Submitted in January 2026
Accepted in June 2026
Published Online in June 2026
https://doi.org/10.64190/abj.2026.28
https://aradojournal.org/

The Impact of Human Resource Agility on Continuous Improvement in the Pharmaceutical Industry in Palestine

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Abstract

This study aimed to identify the impact of human resource agility-across its dimensions of adaptability, flexibility, sensing, creativity in problem-solving, and learning of work skills-on continuous improvement, across its dimensions of planning, implementation, and evaluation of the continuous improvement process, within the pharmaceutical industry in Palestine. The descriptive-analytical method was employed. The study population comprised managers and department heads in the West Bank pharmaceutical industry, specifically in the following companies: Birzeit Pharmaceuticals, Dar Al-Shifa Pharmaceutical Industry, Sama Pharmaceutical Industry, and Beit Jala Pharmaceutical Industries. The total population numbered 87 individuals, to all of whom the study instrument was distributed. Al-Quds Pharmaceutical Company declined to complete the questionnaires. A total of 80 questionnaires valid for statistical analysis were retrieved.

The study concluded that the state of human resource agility in the pharmaceutical industry in Palestine was at a high level, with an overall arithmetic mean of (3.79). The flexibility dimension obtained the highest arithmetic mean (4.11) with a high response level, while the creativity in problem-solving dimension obtained the lowest arithmetic mean (3.67), also with a high response level. The level of continuous improvement was likewise high, with an overall arithmetic mean of (3.84). The planning of the continuous improvement process obtained the highest arithmetic mean (4.00), while the implementation of the continuous improvement process obtained the lowest arithmetic mean (3.97). A statistically significant effect was found at the significance level ($\alpha \leq 0.05$) of human resource agility on continuous improvement across all its dimensions in the pharmaceutical industry in Palestine. Consequently, the null hypothesis was rejected and the alternative hypothesis was accepted.

The researchers recommended the necessity of implementing flexible working hours, launching small self-managed projects within each department, creating a central dashboard that consolidates the company's sales data, issuing a monthly electronic newsletter containing summaries of research, regulations, and modern technologies

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Citation: Al-Swaity, S., & Dawabsheh, T. S. (2026). The Impact of Human Resource Agility on Continuous Improvement in the Pharmaceutical Industry in Palestine. *ARADO Business Journal*, 3(1), 129 - 164. https://doi.org/10.64190/abj.2026.28.

in the pharmaceutical industry, and forming joint improvement teams drawn from production, quality, and marketing to formulate improvement plans and present their progress reports to the board of directors.

Keywords: Human Resource Agility; Continuous Improvement; Pharmaceutical Manufacturing; Palestine.

Introduction

Organizations and companies strive to respond to market changes and to adapt flexibly to unanticipated environmental shifts in order to survive in the market in the face of unprecedented threats arising from the business environment-and, in this context, the Palestinian environment-through forecasting, interacting with, and responding to fluctuations in these markets in ways that create a competitive advantage. Such a response is characterized by speed, flexibility, and responsiveness to changes in both the internal and external environments, so that the organization is able to respond effectively to the changes that may occur within them.

Organizations operate within a dynamic, fast-moving environment that requires rethinking their available human resources by helping to develop the core competencies that enable these resources to maintain focus and perform well in current and future roles-particularly with regard to developing their core competencies, which is essential for improving their performance, empowering them, and increasing their efficiency within a changing or agile context aimed at performance improvement. Given that changing organizations have become the norm rather than the exception, the agility of the human element has consequently become the norm as well (Jager et al., 2019).

The effective utilization of human resource agility is often a decisive factor for organizations in achieving long-term success and outperforming their competitors. Organizations rely heavily on the agility of their human resources, for human resource agility is the capacity of these resources to perform critical, organized, and flexible roles in the face of changes that continuously occur in the environment, thereby reducing the effort and time required to perform activities and minimizing the waste of resources in order to raise the level of performance and to enhance the capabilities required to adapt to the changes occurring within the organization's work contexts (Khader et al., 2023).

Accordingly, agile organizations are capable of meeting customer needs and developing new, high-quality products with a high competitive capacity. The human element is an important component for rapidly developing employees' knowledge, ideas, judgment, and collaboration in a manner commensurate with new working conditions-a phenomenon referred to as "human resource agility" or "individual agility." Human resource agility is therefore of paramount importance and carries practical implications for the direct approaches used to intervene in the technological, cultural, and regulatory changes required by the organization (Almahamid, 2018).

Herein lies the importance of human resource agility within organizations: through the reshaping of the workforce to adapt to conditions of adaptive and creative behavior within the organization, and the inclination toward learning and supporting the activities that must be prioritized within the organization. Agility is considered an important factor in enhancing the capabilities employees possess to adapt appropriate-

ly to environmental changes, in order to benefit from them for the company's interest. Consequently, employee agility is distinguished by new variables and high, continually renewed technologies that compel employees to engage in continuous learning and assimilation, given that capabilities are the foundation of human resources for those who possess multiple skills enabling them to continuously reorganize themselves, communicate reliably with one another, and assume responsibility (Cai et al., 2018).

Continuous improvement depends on making changes in a gradual and ongoing manner in order to reduce waste of time and resources, while simultaneously achieving quality and developing employee performance within the organization. Such continuous improvement is achieved only when an appropriate organizational culture is in place (Bilal & Al-Dab, 2023). Continuous improvement is thus "a methodological pillar of quality" that seeks perfection in operations through continuous improvement across all production processes. Furthermore, continuous improvement efforts must not cease, as there are always opportunities for continuous improvement that must be seized-thereby drawing management's attention to selecting the means by which employees and managers can be motivated, in order to provide methods that would reduce the cost of the service or product.

In light of the foregoing, continuous improvement is a process that constitutes the foundation of quality management; its methodology rests upon introducing ongoing improvements across all facets of the organization so that it may adapt to the variables of the organization's internal and external environment. This is achieved by affording employees the opportunity to participate with management in its decisions and meetings, and by participating in training programs-particularly training these employees in fields outside their specialization-and quality control. Continuous improvement is therefore regarded as the backbone of Total Quality Management (Al-Samadi & Al-Hayali, 2021).

Studies indicate the growing importance of human resource agility and its active role in improving performance and competitiveness across various sectors. The study by Ibrahim (2018) clarified that high-performance human resource practices contribute to enhancing workforce agility and support job-related creativity in pharmaceutical companies, while the study by Abu Al-Khail (2023) demonstrated a positive effect of organizational agility on the competitive advantage of pharmaceutical companies, with a prominent role for top management support. The study by Al-Shanti (2021) also revealed a high level of strategic agility in Palestinian pharmaceutical companies and its direct effect in enhancing competitive advantage in the pharmaceutical sector in Palestine. Likewise, the study by Attiany (2024) demonstrated the positive effect of human resource agility on innovative performance, while the study by Obaid et al. (2023) confirmed the existence of a close relationship between human resource agility and strategic renewal. These findings support the need to study human resource agility in the Palestinian pharmaceutical industry in order to understand its role in continuous improvement and in enhancing institutional performance, especially given that the majority of these studies recommend further research into the relationship between human resource agility and institutional performance.

It is from this point that the present study emerged, seeking to identify the role of human resource agility in continuous improvement in the pharmaceutical industry in Palestine.

Theoretical Framework and Previous Studies

Human Resource Agility: This refers to the capacity of human resources to develop their competencies through knowledge, experience, and the application of skills in order to respond rapidly to, and keep pace with, internal and external changes within a proactive framework-and to undertake activities related to adaptability and flexibility for the purpose of capitalizing on opportunities and achieving objectives (Younes & Al-Dreini, 2024).

Human resource agility thus expresses the dynamic capability of employees in pharmaceutical companies to adapt rapidly to changes, to be flexible in performing tasks, to engage in early sensing of opportunities and threats, to be creative in problem-solving, and to continuously learn work skills-thereby enhancing effective responsiveness to the requirements of a changing environment and reducing the time, effort, and resources expended.

Dimensions of Human Resource Agility

Adaptability: This has been defined as the capacity to accept new ideas and technologies accompanying changes in a flexible and comfortable manner, through the individual's ability to deal with change and to share knowledge and experience while performing different tasks according to work requirements. Adaptability is considered one of the fundamental attributes that enable individuals to adjust their behavior in a manner consistent with changes in the surrounding environment, with the aim of achieving the best possible fit. Adaptability encompasses several aspects, such as personal adaptation and cultural adaptation-that is, the ability to deal effectively with individuals belonging to diverse environments, backgrounds, and experiences (Ahmad, 2022).

In this context, it is essential that employees in pharmaceutical companies in Palestine continuously strive to develop their skills and knowledge in order to keep pace with market changes. This awareness is reflected in their effective collaboration within work teams, where they perform diverse tasks in harmony and coherence, drawing upon a deep understanding of complex ideas that supports their ability to adapt effectively to the continuously changing requirements of the work environment within the Palestinian reality. Rapid adaptation is likewise manifested in employees' ability to benefit from the surrounding shifts-from adjusting their work schedules to meet customer demands, to adopting new ideas employed in improving services and products within these companies.

Flexibility: Flexibility refers to the capacity of human resources to facilitate and ease the organization's adaptation to changes arising in its internal and external environment, at appropriate times and in an effective manner. It is considered a fundamental factor in human resource management practices through enhancing communication within and outside the organization, and developing job-related skills, thereby contributing to the achievement of innovation and creativity (Al-Ammar, 2024).

Flexibility, as one of the dimensions of human resource agility, represents the pulse of life in the dynamics of employee performance in pharmaceutical companies in Palestine. The breadth of freedom afforded to employees in choosing the methods of executing their tasks grants them sufficient confidence to explore innovative mecha-

nisms and to adopt new approaches that contribute to elevating their professional levels. When conditions fluctuate unexpectedly-in accordance with the Palestinian situation-these employees remain capable of working efficiently and calmly, transforming every emerging change into opportunities for learning and growth.

Sensing: This is the organizational capacity to monitor and detect events and changes in the surrounding environment-particularly changes in customer preferences, competitors' orientations, and other external factors-with a focus on the opportunity dimension, as it represents the organization's ability to perceive, identify, and exploit environmental opportunities (Al-Aqra', 2022).

Sensing grants employees a superior ability to immerse themselves in the pulse of the surrounding environment. Their role is not confined merely to following developments within their fields of work, but extends to accurately forecasting opportunities that may support the company's performance and lead to enhancing its competitiveness. Employees continuously gather data related to markets and internal operations, and utilize it in charting a roadmap of future orientations that enables them to detect problems before they occur-thereby allowing the development of effective proactive strategies.

Creativity in Problem-Solving: The use of thinking skills with the aim of arriving at a decision regarding the best solutions, encompassing any effort exerted by an individual or group in creative thinking with the aim of solving a particular problem. This process passes through specific stages including identifying the problem, gathering data, defining the problem, generating ideas, arriving at a solution, and accepting it-thereby enhancing individuals' ability to excel in confronting challenges. The creative solution constitutes a leap between reality and aspiration, given the impetus it provides to continue working (Hajras, 2015).

Creativity in problem-solving expresses the ability of pharmaceutical companies in Palestine and their employees to overcome the obstacles confronting them in an effective and innovative manner. These employees begin by offering creative solutions to confront daily challenges, supported by an effective communication system that ensures the circulation of ideas and their enrichment with data and constructive observations. Work teams further enhance this dimension of agility through continuous collaboration and the exchange of cumulative experiences within these companies, enabling them to formulate new ideas and solutions stemming from their shared experiences.

Learning of Work Skills: Employees learn new methods and skills for performing jobs or tasks through the training programs provided by the organization, which constitute the fundamental pillar for human resources that keep pace with rapid developments and assist in training employees to re-prepare for a new job or profession within the organization (Al-Aramiti, 2020).

The learning of work skills enables employees in Palestinian pharmaceutical companies to acquire new methods for performing their tasks through the training programs provided by their managements to improve their performance and develop their capabilities. These programs contribute to enhancing collaboration among colleagues, with each sharing their expertise and exchanging specialized knowledge in a manner

commensurate with their needs, thereby creating a continuous learning environment for these employees.

Continuous Improvement: Continuous improvement is considered one of the most important principles of Total Quality Management according to the Japanese school of management, and it is regarded as the essence of this school's philosophy in development and in building the innovative capabilities of human resources. Marshall Brown defines continuous improvement as a gradual, incremental enhancement of an existing process, with a focus on doing the right thing the first time, whereby the responsibility for this work rests upon all employees. Deming likewise defined it as a philosophy consisting of initiatives that increase success and reduce failure, and as a broad-scale process of focus and continuous, incremental innovation (Hawamdeh & Bani Ahmad, 2015).

Dimensions of Continuous Improvement

The dimensions of continuous improvement are confined to the following:

- **Planning for the Continuous Improvement Process:** This is manifested through a set of clear and simple procedures that the organization undertakes on an ongoing basis in order to raise its performance across various aspects and to reduce waste so as to achieve the desired objectives (Jaflan, 2023).

  Planning for the continuous improvement process constitutes the solid foundation from which all development steps emanate in the Palestinian pharmaceutical companies sector. It begins with a precise analysis of market data and customer performance, and openness to the views of pharmacies and suppliers to ensure the quality of inputs and their suitability to the genuine need. This is then embodied in setting clear objectives and a flexible timeline that balances cost reduction with enhancing competitive capacity and raising the level of customer satisfaction-while involving relevant employees at every stage to ensure cohesion and the gradual accumulation of improvements in alignment with the company's general strategies.

- **Implementation of the Continuous Improvement Process:** This represents the practical extension of the plans previously laid out in the planning phase, whereby the team begins applying the agreed-upon developmental steps aimed at improving the quality of processes or products. Implementation is not confined merely to modifying existing processes, but also includes providing the necessary training for employees, raising their awareness of new roles, and applying specific controls to prevent potential problems. Often, the program is first implemented on a pilot sample to measure its effectiveness, whereby observations are recorded and subsequently used to improve operational performance on a continuous basis (Ali, 2023).

  Implementing the continuous improvement process requires precise adherence to the established timeline and the provision of all resources, tools, and technologies necessary to ensure the effective application of plans, with continuous monitoring of surrounding environmental variables to avoid any obstacles that may negatively affect the course of work. Accordingly, the management of Pal-

estinian pharmaceutical companies should design pharmaceutical products in the best possible manner and adopt best practices in drug manufacturing, while emphasizing the full achievement of continuous improvement indicators and investing resources efficiently to reduce costs without compromising quality.

- **Evaluation of the Continuous Improvement Process:** The evaluation of continuous improvement is considered one of the fundamental elements of the managerial process, expressing the organization's ability to accomplish its specified objectives within a given time period. It is used as a control tool aimed at appraisal, and subsequently adjustment and correction in accordance with the results achieved. The effectiveness of evaluation systems is not confined merely to measuring performance, but also includes gathering and analyzing data with the aim of determining the extent to which objectives have been achieved, making decisions related to areas of weakness, and reinforcing areas of strength, so as to ensure sound growth (Alwan, 2024).

  The evaluation of the continuous improvement process constitutes the genuine guarantee of the success of development efforts. The management of Palestinian pharmaceutical companies begins by gathering and analyzing feedback from customers and harnessing its results in calibrating the course of improvement. It then compares actual results with planned objectives in order to identify any gaps or negative deviations, working to address them without delay, and reviewing the repercussions of this process on costs in order to offer pharmaceutical products at competitive prices. In addition, it evaluates the quality level of new products relative to its competitors in the market. These integrated steps enable companies to gain an accurate reading of their efficiency, effectiveness, and capacity for innovation and competitive distinction, thereby ensuring sound growth and sustainability in the institutional performance of Palestinian pharmaceutical companies.

Previous Studies

Ibrahim (2018) aimed to uncover the role of high-performance human resource practices in enhancing workforce agility and employee creativity in companies of the public business sector for pharmaceutical industries in Egypt. The researcher proceeded from a study population comprising all employees in these companies, selecting a sample of 241 employees using the stratified random method, and adopted the descriptive-analytical method employing the questionnaire instrument. The findings revealed that the level of human resource agility in the companies was high, and that high-performance human resource practices-represented in comprehensive training, internal job mobility, job security, work design, results-based performance appraisal, motivational rewards, and participation-positively and significantly affect workforce agility, and also have a direct, significant positive effect on employee creativity, while workforce agility plays a partial mediating role in the relationship between these practices and individual creativity. Accordingly, the study recommends that the companies concerned enhance continuous training programs, develop internal promotion paths and secure employment, and link performance appraisal to tangible incentives in order

to entrench workforce flexibility, in addition to launching participatory initiatives that enable employees to express their ideas and innovate within a stimulating and supportive work environment.

Abu Al-Khail (2023) aimed to identify the effect of organizational agility on competitive advantage in Jordanian pharmaceutical manufacturing companies, while exploring the moderating role of top management support. It was based on a study population comprising all employees in pharmaceutical manufacturing companies in Jordan, with a sample of 340 participants selected via the stratified random sampling method. The study adopted the quantitative analysis approach and used the questionnaire instrument. The findings revealed that the level of organizational agility was high, and that the "sensing agility" dimension ranked first among the agility dimensions. A significant positive effect of organizational agility, across all its dimensions, on competitive advantage was found at the significance level ($\alpha < 0.05$). Furthermore, top management support adds a considerable role in strengthening this effect as a moderating variable. Accordingly, the study recommends that Jordanian pharmaceutical manufacturing companies focus their efforts on enhancing agility capabilities in the area of sensing through the adoption of early monitoring systems for market and technological changes, developing training programs for adaptation and rapid-change skills, and enhancing top management support by equipping leaders with flexible decision-making tools and fostering a culture of participation and innovation within the organization to ensure the achievement of sustainable competitive advantage.

Al-Walwil (2023) aimed to uncover the effect of strategic agility on crisis management approaches in Jordanian pharmaceutical companies. It was based on a study population comprising employees within the top and middle management of these companies, with the researcher selecting a simple random sample of 337 individuals. The descriptive-analytical method was adopted, and the questionnaire was used as a data collection instrument. The findings indicated that the level of strategic agility in Jordanian pharmaceutical companies was at a moderate level, and that the application of crisis management approaches-cooperation, confrontation, containment, and dissipation-was likewise within the moderate range. A significant effect of strategic agility, across its dimensions (flexibility, speed, organizational capabilities, and strategic sensitivity), on improving these approaches was also evident. Accordingly, the study recommends focusing efforts on enhancing flexibility and strategic speed capabilities through specialized training programs, adopting early sensing systems to raise the level of strategic sensitivity, and activating internal cooperation mechanisms through dedicated crisis management teams.

Shaheen (2022) aimed to identify the role of organizational agility as a mediating variable in the relationship between transformational leadership and change management in Egyptian pharmaceutical companies. It was based on a study population comprising leaders and managers of the top management departments in these companies, with the researcher selecting a sample of 384 individuals via stratified random sampling. The descriptive-analytical method was adopted, and the questionnaire instrument was used for data collection. The findings revealed the availability of transformational leadership, organizational agility, and change management among com-

pany leaders at a moderate level, with the prominence of organizational agility's role in maximizing the effect of transformational leadership on the effectiveness of change management. Accordingly, the study recommends enhancing leader capacity-building programs in transformational leadership approaches through workshops and applied training, and adopting initiatives to raise the level of organizational agility by developing the structure of internal processes and simplifying procedures.

Al-Khatalin (2022) aimed to analyze the impact of organizational agility on organizational reputation in Jordanian pharmaceutical companies, while clarifying the mediating role of talent management strategies. It was based on a study population comprising the employees of three major companies (Al-Hikma, Al-Ram, and the Jordanian Company for the Production of Pharmaceuticals), with the researcher selecting a sample of more than two hundred employees via proportional stratified random sampling. The descriptive-analytical method was adopted, and the questionnaire was used as a data collection instrument. The findings indicated a high level of organizational agility and that it has a positive effect on organizational reputation across the dimensions of creativity, social responsibility, flexibility, and service quality. It was also found that talent management strategies mediate this relationship. Accordingly, the study recommends establishing integrated talent management programs encompassing career planning, continuous development, and the enhancement of a talent-retention culture, in addition to enhancing organizational agility practices through simplifying procedures, clarifying the vision, and activating rapid-response mechanisms to changes in order to ensure the elevation and sustainability of organizational reputation.

Abu Ramman (2022) aimed to uncover the effect of organizational agility on achieving competitive advantage among Jordanian pharmaceutical manufacturing companies amid the COVID-19 pandemic. The researcher proceeded from a study population comprising the managers, assistant managers, and department heads of these companies, with the comprehensive survey covering 17 companies; the researcher selected all members of the population, numbering 73 participants. The quantitative method was adopted, and the questionnaire was used as a data collection instrument. The findings indicated that the level of organizational agility was moderate, with the "sensing agility" dimension scoring highest, followed by the "decision-making agility" dimension and then the "application and practice agility" dimension. The level of competitive advantage was likewise moderate, with its importance gradually diminishing from the "delivery" dimension, through "innovation," "flexibility," and "quality," and finally the "cost" dimension. The findings also demonstrated the existence of a significant effect of organizational agility, across all its dimensions, on enhancing competitive advantage amid the exceptional circumstances of the pandemic. Accordingly, the study recommends that Jordanian pharmaceutical manufacturing companies focus their efforts on enhancing their capabilities in sensing changes through the adoption of monitoring systems and early scenarios, developing flexible decision-making mechanisms through specialized teams, and upgrading the practices of rapid application and implementation of initiatives-in addition to adopting strategies to enhance competitive advantage that include improving delivery efficiency, entrenching a culture of innovation and flexibility, and implementing integrated quality assurance systems alongside cost-reduction plans.

Al-Shanti (2021) aimed to identify the effect of strategic agility on enhancing competitive advantage among Palestinian pharmaceutical manufacturing companies. It was based on a study population comprising all employees in supervisory positions in these companies, numbering 166 employees. The descriptive-analytical method was adopted, and the questionnaire was used as a data collection instrument. The findings revealed the availability of a high level of strategic agility and a high level of agreement regarding competitive advantage, with a significant effect of the dimensions of strategic agility on enhancing competitive advantage. Accordingly, the study recommends the necessity for Palestinian pharmaceutical manufacturing companies to adopt early monitoring mechanisms for environmental and competitive changes and to develop training programs to enhance flexibility and strategic speed capabilities, in addition to enhancing communication and coordination capabilities among management levels to activate strategies of innovation and continuous adaptation.

Freihat (2019) aimed to diagnose the extent of the effect of organizational agility on marketing ambidexterity in pharmaceutical manufacturing companies listed on the Amman Stock Exchange. It was based on a study population comprising the managers of those companies, with a sample composed of 68 managers. The descriptive-analytical method was adopted, and the questionnaire was used as a data collection instrument. The findings revealed a high level of organizational agility and the existence of a significant positive effect of its three dimensions (sensing agility, decision-making agility, and application and practice agility) on marketing ambidexterity. Accordingly, the study recommends that listed pharmaceutical manufacturing companies focus their efforts on enhancing market sensing systems through following changes and trends, developing flexible decision-making mechanisms through specialized teams, and accelerating the application of initiatives through simplifying procedures and training leaders in rapid implementation skills.

AlTahhan & Darwazeh (2024) aimed to determine the relative importance and effect of human resource agility, across its dimensions (skills agility, behavior agility, and practices agility), on organizational excellence, across its dimensions (leadership excellence, followers' excellence, strategy excellence, organizational culture excellence, and product excellence), in Jordanian pharmaceutical manufacturing companies. The study population was based on employees at the top and middle management levels in these companies, with a sample composed of 206 individuals. The study adopted the descriptive-analytical method and used the questionnaire as a data collection instrument. The findings revealed high levels of human resource agility and all dimensions of organizational excellence, with the existence of a significant positive effect of human resource agility, across all its dimensions, on organizational excellence across its various components. Accordingly, the study recommends that the companies concerned focus their efforts on developing programs for skills development and institutional behavior and enhancing flexible work practices to achieve sustainable leadership, strategic, cultural, and product excellence.

Attiany (2024) aimed to determine the effect of human resource agility on innovative performance in pharmaceutical companies listed on the Amman Stock Exchange. The study population was based on managers at various levels in these companies, with

a sample composed of 450 questionnaires collected via the descriptive-analytical method, using the questionnaire as a data collection instrument. The findings revealed a high level of human resource agility and the existence of a significant positive effect of this agility on innovative performance. The study also uncovered a set of internal and external factors affecting the level of agility. Accordingly, the study recommends launching developmental programs targeting the building of adaptation and continuous learning capabilities among employees and enhancing a culture of innovation through applied workshops and incentive systems that encourage the adoption of new ideas. It also proposes the continuation of future research adopting the qualitative method to explore the psychological and cultural drivers underlying the effect of agility on innovation.

Almagharbeh (2024) aimed to clarify the effect of human resource agility on organizational sustainability in the Jordanian hotel sector. The study population was based on the entire workforce in this sector, numbering 21,835 employees across 22 hotels, while the study sample comprised 410 employees. The descriptive-analytical method was adopted, and the questionnaire was used as a data collection instrument. The findings revealed a high level of human resource agility and that this agility has a notable positive effect on the social and economic sustainability dimensions in hotel sector institutions, while it did not demonstrate a tangible effect on environmental sustainability. Accordingly, the study recommends the necessity of enhancing programs for building adaptation and flexibility capabilities among employees through continuous training workshops, activating social responsibility practices that support the well-being of employees and the local community, and integrating interactive environmental strategies to elevate the effect of agility on the environmental dimension.

Obaid et al. (2023) aimed to shed light on how human resource agility interacts with strategic renewal in the General Company for the Textile and Leather Industry. The study population was based on all employees at the administrative levels in this company, numbering 130 employees, while the study sample comprised 96 participants. The study adopted the descriptive-analytical method and used the questionnaire as a data collection instrument. The findings revealed a high level of human resource agility across its various dimensions and the existence of a direct effect thereof in supporting strategic renewal processes. Accordingly, the study recommends launching training programs to enhance flexibility and innovation skills among managers and adopting effective communication mechanisms that ensure the translation of agility into renewal initiatives such as reviewing organizational structures and updating procedures.

Alsharah (2023) aimed to determine the effect of the moderating role of talent management on the relationship between human resource management practices-represented in training, recruitment, performance appraisal, and the reward system-and institutional performance in Jordanian pharmaceutical companies. The study population was based on the employees of thirteen companies listed on the Amman Stock Exchange in Jordan, with a sample composed of 250 employees. The descriptive-analytical method was adopted, and the questionnaire was used as a data collection instrument. The findings revealed that human resource management practices positively affect institutional performance and that the role of talent management enhances this effect. Accordingly, the study recommends adopting integrated talent management programs

encompassing strategic plans to attract, develop, and retain competencies and to link them with recruitment, training, performance appraisal, and reward systems-in addition to encouraging future qualitative research to explore the organizational and cultural factors affecting the effectiveness of talent management in the sector.

Saeed (2022) aimed to explore the effect of both strategic agility and organizational ambidexterity on the relationship between talent management and human capital sustainability in multinational pharmaceutical manufacturing companies. The study population included managers and employees working in these companies in the Arab Republic of Egypt, with the study sample reaching 382 participants. The descriptive-analytical method was followed, and the study relied on the questionnaire as a data collection instrument. The findings revealed that strategic agility is a moderating variable that contributes to enhancing the relationship between talent management and human capital sustainability, by facilitating the effective exploration and exploitation of talent across its three dimensions: forecasting, decision-making, and implementation. The findings also demonstrated the importance of organizational ambidexterity as a contributing factor in supporting this effect. The study recommended the necessity for multinational companies to develop their strategic capabilities and enhance their organizational flexibility in a manner that ensures human capital sustainability, in addition to investing in talent development systems capable of keeping pace with dynamic changes in the business environment.

Shaima et al. (2021) aimed to determine the effect of organizational creativity on organizational agility in Jordanian pharmaceutical companies, while clarifying the moderating role of knowledge sharing in this relationship. The study population included employees in supervisory and administrative positions within the top and middle levels in Jordanian pharmaceutical companies, while the study sample reached 350 employees. The descriptive-analytical method was used, and the study relied on the questionnaire as a data collection instrument. The findings revealed that the dimensions of organizational creativity enjoy a high degree of importance, and that there is a clear effect of organizational creativity on the level of organizational agility in these companies. The findings also uncovered the role of knowledge sharing in enhancing this effect by enabling individuals to exchange ideas and experiences in a manner that contributes to the organization's flexibility and responsiveness to changes. The study recommended the necessity of enhancing a culture of creativity and encouraging knowledge-sharing policies at all administrative levels to ensure the achievement of the highest levels of organizational agility and readiness for future challenges.

Commentary on Previous Studies: What Distinguishes the Present Study from Other Previous Studies

- The present study is the first-to the best of the researchers' knowledge-to directly link human resource agility, across its dimensions (adaptability, flexibility, sensing, creativity in problem-solving, and learning of work skills), with continuous improvement, across its dimensions (planning, implementation, and evaluation), in the pharmaceutical industry in Palestine.
- The study addresses a strategically sensitive sector within the Palestinian context-namely, the pharmaceutical industry-which has not been sufficiently addressed in Arab or international studies within this conceptual framework.

- The study sheds light on the obstacles to continuous improvement in this sector, an applied dimension rarely addressed in previous studies.
- The study provides recent field data (2024-2025) from the reality of the Palestinian work environment in Palestine, thereby enhancing the originality of the findings and the recency of the scholarly treatment.
- This study adopts an integrative approach between the concepts of agility and continuous improvement, in contrast to previous studies that addressed each variable separately.

Statement of the Problem and Research Questions

In an era characterized by rapid change and global competitiveness, the pharmaceutical industry in Palestine faces significant operational and organizational challenges that require a high capacity for adaptation and renewal. Despite the strategic importance of the pharmaceutical sector in Palestine, it is considered a sector of limited size, in which-since actual production began in 1969-six companies operate in the production of pharmaceuticals for human consumption: five of these are major Palestinian companies operating in the West Bank (Birzeit, Al-Quds Pharmaceuticals, Dar Al-Shifa, Sama, and Beit Jala), and one company operating in the Gaza Strip (Palestinian National Information Center, 2025).

Despite the studies and research that have addressed the topics of human resource agility and continuous improvement, the literature concerning the application of these concepts within the Palestinian context remains scarce.

The research problem becomes clearly evident in its focus on the pharmaceutical industry in Palestine-a field not sufficiently covered in previous studies, especially those that have addressed the relationships between human resource agility and continuous improvement. Most of the studies referred to focused on the dimensions of creativity, competitive advantage, or organizational change, and did not fully focus on continuous improvement in its comprehensive sense, which includes planning, implementation, and the elimination of waste. This study has therefore come to address the effects of human resource agility on continuous improvement, with the researchers seeking to ensure that this study makes an important scholarly contribution by addressing the gap in the academic literature through linking human resource agility as a continuous improvement tool and applying this within the Palestinian pharmaceutical industry environment. Hence, this study has come to answer the following main question: **What is the role of human resource agility in continuous improvement in the pharmaceutical industry in Palestine?** The following sub-questions branch off from the main question:

- What is the state of human resource agility, across its dimensions (adaptability, flexibility, sensing, creativity in problem-solving, and learning of work skills), in the pharmaceutical industry in Palestine?
- What is the level of continuous improvement, across its dimensions (planning for the continuous improvement process, implementation of the continuous improvement process, and evaluation of the continuous improvement process), in the pharmaceutical industry in Palestine?
- Is there an effect of human resource agility on continuous improvement in the pharmaceutical industry in Palestine?

Significance of the Study

Theoretical Significance

The theoretical significance of the study lies in the importance of the subject under investigation, as it addresses, through study and analysis, an important topic relating to one of the important economic sectors in Palestine-namely, the pharmaceutical sector, which touches upon the health needs of the Palestinian citizen. The theoretical significance of the study is also highlighted through enriching the knowledge and literature concerning human resource agility and continuous improvement in this vital and important sector, in a manner that contributes to continuous improvement through planning, implementation, and the elimination of resource waste in accordance with the plans laid out for this sector.

Applied Significance

This study derives its importance from the ways in which it can help guide public policies and strategies in this vital and important sector, by benefiting from shedding light on human resource agility and its role in continuous improvement in the sector through raising its efficiency and increasing its capacity to carry out continuous improvements therein-thereby leading to the achievement of competitive advantage amid the dynamic, changing environment in which this sector operates. It also derives importance from the ways in which the findings of this study can benefit future researchers in furthering research on this topic, thereby supplying the local, Arab, and global library with novel research on the subject.

Objectives of the Study

The study aims to:

- Measure the state of human resource agility in the pharmaceutical industry in Palestine.
- Uncover the level of continuous improvement in the pharmaceutical industry in Palestine.
- Identify the effect of human resource agility, across its dimensions (adaptability, flexibility, sensing, creativity in problem-solving, and learning of work skills), on continuous improvement, across its dimensions (planning for the continuous improvement process, implementation of the continuous improvement process, and evaluation of the continuous improvement process), in the pharmaceutical industry in Palestine.

Hypotheses of the Study

The study seeks to test the following main hypothesis:

- There is no statistically significant effect at the significance level ($\alpha \leq 0.05$) of human resource agility on continuous improvement in the pharmaceutical industry in Palestine. The following sub-hypotheses branch off from the main hypothesis:
- There is no statistically significant effect at the significance level ($\alpha \leq 0.05$) of human resource agility on planning for the continuous improvement process in the pharmaceutical industry in Palestine.

- There is no statistically significant effect at the significance level ($\alpha \leq 0.05$) of human resource agility on the implementation of the continuous improvement process in the pharmaceutical industry in Palestine.
- There is no statistically significant effect at the significance level ($\alpha \leq 0.05$) of human resource agility on the evaluation of the continuous improvement process in the pharmaceutical industry in Palestine.

Delimitations of the Study

The delimitations of the study were determined as follows:

- **Temporal Delimitations:** The year 2025.
- **Spatial Delimitations:** The pharmaceutical industry in the West Bank, specifically the companies (Birzeit Pharmaceuticals, Al-Quds Pharmaceuticals, Dar Al-Shifa Pharmaceutical Industry, Sama Pharmaceutical Industry, and Beit Jala Pharmaceutical Industries). Al-Quds Pharmaceutical Company declined to receive and distribute the study instrument within the company.
- **Human Delimitations:** Managers and department heads in the pharmaceutical industry in the West Bank.
- **Subject Delimitations:** Human resource agility and its role in continuous improvement.
- **Methodological Delimitations:** The study adopted the descriptive-analytical method and relied on the questionnaire for data collection.

Methodology of the Study

The researchers employed the descriptive-analytical method, given its suitability for the study.

Population and Sample of the Study

Table (1): Distribution of Study Sample Members According to the Study's Demographic Variables

Variable	Level	Frequency	Percentage %
Gender	Male	48	60.0
	Female	32	40.0
	Total	80	100
Age	Less than 25 years	15	18.8
	25 - less than 40 years	47	58.8
	40 years and above	18	22.5
	Total	80	100
Educational Qualification	Diploma or lower	12	15.0
	Bachelor's	49	61.3
	Postgraduate studies	19	23.8
	Total	80	100
Job Title	Department head	52	65.0
	Manager or higher	28	35.0
	Total	80	100
Years of Experience	Less than 5 years	19	23.8
	5 - less than 15 years	46	57.5
	15 years and above	15	18.8
	Total	80	100

The study population comprised all managers and department heads in the pharmaceutical industry in the West Bank, represented in the companies (Birzeit Pharmaceuticals, Al-Quds Pharmaceuticals, Dar Al-Shifa Pharmaceutical Industry, Sama Pharmaceutical Industry, and Beit Jala Pharmaceutical Industries). Al-Quds Pharmaceutical Company declined to complete the questionnaires, as the company was preoccupied with annual inventory operations. The researchers conducted a comprehensive survey of the population, numbering 87 individuals, and 80 questionnaires valid for statistical analysis were retrieved, with a retrieval rate of 91.9% of the total questionnaires distributed. Table (1) below illustrates this:

Study Instrument and Its Variables

To achieve the objectives of the study and to answer its questions and hypotheses, and after surveying previous studies and reviewing the theoretical literature, the researchers prepared a questionnaire by drawing upon numerous previous Arabic and foreign studies, including the study by (Al-Zoubi, 2020) and the study by (Al-Aramiti, 2020).

Validity of the Instrument

- **Face Validity:** To verify the validity of the study instrument, it was presented to a number of arbitrators with expertise and specialization to express their opinions, which were taken into account by the researchers.
- **Construct Validity:** In order to verify the construct validity of the instrument, the study instrument (questionnaire) was distributed to a sample of 15 individuals to verify its construct validity by calculating the Pearson Correlation coefficient between each item of the questionnaire's sections and the total score of each dimension and the total score of the variable, as well as the correlation coefficient of each dimension of the study instrument with the total score of the variable.

This is illustrated in the tables presented hereafter; the following provides clarification of this:

First: The First (Independent) Variable: Human Resource Agility

The Pearson Correlation coefficient was calculated for the correlation of the items of the dimensions of the human resource agility variable with the total score of each dimension and the total score of the variable, and the correlation coefficient of each dimension with the total score of the variable, as illustrated in Table (2).

The data presented in the preceding Table (2) indicate that the correlation coefficients of the items and dimensions were at an acceptable and statistically significant degree, as they were below the significance level (0.05). Therefore, no item of the scale was deleted, and the number of its items remained 32 items-indicating the internal consistency of the instrument's items and its dimensions, and that they jointly contribute to measuring the human resource agility variable in light of the theoretical framework upon which the instrument was constructed.

Table (2): Results of the Pearson Correlation Coefficient for the Correlation Matrix of the Items of the Dimensions of the Human Resource Agility Variable with the Total Score of Each Dimension and the Total Score of the Variable, and the Correlation Coefficient of Each Dimension with the Total Score of the Variable

No.	Correlation with Dimension	Statistical Significance	Correlation with Total Variable Score	Statistical Significance
Dimension One: Adaptability				
1	.551**	.000	.506**	.000
2	.553**	.000	.499**	.000
3	.478**	.000	.599**	.000
4	.589**	.000	.401**	.000
5	.481**	.000	.449**	.000
6	.601**	.000	.581**	.000
Correlation of Dimension One with Total Score			.667**	.000
Dimension Two: Flexibility				
7	.501**	.000	.548**	.000
8	.540**	.000	.591**	.000
9	.558**	.000	.448**	.000
10	.591**	.000	.481**	.000
11	.471**	.000	.511**	.000
12	.644**	.000	.523**	.000
13	.617**	.000	.518**	.000
14	.604**	.000	.628**	.000
Correlation of Dimension Two with Total Score			.701**	.000
Dimension Three: Sensing				
15	.498**	.000	.698**	.000
16	.619**	.000	.608**	.000
17	.612**	.000	.556**	.000
18	.627**	.000	.518**	.000
19	.563**	.000	.592**	.000
20	.618**	.000	.518**	.000
21	.661**	.000	.581**	.000
22	.645**	.000	.511**	.000
Correlation of Dimension Three with Total Score			.772**	.000
Dimension Four: Creativity in Problem-Solving				
23	.506**	.000	.671**	.000
24	.509**	.000	.459**	.000
25	.553**	.000	.513**	.000
26	.490**	.000	.617**	.000
27	.518**	.000	.552**	.000
Correlation of Dimension Four with Total Score			.707**	.000
Dimension Five: Learning of Work Skills				
28	.611**	.000	.516**	.000
29	.531**	.000	.617**	.000
30	.541**	.000	.621**	.000
31	.567**	.000	.625**	.000
32	.581**	.000	.519**	.000
Correlation of Dimension Five with Total Score			.698**	.000

*Statistically significant at the significance level (0.05) ** Statistically significant at the significance level (0.01)

On the other hand, the validity of the instrument was also verified using Factor Analysis of the study instrument's items, and the results were as in Table (3):

Table (3): Results of the Factor Analysis of the Items of the Human Resource Agility Variable

Item	Loading	Item	Loading	Item	Loading
1	0.61	12	0.81	23	0.71
2	0.72	13	0.68	24	0.79
3	0.70	14	0.79	25	0.69
4	0.79	15	0.71	26	0.78
5	0.75	16	0.77	27	0.74
6	0.55	17	0.74	28	0.73
7	0.72	18	0.79	29	0.78
8	0.65	19	0.80	30	0.75
9	0.69	20	0.84	31	0.72
10	0.61	21	0.82	32	0.80
11	0.72	22	0.69		

The data presented in Table (3) indicate that the factor analysis for all items of the human resource agility variable is statistically significant and possesses an acceptable degree of loading, and that they jointly contribute to measuring the required variable (human resource agility).

Second: The Second (Dependent) Variable: Continuous Improvement

The Pearson Correlation coefficient was calculated for the correlation of the items of the dimensions of the continuous improvement variable with the total score of each dimension and the total score of the variable, and the correlation coefficient of each dimension with the total score of the variable, as illustrated in Table (4):

Table (4): Results of the Pearson Correlation Coefficient for the Correlation Matrix of the Items of the Dimensions of the Continuous Improvement Variable with the Total Score of Each Dimension and the Total Score of the Variable, and the Correlation Coefficient of Each Dimension with the Total Score of the Variable

No.	Correlation with Dimension	Statistical Significance	Correlation with Total Score	Statistical Significance
Dimension One: Planning				
33	.617**	.000	.637**	.000
34	.558**	.000	.604**	.000
35	.561**	.000	.627**	.000
36	.586**	.000	.482**	.000
37	.619**	.000	.448**	.000
38	.617**	.000	.418**	.000
39	.519**	.000	.420**	.000
40	.511**	.000	.611**	.000
41	.584**	.000	.634**	.000
42	.566**	.000	.640**	.000
Correlation of Dimension One with Total Score			.709**	.000
Dimension Two: Implementation of the Continuous Improvement Process				
43	.548**	.000	.539**	.000
44	.590**	.000	.573**	.000
45	.588**	.000	.499**	.000
46	.617**	.000	.572**	.000

No.	Correlation with Dimension	Statistical Significance	Correlation with Total Score	Statistical Significance
47	.559**	.000	.499**	.000
48	.563**	.000	.518**	.000
49	.590**	.000	.573**	.000
50	.588**	.000	.500**	.000
51	.612**	.000	.617**	.000
52	.449**	.000	.614**	.000
53	.588**	.000	.628**	.000
Correlation of Dimension Two with Total Score			.668**	.000
Dimension Three: Evaluation of the Continuous Improvement Process				
54	.590**	.000	.573**	.000
55	.588**	.000	.499**	.000
56	.612**	.000	.582**	.000
57	.445**	.000	.607**	.000
58	.561**	.000	.611**	.000
59	.599**	.000	.509**	.000
60	.551**	.000	.558**	.000
61	.623**	.000	.609**	.000
62	.615**	.000	.611**	.000
Correlation of Dimension Three with Total Score			.733**	.000

*Statistically significant at the significance level (0.05) ** Statistically significant at the significance level (0.01)

The data presented in Table (4) indicate that the correlation coefficients of the items and dimensions were at an acceptable and statistically significant degree, as they were below the significance level (0.05).

Therefore, no item of the scale was deleted, and the number of its items remained 30 items-indicating the internal consistency of the instrument's items and its dimensions, and that they jointly contribute to measuring the continuous improvement variable in light of the theoretical framework upon which the instrument was constructed.

Factorial Validity

On the other hand, the validity of the instrument was also verified using Factor Analysis of the study instrument's items, and the results were as in the following table:

Table (5): Results of the Factor Analysis of the Items of the Continuous Improvement Variable

Item	Loading	Item	Loading	Item	Loading
1	0.67	12	0.70	23	0.68
2	0.62	13	0.66	24	0.79
3	0.73	14	0.69	25	0.69
4	0.59	15	0.65	26	0.66
5	0.76	16	0.61	27	0.56
6	0.82	17	0.68	28	0.70
7	0.80	18	0.72	29	0.81
8	0.77	19	0.79	30	0.75
11	0.71	22	0.79		

The data presented in Table (5) indicate that the factor analysis for all items of the continuous improvement variable is statistically significant and possesses an acceptable degree of loading, and that they jointly contribute to measuring the required variable (continuous improvement).

Presentation of the Study Findings

Findings Related to the First Question: What is the state of human resource agility, across its elements (adaptability, flexibility, sensing, creativity in problem-solving, and learning of work skills), in the pharmaceutical industry in Palestine?

To answer the first study question, frequencies, arithmetic means, standard deviations, and the degree of agreement related to the sample's responses were calculated, and the results were as in Table (6):

Table (6): Arithmetic Means and Standard Deviations of the Dimensions of the First Domain - Human Resource Agility

No.	Items	Arithmetic Mean	Standard Deviation	Percentage	Level
	Total Score for the Adaptability Dimension	3.84	.669	76.8	High
	Total Score for the Flexibility Dimension	3.90	.561	78	High
	Total Score for the Sensing Dimension	3.64	.783	72.8	High
	Total Score for the Creativity in Problem-Solving Dimension	3.86	.634	77.2	High
	Total Score for the Learning of Work Skills Dimension	3.74	.873	74.8	High
	Total Score for the Human Resource Agility Domain	3.79	.624	75.8	High

Table (6) indicates that the overall arithmetic mean for the human resource agility domain reached (3.79) with a percentage of (75.8%) and a high degree of agreement.

This indicates that the state of human resource agility, across its elements (adaptability, flexibility, sensing, creativity in problem-solving, and learning of work skills), in the pharmaceutical industry in Palestine was at a high level.

The following provides clarification of all dimensions of the above domain:

Dimension One: Adaptability

Table (7): Arithmetic Means and Standard Deviations for the First Dimension - Adaptability

No.	Items	Arithmetic Mean	Standard Deviation	Percentage	Level
1	Employees have the capacity to act efficiently in various situations.	3.89	.763	77.8	High
2	Employees are characterized by the capacity to adapt to the various changes in the markets.	4.09	.697	81.8	High
3	Employees have the capacity to perform various tasks within work teams.	4.11	.746	82.2	High
4	Employees possess the capacity to understand complex ideas in order to adapt effectively to the internal work environment.	3.67	.823	73.4	High
5	Employees benefit from feedback to improve their performance amid changes in the internal environment.	3.83	.897	76.6	High
6	Employees contribute to formulating strategies to adapt to the various developments related to work.	3.44	1.157	68.8	High
	Total Score for the Adaptability Dimension	3.84	.669	76.8	High

Table (7) shows that the arithmetic means of the study sample members' responses to the (Adaptability) dimension ranged between (4.11 - 3.44), and the level of agreement

was high. The item "Employees have the capacity to perform various tasks within work teams" ranked first with an arithmetic mean of (4.11), a percentage of (82.2%), and a high degree of agreement, followed by the item "Employees are characterized by the capacity to adapt to the various changes in the markets" in second place with an arithmetic mean of (4.09), a percentage of (81.8%), and a high degree of agreement. Meanwhile, the item "Employees contribute to formulating strategies to adapt to the various developments related to work" ranked last with an arithmetic mean of (3.44), a percentage of (68.8%), and a high degree of agreement. The overall arithmetic mean for the adaptability dimension reached (3.84) with a percentage of (76.8%) and a high degree of agreement.

Dimension Two: Flexibility

Table (8): Arithmetic Means and Standard Deviations for the Second Dimension - Flexibility

No.	Items	Arithmetic Mean	Standard Deviation	Percentage	Level
7	Employees possess a measure of freedom in the manner of performing their work.	3.46	.967	69.2	High
8	Employees possess the capacity to learn new methods for performing the duties assigned to them.	3.90	.880	78	High
9	Employees work efficiently even under unexpected circumstances.	4.10	.704	82	High
10	Employees possess the capacity to benefit from the changes surrounding them.	3.95	.778	79	High
11	Employees possess sufficient flexibility to respond rapidly to customer requests.	3.94	.663	78.8	High
12	Employees have flexibility in performing their diverse duties.	4.00	.675	80	High
13	Employees demonstrate flexibility in accepting new ideas for implementation.	3.87	.753	77.4	High
14	Employees show readiness to deal with any new challenge facing the company.	3.95	.778	79	High
	Total Score for the Flexibility Dimension	3.90	.561	78	High

Table (8) shows that the arithmetic means of the study sample members' responses to the (Flexibility) dimension ranged between (4.10 - 3.46), and the level of agreement was high. The item "Employees work efficiently even under unexpected circumstances" ranked first with an arithmetic mean of (4.10), a percentage of (82%), and a high degree of agreement, followed by the item "Employees have flexibility in performing their diverse duties" in second place with an arithmetic mean of (4.00), a percentage of (80%), and a high degree of agreement. Meanwhile, the item "Employees possess a measure of freedom in the manner of performing their work" ranked last with an arithmetic mean of (3.46), a percentage of (69.2%), and a high degree of agreement. The overall arithmetic mean for the flexibility dimension reached (3.90) with a percentage of (78%) and a high degree of agreement.

Dimension Three: Sensing

The results in Table (9) indicated that the arithmetic means of the study sample members' responses to the third dimension (Sensing) ranged between (3.83 - 3.41). The item "Employees continuously follow developments in their field of work" ranked first with an arithmetic mean of (3.83), a percentage of (76.6%), and a high degree of

agreement, followed by the item "Employees gather data that help improve operations" in second place with an arithmetic mean of (3.78), a percentage of (75.6%), and a high degree of agreement. Meanwhile, the item "Employees take an interest in developing tools that help analyze the surrounding environment" ranked last with an arithmetic mean of (3.41), a percentage of (68.2%), and a high degree of agreement. The overall arithmetic mean for the sensing dimension reached (3.64) with a percentage of (72.8%) and a high degree of agreement.

Table (9): Arithmetic Means and Standard Deviations for the Third Dimension - Sensing

No.	Items	Arithmetic Mean	Standard Deviation	Percentage	Level
15	Employees continuously follow developments in their field of work.	3.83	.897	76.6	High
16	Employees forecast opportunities that may enhance the company's performance.	3.73	.826	74.6	High
17	Employees gather data that help improve operations.	3.78	.914	75.6	High
18	Employees demonstrate the ability to predict problems before they occur.	3.54	.899	70.8	High
19	Employees use available data to identify future trends.	3.75	.864	75	High
20	Employees develop proactive strategies to confront challenges.	3.49	1.019	69.8	High
21	Employees take an interest in developing tools that help analyze the surrounding environment.	3.41	.924	68.2	High
22	Employees participate in discussions aimed at improving the capacity to sense risks.	3.59	1.027	71.8	High
	Total Score for the Sensing Dimension	3.64	.783	72.8	High

Dimension Four: Creativity in Problem-Solving

Table (10): Arithmetic Means and Standard Deviations for the Fourth Dimension-Creativity in Problem-Solving

No.	Items	Arithmetic Mean	Standard Deviation	Percentage	Level
23	Employees offer creative solutions that confront the company [its challenges].	3.69	.936	73.8	High
24	The company adopts an effective communication system that provides creative solutions to problems.	3.57	.808	71.4	High
25	The company adopts a work-team approach that provides creative solutions to the company's problems.	3.69	1.001	73.8	High
26	Employees offer creative ideas for problems through their cumulative experience.	4.05	.778	81	High
27	Employees act responsibly toward the company's interests.	4.29	.640	85.8	Very High
Total Score for the Creativity in Problem-Solving Dimension		3.86	.634	77.2	High

The results in Table (10) showed that the arithmetic means of the study sample members' responses to the fourth dimension (Creativity in Problem-Solving) ranged between (4.29 - 3.57), with the level of agreement being high for most items and very high for one item. The item "Employees act responsibly toward the company's interests" ranked first with an arithmetic mean of (4.29), a percentage of (85.8%), and a

very high degree of agreement, followed by the item "Employees offer creative ideas for problems through their cumulative experience" in second place with an arithmetic mean of (4.05), a percentage of (81%), and a high degree of agreement. Meanwhile, the item "The company adopts an effective communication system that provides creative solutions to problems" ranked last with an arithmetic mean of (3.57), a percentage of (71.4%), and a high degree of agreement. The overall arithmetic mean for the creativity in problem-solving dimension reached (3.86) with a percentage of (77.2%) and a high degree of agreement.

Dimension Five: Learning of Work Skills

Table (11): Arithmetic Means and Standard Deviations for the Fifth Dimension-Learning of Work Skills

No.	Items	Arithmetic Mean	Standard Deviation	Percentage	Level
28	The company's management provides the training programs necessary for employees to improve their performance.	3.84	1.037	76.8	High
29	The company's management enhances collaboration among employees.	3.85	.915	77	High
30	The company's management keeps employees informed of everything new in their field of work.	3.55	1.168	71	High
31	The company's management urges employees to exchange specialized knowledge as appropriate to them.	3.76	.931	75.2	High
32	The company's management is keen to update the technological skills necessary for work among employees.	3.73	.954	74.6	High
Total Score for the Learning of Work Skills Dimension		3.74	.873	74.8	High

The results in Table (11) indicated that the arithmetic means of the study sample members' responses to the fifth dimension (Learning of Work Skills) ranged between (3.85 - 3.55), with the level of agreement being high. The item "The company's management enhances collaboration among employees" ranked first with an arithmetic mean of (3.85), a percentage of (77%), and a high degree of agreement, followed by the item "The company's management provides the training programs necessary for employees to improve their performance" in second place with an arithmetic mean of (3.84), a percentage of (76.8%), and a high degree of agreement. Meanwhile, the item "The company's management keeps employees informed of everything new in their field of work" ranked last with an arithmetic mean of (3.55), a percentage of (71%), and a high degree of agreement. The overall arithmetic mean for the learning of work skills dimension reached (3.74) with a percentage of (74.8%) and a high degree of agreement.

Findings Related to the Second Question: What is the level of continuous improvement, across its elements (planning for the continuous improvement process, implementation of the continuous improvement process, and evaluation of the continuous improvement process), in the pharmaceutical industry in Palestine?

To answer the second study question, frequencies, arithmetic means, standard deviations, and the degree of agreement related to the sample's responses were calculated, and the results were as in Table (12):

Table (12): Arithmetic Means and Standard Deviations of the Dimensions of the Second Domain - Continuous Improvement

No.	Items	Arithmetic Mean	Standard Deviation	Percentage	Level
	Total Score for the Planning for the Continuous Improvement Process Dimension	4.00	.657	80	High
	Total Score for the Implementation of the Continuous Improvement Process Dimension	3.97	.658	79.4	High
	Total Score for the Evaluation of the Continuous Improvement Process Dimension	3.98	.704	79.6	High
	Total Score for the Continuous Improvement Domain	3.98	.630	79.6	High

Table (12) indicates that the overall arithmetic mean for the continuous improvement domain reached (3.98) with a percentage of (79.6%) and a high degree of agreement. This indicates that the level of continuous improvement, across its elements (planning for the continuous improvement process, implementation of the continuous improvement process, and evaluation of the continuous improvement process), in the pharmaceutical industry in Palestine is high. The following presents the results of each dimension:

Dimension One: Planning for the Continuous Improvement Process

Table (13): Arithmetic Means and Standard Deviations for the First Dimension-Planning for the Continuous Improvement Process

No.	Items	Arithmetic Mean	Standard Deviation	Percentage	Level
1	The company's management analyzes market data to benefit from it in the continuous improvement of its products (pharmaceuticals and others).	4.03	.941	80.6	High
2	The company's management analyzes customer performance regarding the quality of its products.	3.99	.787	79.8	High
3	The company's management communicates with pharmacies to obtain feedback regarding its products.	4.09	.715	81.8	High
4	The company's management communicates with raw material suppliers to ensure the quality of these materials.	4.15	.713	83	High
5	The company's management plans to increase its competitive capabilities through the continuous improvement of its products.	4.00	.694	80	High
6	The company's management plans to reduce various costs through the continuous improvement of its products.	4.06	.801	81.2	High
7	The company's management plans to enhance customer satisfaction through the continuous improvement of its products.	4.04	.818	80.8	High
8	The company's management is keen on having a timeline for the continuous improvement of its products.	3.91	.766	78.2	High
9	The company is keen on setting clear objectives for the continuous improvement of its products.	3.94	.817	78.8	High
10	The company's management involves relevant employees in the continuous improvement of its products.	3.81	.929	76.2	High
	Total Score for the Planning for the Continuous Improvement Process Dimension	4.00	.657	80	High

Table (13) shows that the arithmetic means of the study sample members' responses to the first dimension (Planning for the Continuous Improvement Process) ranged between (4.15 - 3.81). The item "The company's management communicates with raw material suppliers to ensure the quality of these materials" ranked first with an arithmetic mean of (4.15), a percentage of (83%), and a high degree of agreement, followed by the item "The company's management communicates with pharmacies to obtain feedback regarding its products" in second place with an arithmetic mean of (4.09), a percentage of (81.8%), and a high degree of agreement. Meanwhile, the item "The company's management involves relevant employees in the continuous improvement of its products" ranked last with an arithmetic mean of (3.81), a percentage of (76.2%), and a high degree of agreement. The overall arithmetic mean for the planning for the continuous improvement process dimension reached (4.00) with a percentage of (80%) and a high degree of agreement.

Dimension Two: Implementation of the Continuous Improvement Process

Table (14): Arithmetic Means and Standard Deviations for the Second Dimension-Implementation of the Continuous Improvement Process

No.	Items	Arithmetic Mean	Standard Deviation	Percentage	Level
11	The company's management adheres to the specified timeline for the continuous improvement of its products.	3.80	.960	76	High
12	The company's management provides all resources necessary to implement the continuous improvement plans for its products.	3.77	.826	75.4	High
13	The company's management monitors developments surrounding the company to ensure they do not negatively affect the implementation of its product improvement plans.	3.78	.856	75.6	High
14	The company's management provides all the tools necessary for the effective implementation of the continuous improvement of its products.	3.85	.797	77	High
15	The company's management provides the technology necessary for the effective implementation of the continuous improvement of its products.	3.81	.887	76.2	High
16	The company's management is keen on designing its products in the best manner.	4.10	.686	82	High
17	The company's management emphasizes the necessity of fully meeting the continuous improvement indicators for products.	4.15	.748	83	High
18	The company adopts best practices in the field of drug manufacturing.	4.29	.640	85.8	Very High
19	Resources are used efficiently in a manner that ensures cost reduction without a negative effect on quality.	4.07	.759	81.4	High
20	The company's management is keen on enhancing the organizational culture supportive of the continuous improvement of its products.	4.10	.739	82	High
21	The company's management makes the necessary changes in its organizational structure in a manner that ensures the effectiveness of the continuous improvement process for its products.	3.98	.826	79.6	High
Total Score for the Implementation of the Continuous Improvement Process Dimension		3.97	.658	79.4	High

Table (14) shows that the arithmetic means of the study sample members' responses to the second dimension (Implementation of the Continuous Improvement Process) ranged between (4.29 - 3.77), comprising 10 items with a high level of agreement and one item with a very high level of agreement. The item "The company adopts best practices in the field of drug manufacturing" ranked first with an arithmetic mean of (4.29), a percentage of (85.8%), and a very high degree of agreement, followed by the item "The company's management emphasizes the necessity of fully meeting the continuous improvement indicators for products" in second place with an arithmetic mean of (4.15), a percentage of (83%), and a high degree of agreement. Meanwhile, the item "The company's management provides all resources necessary to implement the continuous improvement plans for its products" ranked last with an arithmetic mean of (3.77), a percentage of (75.4%), and a high degree of agreement. The overall arithmetic mean for the implementation of the continuous improvement process dimension reached (3.97) with a percentage of (79.4%) and a high degree of agreement.

