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Industrial Operation Performance: Unveiling the Influence of Information Quality, Sharing, and Customer Relationships

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Abstract:

The foundation of optimal and proficient operational performance is contingent upon the caliber of information. Organizations that prioritize the acquisition, examination, and application of high-quality information are more likely to optimize their operational processes, save costs, enhance customer satisfaction, and achieve a competitive edge in their respective industries. The main objective of the study was to identify the effect of business supply chain practices (information Sharing, information quality, and Customer Relationships) and operation performance in the Jordanian food industries sector in the al Hassan industrial estate. To answer the problem of the study a questionnaire was developed and distributed to 67 employees. The descriptive and analytical approaches were used to attain the study's goal. The study found a statistically significant effect of supply chain practices (information Sharing, information quality, & Customer Relationships) on operation performance. The implementation of efficient customer relationship (CR) strategies has been observed to yield numerous favorable consequences for enterprises. For example, it is improved operational efficiency, decreased costs, increased revenue, and the construction of a more sustainable company framework.

Keywords: *Supply Chain Practices, Operation Performance, Information Sharing, Information Quality, Customer Relationships.*

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أداء العمليات الصناعية: الكشف عن تأثير جودة المعلومات ومشاركتها وعلاقات العملاء

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ملخص:

يتوقف أساس الأداء التشغيلي الأمثل والفعّال على جودة المعلومات. الشركات التي تعطي الأولوية لاكتساب وفحص وتطبيق المعلومات عالية الجودة أكثر قدرة على تحسين عملياتها التشغيلية، وتوفير التكاليف، وتعزيز رضا العملاء، وتحقيق الأفضلية التنافسية في صناعاتها الخاصة. الهدف الرئيس من الدراسة هو التعرف على تأثير ممارسات سلسلة التوريد التجارية (مشاركة المعلومات، جودة المعلومات، وعلاقات العملاء) والأداء التشغيلي في قطاع الصناعات الغذائية الأردني في مدينة الحسن الصناعية. وللإجابة على مشكلة الدراسة تم تطوير استبانة وتوزيعها على 67 موظفا. وتم استخدام المنهج الوصفي والتحليلي لتحقيق هدف الدراسة. وتوصلت الدراسة إلى وجود تأثير ذي دلالة إحصائية لممارسات سلسلة التوريد (مشاركة المعلومات، جودة المعلومات، والعلاقات مع العملاء) على أداء العمليات. وقد لوحظ أن تنفيذ استراتيجيات العلاقة الفعالة مع العملاء (CR) يؤدي إلى الكثير من النتائج الإيجابية للمؤسسات. على سبيل المثال، يتم تحسين الكفاءة التشغيلية، وخفض التكاليف، وزيادة الإيرادات، وبناء إطار عمل أكثر استدامة للشركة.

الكلمات المفتاحية: *ممارسات سلسلة التوريد؛ الأداء التشغيلي؛ مشاركة المعلومات؛ جودة المعلومات؛ العلاقات مع العملاء.*

1. Introduction

Jordan's economy depends on various key sectors, including the financial sectors (Banking, Insurance, Diversified Financial Services, and Real Estate). industry sector ((Pharmaceutical and Medical Industries, Chemical Industries, Food and Beverages, Tobacco and Cigarettes, Mining and Extraction Industries, Engineering and Construction, Electrical Industries, Textiles, Leathers and Clothing) and services sectors (Commercial Services, Utilities and Energy, Media, Technology and medication, Transportation, Hotels and Tourism, Educational Services, Health Care Services) (Bashatweh, et al.,2021). The food, catering, agricultural, and livestock industries sector is considered one of the most important local industrial sectors as the products of this sector are numerous and they are intertwined with several other industrial sectors to form an interconnection link that is characterized by complementarily. The sector is also considered an important pillar in terms of food safety as it increases the added value of the agricultural sector the food industry in Jordan has an annual production volume exceeding 4.5 billion dinars, accounting for nearly 25% of total industrial output. This sector plays a significant and central role in the Jordanian industrial landscape and contributes approximately 6% to the country's gross domestic product. In the last five years, this sector has consistently generated an average added value of 1.5 billion dinars annually, representing 41% of the sector's total production and 20.3% of the overall industrial sector's value addition. Every dinar invested in the food industry has a multiplier effect on the national economy, resulting in a contribution of 2.5 dinars, thanks to its strong interconnections with various other sectors. Consequently, its overall contribution to the gross domestic product, both directly and indirectly, stands at 15%. Regarding export capabilities, it is noteworthy that food industry exports reached approximately 855 million dollars last year, marking a remarkable 32% growth compared to 2021. These exports now account for over 8% of the total industrial exports from Jordan (JCI, 2023). Assessing a company's performance is crucial for all stakeholders, including suppliers, investors, and other involved parties. Typically, the financial framework stands out as the primary benchmark for evaluating company performance (Bashatweh&, Ahmed,2020). Ensuring the sustained resilience of companies against external threats relies not solely on robust preparation and operational planning. It requires constant evaluation to effectively implement and adapt processes and procedures, aligning them with the objectives to attain the desired outcomes (AlZou'bi, et al.,2021).

Supply chain may be defined as an integrated process wherein a number of various business entities (like suppliers, manufacturers, distributors, and retailers) work together in an effort to: (1) acquire raw materials, (2) convert these raw materials into specified final products, (3) deliver these final products to retailers and final customers (Szozda & Werbińska-Wojciechowska, 2013). Supply chain management (SCM) refers to "the integration of key business processes from end-user through original suppliers, which provides products, services, and information that add value for customers and other stakeholders". (Ageron et al., 2013). The study of supply chain management (SCM) has progressed to the point that researchers can now identify and validate the fundamental SCM models and structures thanks to analytical and empirical approaches. Numerous studies have also looked at how different SCM-related practices impact how well organizations perform. Many academics are concentrating on the cross-industry validity of earlier findings as SCM research develops. The impact of multiple "best practices" being used by firms at various points in the supply chain is one of the interesting elements. Determine if frequently recommended methods are equally applicable over the whole supply chain by addressing this important topic (Cook et al., 2011).

Supply chain management has the ability to promote the integration of independent organizations in order to improve organizational collaboration. Within the areas of supply chain

management, literatures focus the need to understand supply chain management practices (SCMPs), which have become an essential prerequisite to remaining competitive in the global race with profitable growth. Furthermore, the strategic nature of SCMPs will be able to explain the Supply chain management aims close integration of internal operations inside the organization as well as external links with suppliers in order to be highly competitive while also achieving sustained profitability growth (Sundram et al., 2016).

The purpose of this article is to emphasize the relationship between business supply chain practices (information Sharing, information quality, & Customer Relationship) and performance in Jordanian food industries. The significance of this study is that it demonstrates to managers, investors, and other decision makers the relationship between supply chain practices (information Sharing, information quality, & Customer Relationship) and performance, allowing them to make more informed decisions about supply chain practices based on the findings. Thus, the problem of the study can thus be expressed in the following main questions

RQ1: Is there an impact of supply chain practices on operation performance in the Jordanian food industries sector in the al Hassan industrial estate?

Sub questions:

1. Is there an impact of information quality (IQ) on operation performance in the Jordanian food industries sector in the al Hassan industrial estate?
2. Is there an impact of information sharing (IS) on operation performance in the Jordanian food industries sector in the al Hassan industrial estate?
3. Is there an impact of Customer Relationship on operation performance in the Jordanian food industries sector in the al Hassan industrial estate?

2. Literature review and research framework

2.1 Operation Performance:

Manufacturing businesses are currently operating in a business climate that is marked by fierce competition, unparalleled technology advancements, and unpredictable market conditions. There are other factors that have played a significant role in shaping this situation, with globalization, free trade agreements, advancements in information and production technologies, shortened product life cycles, and fast-evolving customer demands being of utmost importance. As a result, manufacturing organizations are facing growing pressure to effectively utilize knowledge-based resources in order to improve their operational performance and maintain their competitive advantage. Given the strategic significance of the operations function in fostering and maintaining competitiveness, it is imperative for manufacturing organizations to develop operations strategies that align with and facilitate the execution of their overall corporate competitive strategy (Al-Sa'di et al., 2017). Operational performance can be defined as a measure of how well a firm uses its assets from its core operations and generates revenues over a given period of time (Akinlabi, 2021). According to Azim et al. (2015) operational performance refers to the measurable aspects of the outcomes of an organization's processes, such as reliability, production cycle time, and inventory turns. The researchers believe that the assessment of management's performance and its effective utilization of assets to create income for the company is closely associated with the perception of operational performance.

2.2 Supply Chain Integration (SCI)

According to Sundram et al. (2016) the extent to which all operations inside a company and the activities of its suppliers, customers, and other supply chain members are integrated is described as supply chain integration (SCI).and it consists of two stages:

1. