifications, about 32.5% of research sample holds an intermediate diploma while 25.5% of them holds PhD degree. With respect to managerial level of research sample, majority of sample members belong to first-line management level, their number reached 131 member representing about 50.5% from the whole research sample. Finally, regarding job title majority of research sample hold the position of production technician, their number reached 103 member representing about 40% from the whole research sample.

11.3 Descriptive Statistics for Research Variables.

In this section, the researcher will discuss some statistical indicators in order to describe respondent responses regarding different questions included in research tool. This will be done in order to know relative importance of different questions mentioned in the questionnaire, and also to know general trends of respondent's responses so as to test any mediating role that organizational justice might perform in shaping the relationship between talent management practices and psychological capital in the Egyptian pharmaceutical sector.

Independent Variable: Talent Management Practices.

Sample member's opinions regarding talent management practices can be represented in the following table:

Table 3: Mean & S.D for Talent Management Practices.

N	Questions	Means	S.D	Order	General Trend
First: Recruiting Talents					
1	Company's management almost search for talented people to select them as new members in the company.	4.448	0.658	1	Comp Agree
2	Company's management involve talented people in developing strategic plans.	4.000	0.953	2	Agree
3	Company's management objectively select candidates through matching their competencies and qualifications with the nature of vacant positions.	3.908	0.698	3	Agree
4	Company's management works to encourage internal talents through spreading creativity and innovation spirit.	3.569	0.624	4	Agree
Dimension Mean		3.981		Agree	

Second: Retaining Talents					
1	In case of downsizing, company's management insists to keep talented employees.	4.197	0.564	1	Agree
2	In case of employee's promotion, Company's management supports talented employees and gives them priority to occupy leadership positions.	4.046	0.536	2	Agree
3	Company's management follow an efficient incentive program for talented employees.	3.795	0.857	3	Agree
4	Company's management care about investing in intellectual energies of talented people in order to maximize their benefits.	3.452	1.075	4	Agree
Dimension Mean		3.872		Agree	
Third: Talent Development					
1	Company's management works to provide special training programs to develop talented employees' capabilities.	4.226	0.510	1	Comp Agree
2	Company's management provides opportunity for talented employees to participate directly in managing and developing new projects.	4.138	0.559	2	Agree
3	Regarding talented employees, company's management follow an efficient package of financial and moral incentives.	3.619	0.913	3	Agree
4	Company's management try to stimulate and spread enthusiasm spirit among employees in order to discover and refine talents.	3.464	1.087	4	Agree
Dimension Mean		3.862		Agree	
Fourth: Talent Management and Evaluation					
1	Company's management follow a scientific professional system in employing, promoting, and rotating talented people.	4.285	0.470	1	Comp Agree
2	Company's management is keen to involve employees in performance appraisal process.	4.084	0.559	2	Agree
3	Company's management utilize performance appraisal outputs to identify talented employees training needs.	3.946	0.566	3	Agree
4	Company's management utilize performance appraisal outputs to close performance gaps.	3.347	1.029	4	Quite Agree
Dimension Mean		3.915		Agree	
Overall Mean of Talent Management		3.908		Agree	

From the previous table it is clear that, sample members' opinions regarding first dimension & third dimension of talent management practices (recruiting talents & talent development) fall between completely agreement and agreement; mean values exceed 3.4 with low standard deviation values reflecting low dispersion between sample members' opinions. Considering the second dimension of talent management practices (retaining talents) sample members' opinions represent agreement with mean values fall between 3.4 & 4.19 with low standard deviation values. Regarding the last dimension of talent management practices (talent management & evaluation) it is clear that sample members' opinions fall between completely agreement & quite agreement, mean values exceed 2.6, general trend for this dimension was agreement with mean value reaching 3.915. Generally, overall mean for all questions related to talent management practices represent agreement with a mean value of 3.908.

Dependent Variable: Psychological Capital.

Sample member's opinions regarding Psychological Capital can be represented in the following table:

Table 4: Mean & S.D for Psychological Capital.

N	Questions	Mean	S.D	Order	General Trend
First: Self-Efficacy					
1	I can represent my team's work in different meetings.	4.557	0.677	1	Comp. Agree
2	I feel confident when assigned a new task that I have never done before.	4.339	0.892	2	Comp. Agree
3	I can solve organizational problems with all parties.	4.138	0.596	3	Agree
4	I can bear work responsibilities and perform difficult & critical tasks.	3.954	0.851	4	Agree
Dimension Mean		4.247		Comp Agree	
Second: Optimism					
1	I feel optimistic about my future career path inside the organization.	4.690	0.598	1	Comp. Agree
2	"Let's try again" is my principal in case of failure.	4.431	0.663	2	Comp. Agree
3	I expect the best scenario when organizational matters are unstable.	4.243	0.917	3	Comp. Agree

4	I always try to see the bright/positive side in my work.	4.029	0.832	4	Agree
Dimension Mean		4.348			Comp Agree
Third: Hope					
1	I always try to turn work problems into opportunities and challenges.	4.544	0.584	1	Comp. Agree
2	I can objectively deal with work problems and pressures.	4.460	0.743	2	Comp Agree
3	I have tremendous energy to achieve my goals within the organization.	4.146	0.692	3	Agree
4	I feel that I have achieved great successes in my career.	3.829	1.057	4	Agree
Dimension Mean		4.245			Comp Agree
Fourth: Flexibility					
1	I can adapt with different colleagues' behavior inside the organization.	4.640	0.605	1	Comp. Agree
2	I always strive to find different ways to improve my performance level.	4.502	0.755	2	Comp. Agree
3	I can adapt with new & different work systems within the organization.	4.222	0.754	3	Comp. Agree
4	Work problems aren't an obstacle to turn back to enthusiasm.	4.071	0.830	4	Agree
Dimension Mean		4.359			Comp Agree
Overall Mean of the Variable		4.30			Comp Agree

From the previous table it is clear that, sample members' opinions regarding first, second, third, and fourth dimension of psychological capital (self-efficacy, optimism, hope, flexibility) fall between completely agreement and agreement; mean values exceed 3.4 with low standard deviation values reflecting low dispersion between sample members' opinions. Overall mean of all questions related to psychological capital represents completely agreement with a whole mean value of 4.30.

Mediating Variable: Organizational Justice.

Sample member's opinions regarding organizational justice can be represented in the following table:

Table 5: Mean & S.D for Organizational Justice.

N	Questions	Means	S.D	Order	General Trend
First: Distributive Justice					
1	System followed by Company's management in making and taking job decisions is characterized by fairness and transparency.	4.398	0.906	1	Comp. Agree
2	System followed by Company's management in distributing job duties and responsibilities is characterized by fairness and transparency.	4.100	0.943	2	Comp. Agree
3	System followed by Company's management in distributing rewards and incentives is characterized by fairness and transparency.	3.222	1.083	3	Quite Agree
Dimension Mean		3.907		Agree	
Second: Procedural Justice					
1	Before taking any administrative/job decisions related to employees, Company's management is keen to collect complete, full, and accurate information.	4.418	0.728	1	Comp. Agree
2	Without employees request, Company's management is keen to disclose and clarify all administrative and job decisions taken.	4.381	0.967	2	Comp. Agree
3	List of administrative penalties and punishments is proportional to the extent of violations and transgressions.	4.025	0.820	3	Agree
Dimension Mean		4.275		Comp. Agree	
Third: Interactive Justice					
1	Company's management keen to explain & justify reasons behind different decisions.	4.213	0.704	1	Comp. Agree
2	Company's management consider employee's opinion regarding their job decisions and keen to discuss with them all results & consequences.	4.201	0.675	2	Comp. Agree
3	Company's management keen to resolve objectively without biases organizational conflicts between employees.	3.891	0.598	3	Agree
Dimension Mean		4.102		Agree	
Overall Mean		4.094		Agree	

From the previous table it is clear that, sample members' opinions regarding first dimension of organizational justice (Distributive Justice) fall between completely agreement and quite agreement; mean values fall between 2.6 & 4.2 with low standard deviation values reflecting low dispersion between sample members' opinions. Regarding the second & third dimensions of organizational justice (Procedural Justice & Interactive Justice) sample members' opinions fall between completely agreeing and agreeing, this was evident by mean values that exceed 3.4, general trend for these two dimensions was completely agreeing & agreeing with mean values of 4.275 & 4.102 respectively. Overall mean of all questions related to organizational justice represents agreement with a whole mean value of 4.094.

11.4 Testing Research Hypotheses.

First main hypothesis of this research states that “there is a statistical significant relationship between talent management practices and level of organizational justice revealed in the Egyptian pharmaceutical companies”. In order to test this main hypothesis, path analysis was conducted in order to prove/deny this hypothesis. Results of path analysis can be represented as follows:

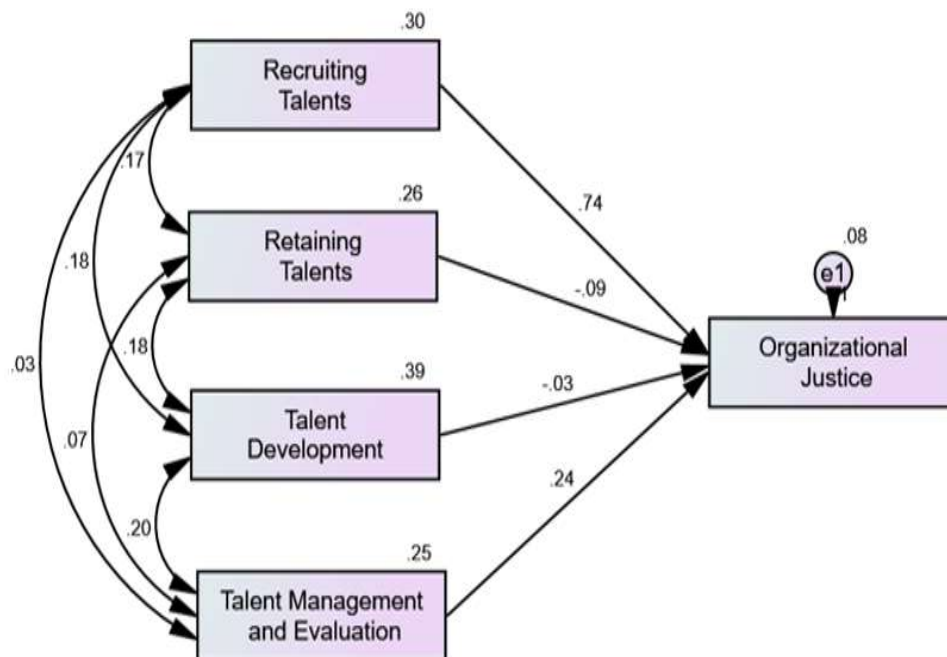


Figure 3: Path Analysis for Testing the First Main Hypothesis.

Table 6: Path Analysis Results of the First Main Hypothesis.

Independent Variables	Direction	Mediating Variable	Estimate	Standard Error	Calculated T- value (C.R.)	Sig. (P-value)
Recruiting Talents	→	Organizational Justice	.740	.044	16.638	***
Retaining Talents	→	Organizational Justice	-.089	.048	-1.840	.066
Talent Development	→	Organizational Justice	-.031	.049	-.623	.533
Talent Management & Evaluation	→	Organizational Justice	.241	.050	4.825	***

Previous table & figure revealed that, with respect to the first dimension of talent management practices (recruiting talents), value of regression coefficient was .740; which indicates existence of positive significant relationship between recruiting talents practices and organizational justice, level of Sig. (P-value) was less than 0.001, which is less than the significance level of 0.05. With respect to the second dimension of talent management practices (retaining talents), value of regression coefficient was -.089; which indicates existence of negative non-significant relationship between retaining talents practices and organizational justice, level of Sig. (P-value) was .066, which is greater than the significance level of 0.05.

Considering the third dimension of talent management practices (talent development), value of regression coefficient was -.031, which indicates existence of negative non-significant relationship between talent development practices and organizational justice, level of Sig. (P-value) was .533, which is greater than the significance level of 0.05. Finally, with respect to the last dimension of talent management practices (talent management & evaluation), value of the regression coefficient was .241, which indicates the existence of a positive direct relationship between talent management & evaluation practices and organizational justice result of t-test indicates that this relationship is significant, level of Sig. (P-value) was less than 0.001, which is less than the significance level of 0.05.

Second main hypothesis of this research states that “there is a statistical significant relationship between level of organizational justice revealed in the Egyptian pharmaceutical companies and psychological capital”. In order to test this main hypothesis, path analysis was conducted in order to prove/deny this hypothesis. Results of path analysis can be represented as follows:

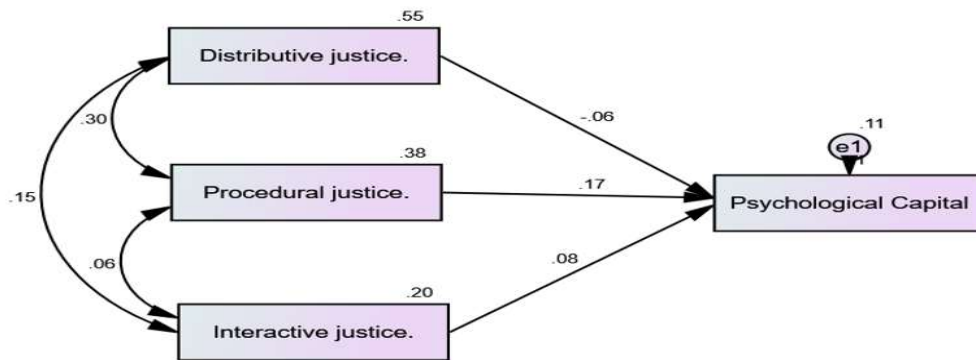


Figure 4: Path Analysis for Testing the Second Main Hypothesis.

Table 7: Path Analysis Results of the Second Main Hypothesis.

Mediating Variables	Direction	Dependent Variable	Estimate	Standard Error	Calculated T-value (C.R.)	Sig. (P-value)
Distributive Justice.	→	Psychological Capital	-.060	.042	-1.437	.151
Procedural Justice.	→	Psychological Capital	.167	.046	3.654	***
Interactive Justice.	→	Psychological Capital	.084	.053	1.596	.110

Previous table & figure revealed that, with respect to the first dimension of organizational justice (distributive justice), value of regression coefficient was $-.060$, which indicates existence of negative direct relationship between distributive justice and psychological capital. Result of t-test indicates that this relationship is non-significant, as the level of Sig. (P-value) reached $.151$, which is greater than the significance level of 0.05 . Considering the second dimension of organizational justice (procedural justice), value of regression coefficient was $.167$, which indicates existence of positive significant relationship between procedural justice and psychological capital, level of Sig. (P-value) was less than 0.001 , which is less than the significance level of 0.05 .

Finally, with respect to the third dimension of organizational justice (interactive justice), value of regression coefficient was $.084$, which indicates existence of positive direct relationship between interactive justice and psychological capital. Result of t-test indicates that this relationship is non-significant, level of Sig. (P-value) reached $.110$, which is greater than the significance level of 0.05 .

Third main hypothesis of this research states that “There is a statistical significant relationship between talent management practices and level of psychological capital revealed in the Egyptian pharmaceutical companies”. In order to test this main hypothesis, path analysis was conducted in order to prove/deny this hypothesis. Results of path analysis can be represented as follows:

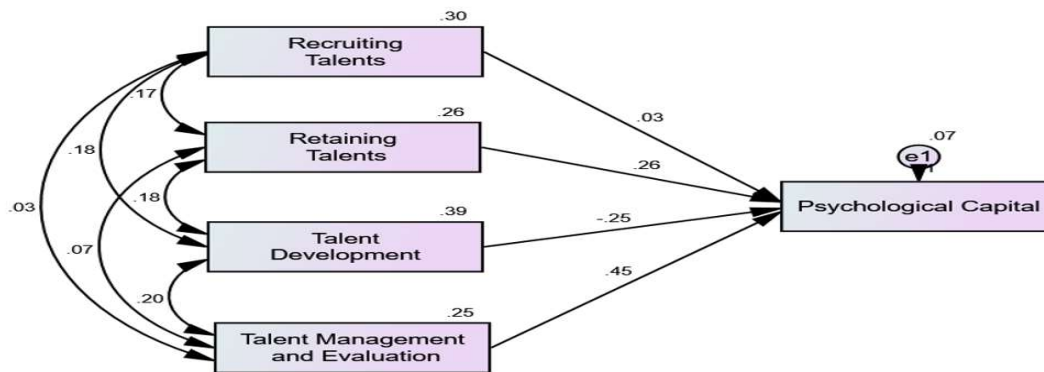


Figure 5: Path Analysis for Testing the Third Main Hypothesis

Table 8: Path Analysis Results of the Third Main Hypothesis.

Independent Variables	Direction	Dependent Variable	Estimate	Standard Error	Calculated T-value	Sig. (P-value)
Recruiting Talents	→	Psychological Capital	.027	.043	.624	.533
Retaining Talents	→	Psychological Capital	.261	.047	5.581	***
Talent Development	→	Psychological Capital	-.250	.047	-5.284	***
Talent Management & Evaluation	→	Psychological Capital	.453	.048	9.368	***

Previous table & figure revealed that, with respect to the first dimension of talent management practices (recruiting talents), value of regression coefficient was .027; which indicates existence of positive direct relationship between recruiting talents and level of psychological capital. Result of t-test indicates that this relationship is non-significant, level of Sig. (P-value) reached .533, which is greater than the significance level of 0.05. With respect to the second dimension of talent management practices (retaining talents), value of regression coefficient was .261; which indicates existence of positive significant relationship between retaining talents practices and level of psychological capital, level of Sig. (P-value) is less than 0.001, which is less than the significance level of 0.05.

Considering the third dimension of talent management practices (talent development), value of regression coefficient was $-.250$, which indicates existence of negative significant relationship between talent development practices and psychological capital, level of Sig. (P-value) was less than 0.001 , which is less than the significance level of 0.05 . Finally, with respect to the last dimension of talent management practices (talent management & evaluation), value of the regression coefficient was $.453$, which indicates the existence of a positive direct relationship between talent management & evaluation practices and psychological capital, result of t-test indicates that this relationship is significant, level of Sig. (P-value) was less than 0.001 , which is less than the significance level of 0.05 . Accordingly, the researcher can insist positive/direct relationship between talent management practices and level of psychological capital revealed in the Egyptian pharmaceutical sector.

Fourth main hypothesis of this research states that “levels of organizational justice revealed in the Egyptian pharmaceutical companies might shape the relationship between talent management practices and psychological capital”. In order to test this main hypothesis, path analysis was conducted in order to prove/deny this hypothesis. Results of path analysis can be represented as follows:

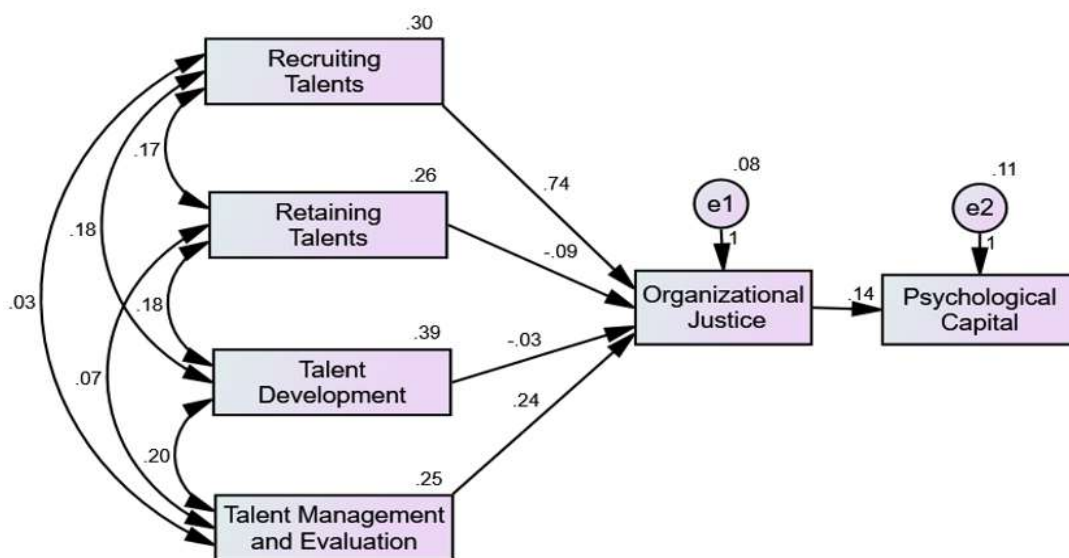


Figure 6: Path Analysis for Testing the Fourth Main Hypothesis.

Table 9: Path Analysis Results of the Fourth Main Hypothesis.

Independent variables	D	Mediating Variable	D	Dependent Variables	Estimate	Lower Bounds	Upper Bounds	Sig. (P-value)
Recruiting Talents	→	Organizational Justice	→	Psychological Capital	.103	0.37	.169	.005
Retaining Talents	→	Organizational Justice	→	Psychological Capital	-.012	-.039	.004	.112
Talent Development	→	Organizational Justice	→	Psychological Capital	-.004	-.031	.011	.562
Talent Mgt & Evaluation	→	Organizational Justice	→	Psychological Capital	.034	.010	.077	.003

Previous table & figure revealed that, in the presence of organizational justice as a mediating variable, value of regression coefficient was .103, which indicates positive significant relationship between the first dimension of talent management practices (recruiting talents) and level of psychological capital revealed in the Egyptian pharmaceutical company, level of Sig. (P-value) reached .005, which is less than the significance level of 0.05. Also in the presence of organizational justice as a mediating variable, value of regression coefficient was -.012, which indicates negative relationship between the second dimension of talent management practices (retaining talents) and level of psychological capital, this relationship is non-significant, as the level of Sig. (P-value) reached .112, which is greater than the significance level of 0.05.

Regarding the third dimension of talent management practices, value of regression coefficient was -.004, which indicates negative relationship between talent development and level of psychological capital in the presence of organizational justice as a mediating variable. Result of t-test indicates that this relationship is non-significant, level of Sig. (P-value) reached .562, which is greater than the significance level of 0.05. Finally, in the presence of organizational justice as a mediating variable, value of regression coefficient between the fourth dimension of talent management practices & psychological capital was .034, which indicates positive significant relationship between talent management & evaluation and psychological capital, level of Sig. (P-value) reached .003, which is less than the significance level of 0.05.

12. Findings & Recommendations.

As mentioned before, the Egyptian pharmaceutical sector considered as one of critical sectors through which Egypt can achieve its vision of 2030; the Egyptian pharmaceutical sector is one of the oldest production sectors in Egypt as its initiation goes back to the establishment of Misr pharmaceutical company in 1934. From an investment scope, Egyptian market has many competitive advantages represented in its strategic location

among all countries around the world. Due to large & continuous population growth, local & foreign investments rates in the Egyptian pharmaceutical sector are expected to increase rapidly.

Considering the relationship between talent management practices and level of organizational justice revealed in Arab drug & chemicals industries company, previous statistical analysis revealed that, there is a positive significant impact of both talent recruitment dimension and talent management & evaluation dimension on the level of organizational justice with a confidence level of 95%. On the other hand, no significant impact was found between both retaining talents dimension and talent development dimension on the level of organizational justice.

Considering the relationship between level of organizational justice revealed in Arab Drug & Chemicals Industries company and psychological capital, previous statistical analysis revealed that, there is a positive significant impact of procedural justice dimension on the level of psychological capital with a confidence level of 95%. On the other hand, no significant impact was found between both distributive justice dimension and interactive justice dimension on the level of psychological capital revealed in Arab drug & chemicals industries company.

Considering the relationship between talent management practices and level of psychological capital revealed in Arab drug & chemicals industries company, previous statistical analysis revealed that, there is a positive significant impact of both retaining talents dimension and talent management & Evaluation dimension on the level of psychological capital with a confidence level of 95%. Also, significant negative impact was found between talent development dimension and level of psychological capital revealed in Arab drug & chemicals industries company. Finally, no significant impact was found between talent recruitment dimension and level of psychological capital.

Regarding the mediating role of organizational justice, previous statistical analysis revealed that there is a positive significant impact of both talent recruitment dimension and talent management & evaluation dimension on the level of psychological capital in the presence of organizational justice as mediating variable with a confidence level of 95%. On the other hand, no significant statistical impact was found between both retaining talents dimension and talent development dimension and the level of psychological capital in the presence of organizational justice as mediating variable within Arab drug & chemicals industries company. These results can be summarized in the following table.

Table 10: Impact of Organizational Justice as a Mediating Variable.

Talent Management Practices → Psychological Capital			
		In Presence of Organizational Justice as a Mediating Variable	In Absence of Organizational Justice as a Mediating Variable
Recruiting Talents >>>>	Psychological Capital	Positive, Significant	Positive, Non-Sig
Retaining Talents >>>>	Psychological Capital	Negative, Non-Sig	Positive, Significant
Talent Development >>>>	Psychological Capital	Negative, Non-Sig	Negative, Significant
Talent Mgt & Evaluation >>>>	Psychological Capital	Positive, Significant	Positive, Significant

In summary, in absence of organizational justice as a mediating variable, no significant impact was found between recruiting talents dimension & level of psychological capital revealed in Arab drug & chemicals industries company. Also, in absence of organizational justice, significant impact was found between remaining dimension of talent management practices (retaining talents, talent development, and talent management & evaluation dimension) and level of psychological capital revealed in Arab drug & chemicals industries company. On the other hand, in presence of organizational justice as a mediating variable, significant impact was found between both recruiting talents dimension & talent management and evaluation dimension and level of psychological capital revealed in Arab drug & chemicals industries company. However, in presence of organizational justice as a mediating variable, no significant impact was found between both retaining talents dimension & talents development dimension and level of psychological capital revealed in Arab drug & chemicals industries company.

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