Dimension Three: Evaluation of the Continuous Improvement Process

Table (15): Arithmetic Means and Standard Deviations for the Third Dimension-Evaluation of the Continuous Improvement Process

No.	Items	Arithmetic Mean	Standard Deviation	Percentage	Level
22	The company's management benefits from the results of feedback in the continuous improvement of its products.	4.01	.771	80.2	High
23	The company's management compares the achieved continuous improvement results with the planned objectives.	4.10	.756	82	High
24	The company's management identifies any gaps between the planned and the actual (in the continuous improvement process).	3.82	.823	76.4	High
25	The company's management addresses, without delay, any negative deviations in the continuous improvement plans for its products.	3.99	.893	79.8	High
26	The company's management ensures everyone's adherence to the continuous improvement plans for products.	3.97	.900	79.4	High
27	The company's management studies customers' reactions to its products after the continuous improvement process for its products.	3.95	.794	79	High
28	The company's management analyzes feedback from purchasers (pharmacies, hospitals, etc.) after the continuous improvement process.	3.96	.770	79.2	High
29	The company's management compares the quality level of competing companies' products.	3.91	.917	78.2	High
30	The company's management analyzes the repercussions of the improvement process on costs in a manner that ensures offering its products at competitive prices.	4.10	.756	82	High
Total Score for the Evaluation of the Continuous Improvement Process Dimension		3.98	.704	79.6	High

The results in Table (15) indicated that the arithmetic means of the study sample members' responses to the third dimension (Evaluation of the Continuous Improvement Process) ranged between (4.10 - 3.82), comprising 9 items with a high level of agreement.

The two items "The company's management compares the achieved continuous improvement results with the planned objectives" and "The company's management

analyzes the repercussions of the improvement process on costs in a manner that ensures offering its products at competitive prices" ranked first with an arithmetic mean of (4.10), a percentage of (82%), and a high degree of agreement, followed by the item "The company's management benefits from the results of feedback in the continuous improvement of its products" in second place with an arithmetic mean of (4.01), a percentage of (80.2%), and a high degree of agreement. Meanwhile, the item "The company's management identifies any gaps between the planned and the actual (in the continuous improvement process)" ranked last with an arithmetic mean of (3.82), a percentage of (76.4%), and a high degree of agreement.

The overall arithmetic mean for the evaluation of the continuous improvement process dimension reached (3.98) with a percentage of (79.6%) and a high degree of agreement.

Findings Related to the Third Question: Is there an effect of human resource agility on continuous improvement in the pharmaceutical industry in Palestine?

To answer the main question, it was converted into the following null hypothesis:

There is no statistically significant effect at the significance level ($\alpha \leq 0.05$) of human resource agility on continuous improvement in the pharmaceutical industry in Palestine. The following sub-hypotheses branch off from this main hypothesis:

First: "There is no statistically significant effect at the significance level ($\alpha \leq 0.05$) of human resource agility, across its dimensions (adaptability, flexibility, sensing, creativity in problem-solving, and learning of work skills), on planning for the continuous improvement process in the pharmaceutical industry in Palestine."

In order to determine the effect among the study variables, Multiple Linear Regression was used, and the results in Table (16) illustrate this:

Table (16): Results of the Test of the Effect of Human Resource Agility on Planning for the Continuous Improvement Process in the Pharmaceutical Industry in Palestine

Variable	Coefficient	T-value	R	R Square	F	Significance Level
Adaptability	1.320	3.219	0.711	0.505	15.112	0.00
Flexibility	-.063	-.215				
Sensing	.359	1.660				
Creativity in Problem-Solving	.146	.608				
Learning of Work Skills	.422	2.116				
Total Score (Human Resource Agility)	-.163	-.229				

*Statistically significant at the significance level ($\alpha = 0.05$)

Table (16) reveals the following findings:

There is a statistically significant effect at the significance level ($\alpha \leq 0.05$) of human resource agility on planning for the continuous improvement process in the pharmaceutical industry in Palestine, as the significance level reached (0.001), which is below (0.05).

The null hypothesis was rejected, and consequently there is a statistically significant effect at the significance level ($\alpha \leq 0.05$) of human resource agility on planning for the continuous improvement process in the pharmaceutical industry in Palestine.

Second: "There is no statistically significant effect at the significance level ($\alpha \leq 0.05$) of human resource agility, across its dimensions (adaptability, flexibility, sensing, creativity in problem-solving, and learning of work skills), on the implementation of the continuous improvement process in the pharmaceutical industry in Palestine."

In order to determine the effect among the study variables, Multiple Linear Regression was used, and the results in Table (17) illustrate this:

Table (17): Results of the Test of the Effect of Human Resource Agility on the Implementation of the Continuous Improvement Process in the Pharmaceutical Industry in Palestine

Variable	Coefficient	T-value	R	R Square	F	Significance Level
Adaptability	1.167	3.040	0.754	0.568	19.465	0.00
Flexibility	.521	1.896				
Sensing	.329	1.624				
Creativity in Problem-Solving	.430	1.909				
Learning of Work Skills	.658	3.530				
Total Score (Human Resource Agility)	-1.211	-1.815				

*Statistically significant at the significance level ($\alpha = 0.05$)

Table (17) reveals the following findings:

There is a statistically significant effect at the significance level ($\alpha \leq 0.05$) of human resource agility, across all its dimensions, on the implementation of the continuous improvement process in the pharmaceutical industry in Palestine, as the significance level reached (0.001), which is below (0.05). Consequently, the null hypothesis was rejected, and accordingly there is a statistically significant effect at the significance level ($\alpha \leq 0.05$) of human resource agility on the implementation of the continuous improvement process in the pharmaceutical industry in Palestine.

Third: "There is no statistically significant effect at the significance level ($\alpha \leq 0.05$) of human resource agility, across its dimensions (adaptability, flexibility, sensing, creativity in problem-solving, and learning of work skills), on the evaluation of the continuous improvement process in the pharmaceutical industry in Palestine." In order to determine the effect among the study variables, Multiple Linear Regression was used, and the results in Table (18) illustrate this:

Table (18): Results of the Test of the Effect of Human Resource Agility on the Evaluation of the Continuous Improvement Process in the Pharmaceutical Industry in Palestine

Variable	Coefficient	T-value	R	R Square	F	Significance Level
Adaptability	.965	2.083	0.670	0.449	12.084	0.00
Flexibility	.167	.503				
Sensing	.475	1.946				
Creativity in Problem-Solving	.305	1.122				
Learning of Work Skills	.401	1.783				
Total Score (Human Resource Agility)	-.568	-.705				

*Statistically significant at the significance level ($\alpha = 0.05$)

Table (18) reveals the following findings:

There is a statistically significant effect at the significance level ($\alpha \leq 0.05$) of human resource agility, across all its dimensions, on the evaluation of the continuous improvement process in the pharmaceutical industry in Palestine, as the significance level reached (0.001), which is below (0.05). Consequently, the null hypothesis was rejected, and accordingly there is a statistically significant effect at the significance level ($\alpha \leq 0.05$) of human resource agility on the evaluation of the continuous improvement process in the pharmaceutical industry in Palestine.

Discussion of Findings and Recommendations

Discussion of the Findings Related to the First Question: What is the state of human resource agility, across its elements (adaptability, flexibility, sensing, creativity in problem-solving, and learning of work skills), in the pharmaceutical industry in Palestine?

It is evident that the overall arithmetic mean for the human resource agility domain reached (3.79) with a percentage of (75.8%) and a high degree of agreement. This indicates that the state of human resource agility, across its elements (adaptability, flexibility, sensing, creativity in problem-solving, and learning of work skills), in the pharmaceutical industry in Palestine is high.

The researchers attribute the high level of human resource agility in the pharmaceutical industry in Palestine to the convergence of environmental, organizational, and social factors that distinguish this sector, which has afforded employees in this sector exceptional capabilities in adaptation, flexibility, sensing, creativity, and learning. In light of the accelerating requirements of the regional and international markets, employees in Palestinian pharmaceutical companies have developed a high sensitivity to environmental changes. Merely following scientific developments within laboratories no longer suffices; rather, the umbrella of following organizational and technological developments has extended through workshops and professional networks. This continuous exposure, supported by joint training programs with Arab and international institutions, has created in employees an advanced "sensing capacity" that enables them to capture early indicators of any changes in demand or regulations, and subsequently to redirect their efforts and operational plans rapidly and efficiently.

Accordingly, the rise in adopting a multidisciplinary teamwork culture was reflected in the (adaptability) dimension, as the management of most companies was keen to form dynamic work teams comprising pharmacists, technicians, and quality officers under a flexible project management umbrella. This organizational structure allowed a single employee to move between diverse roles, thereby accruing cumulative experiences that qualify them to adopt new tasks rapidly upon any shift in production strategy or accreditation requirements. The (flexibility) element was likewise prominent, and it did not emerge from a vacuum but rather harmonized with the management-by-objectives-and-results approach in many local drug factories, where leaders grant employees greater freedom in choosing the tools and means necessary to

accomplish tasks. This relative detachment from the customary administrative routine stimulated a spirit of initiative and provided employees with an emotional sense that results are the sole criterion for success, thereby enhancing their ability to deal with unexpected circumstances-from delays in raw material supply to sudden changes in market demand.

What also distinguishes employees in the pharmaceutical industry is (creativity in problem-solving), which arose from a culture of learning from and overcoming mistakes. Amid the economic and health pressures the sector has experienced in recent years, internal mechanisms for after-action meetings and the exchange of experiences inside and outside the company were adopted. These mechanisms were not confined to recording errors but encouraged the proposal of innovative solutions, such as the rapid modification of production formulas or the development of unconventional partnerships with local packaging workshops.

All of this is supported by the (learning of work skills) factor, which is continuous and supported by top management, as some companies established an internal system for knowledge sharing and cross-departmental training, overseen by competent employees regarded as ambassadors of their knowledge. This initiative is not confined to formal workshops but extends to informal sessions through which employees share their daily experiences in an interactive manner. This has contributed to raising the degree of self-directed and professional learning, reflecting a motivational environment that arose from the bottom of the organizational pyramid and was not merely imposed from the top.

Based on all of the foregoing, the high degree of human resource agility in the Palestinian pharmaceutical industry can be interpreted as the product of an integrated work environment that focused on involving employees at all levels of decision-making and supported their capabilities through interactive and unconventional programs-thereby creating a flexible, responsive system capable of innovation and continuous learning. These findings indicate that the sector's success does not depend solely on technology and modern equipment but is built first and foremost upon human capital that is malleable and capable of growth, which warrants further research and development to ensure its sustainability.

The findings of the present study are consistent with the findings of the study by Ibrahim (2018), which showed that the level of human resource agility is high, and likewise with the findings of the study by Abu Al-Khail (2023), which confirmed the elevation of agility in both the sensing dimension and the remaining dimensions, and with the findings of AlTahhan and Darwazeh (2024), the study by Almagharbeh (2024), and Obaid et al. (2023), which all concurred that the level of human resource agility was high. On the other hand, the findings of the present study differ from the findings of the study by Al-Walwil (2023), which showed a moderate level of strategic agility, and also from the study by Shaheen (2022), which found a moderate availability of organizational agility, and from the findings of Abu Ramman (2022), which showed moderate arithmetic means for the dimensions of organizational agility.

Discussion of the Findings Related to the Second Question: What is the level of continuous improvement, across its elements (planning for the continuous improvement process, implementation of the continuous improvement process, and evaluation of the continuous improvement process), in the pharmaceutical industry in Palestine?

It is evident from the findings that the overall arithmetic mean for the continuous improvement domain reached (3.98) with a percentage of (79.6%) and a high degree of agreement. This indicates that the level of continuous improvement, across its elements (planning for the continuous improvement process, implementation of the continuous improvement process, and evaluation of the continuous improvement process), in the pharmaceutical industry in Palestine is high, as it is evident that the level of all dimensions of continuous improvement (planning, implementation, and evaluation of the continuous improvement process) is high.

The researchers hold that the high level of continuous improvement can be attributed to structural and cultural factors that formed a fertile environment for this element-from planning, through implementation, to evaluation. With regard to (planning for the continuous improvement process), employees in pharmaceutical companies were influenced by a future-foresight culture built upon traditional and informal partnerships with raw material suppliers and packaging producers in the local market; communication was not confined to formal contracts but extended to periodic meetings, which provided faster and more candid feedback channels. This approach allowed management to draw up proactive improvement plans built upon cumulative experiences-the least of which are joint workshops, and the most of which are meetings discussing weaknesses and determining improvement priorities tailored to the local reality.

As for (implementation of the continuous improvement process), it rested upon what may be termed a "flexible role network," as Palestinian pharmaceutical companies fashioned non-rigid job roles, employing the expertise of pharmacists and technicians together in small teams participating in a trial of improvement modifications to production lines. This approach not only crystallized the employee's ability to diversify their tasks with ease but also unleashed their creativity in adopting new practices (such as the transition from manual packaging to semi-automated lines), markedly raising the level of plan implementation. With regard to the evaluation of the continuous improvement process, companies developed a mechanism that is at once simple and profound, inspired by the principles of "open loops," whereby seminars do not end with the attendees leaving the venue but discussions continue in the corridors and through digital groups, so that employees' observations are raised directly to decision-makers. This dual network of formal and informal evaluation contributed to detecting gaps precisely and addressing them rapidly.

Accordingly, it may be said that what distinguishes the pharmaceutical industry in Palestine is not only regulations and technological innovations but the "communal spirit" that draws everyone toward continuous work and performance improvement, and which constitutes a principal reference in interpreting the high level of continuous improvement. Despite the constraints on capabilities, companies succeeded in transforming market pressures and challenges into incentives for innovating sustainable improvement mechanisms that proceed without gaps or delay.

The findings of the study are consistent with the findings of the study by Ibrahim (2024) that the level of human resource agility was high, reflecting a high degree of systematic application of continuous improvement processes amid practices of training, work design, and results-oriented performance appraisal. The study by Abu Al-Khail (2023) likewise confirmed, in Jordanian pharmaceutical companies, a high level of organizational agility with the superiority of the sensing dimension among its dimensions, indicating the effectiveness of continuous planning, implementation, and evaluation.

Discussion of the Findings Related to the Third Question: Is there an effect of human resource agility on continuous improvement in the pharmaceutical industry in Palestine?

This question answers the study's main hypothesis, which states: "There is no statistically significant effect at the significance level ($\alpha \leq 0.05$) of human resource agility on continuous improvement in the pharmaceutical industry in Palestine."

It is evident from the findings that there is a statistically significant effect at the significance level ($\alpha \leq 0.05$) of human resource agility, across all its dimensions, on continuous improvement across all its dimensions (planning for the continuous improvement process, implementation of the continuous improvement process, and evaluation of the continuous improvement process) in the pharmaceutical industry in Palestine, as the significance level reached (0.001), which is below (0.05). Consequently, the null hypothesis was rejected, and accordingly there is a statistically significant effect at the significance level ($\alpha \leq 0.05$) of human resource agility, across all its dimensions, on continuous improvement across all its dimensions (planning for the continuous improvement process, implementation of the continuous improvement process, and evaluation of the continuous improvement process) in the pharmaceutical industry in Palestine. This, in turn, answers the third study question by confirming that there is an effect of human resource agility on continuous improvement in the pharmaceutical industry in Palestine.

The researchers attribute this finding to the reflection of flexibility's role in enabling work teams to restructure production schedules and inspection and testing procedures in accordance with sudden variables (from a delayed raw material shipment to a change in market specifications) without compromising the course of improvement programs. This capacity for internal maneuvering enables the company to launch miniature improvement experiments in a short time, thereby raising flexibility's contribution to the overall outcome of the continuous improvement process and justifying the high statistical significance of this factor. Likewise, the value of sensing demonstrates that it is the element that supplies the improvement system with information and early forecasts; its role is not confined to gathering data but extends to analyzing it and guiding leadership in averting problems before they occur. In practice, this factor prompted employees to use simple tools (such as performance-tracking sheets and internal chat groups) to exchange immediate impressions, which were regarded as real-time feedback contributing to adjusting improvement trajectories more rapidly-which explains the high regression coefficient and the strength of the effect.

Creativity in problem-solving emerges as a factor stimulating innovation within the production environment, as individual creative practices (such as the rapid test-

ing of new formulas or proposing a minor modification to packaging lines) were transformed into adopted policies at the level of pharmaceutical companies, so that spontaneous ideas came to be incorporated into the periodic improvement schedule. This empowerment of unconventional ideas within improvement mechanisms brought the clear effect of creativity to a notable level reflecting its role in driving the wheel of development. With regard to the learning of work skills, the role of learning transcends the acquisition of information to become a catalyst for understanding improvement mechanisms and applying them in practice. The internal training programs designed specifically to support improvement projects are no longer mere theoretical courses but comprise practical sessions and miniature projects that employees themselves undertake, thereby gaining direct experience that contributes to implementing developmental initiatives rapidly and accurately. This field-based formulation of the learning process, which integrates theory with practice, gave the learning of skills a clear effect in accelerating continuous improvement cycles and increasing their effectiveness.

This is consistent with the findings of the study by Ibrahim (2024), which showed that high-performance human resource practices enhance workforce agility and are thereby positively reflected in improving operations and creativity in companies, and likewise with the findings of the study by Attiany (2024), which linked human resource flexibility with innovative performance in companies, thereby enhancing their capabilities for adaptation and continuous product improvement.

Recommendations of the Study

In light of the findings of the study, the researchers recommended the following:

1- Adopting a flexible working-hours system that allows employees to choose the times for accomplishing their tasks in a manner that does not affect production requirements, with weekly performance monitoring by department managers to ensure improved work efficiency.

2- Establishing a unit for analyzing market and technological data within each company, comprising employees from marketing and quality, working to submit monthly reports to the board of directors regarding potential risks and opportunities, with the aim of enhancing the capacity for prediction and early response.

3- Harnessing creative capabilities by launching an internal "Idea Lab" program, in which employees' solutions are presented on a quarterly basis before a specialized committee, and the best three proposals are selected for pilot application each cycle.

4- Allocating three quarterly training days in cooperation with Palestinian universities to update employees' skills, particularly in modern technological and pharmaceutical skills, with participants required to submit brief applied reports to measure the impact of the training and its employment in the work environment.

5- Forming joint improvement teams from production, quality, and marketing in Palestinian pharmaceutical companies, holding bi-weekly meetings and submitting progress reports every three months to the board of directors, with follow-up on the implementation of proposals through key performance indicators (KPIs) to ensure the sustainability of improvement.

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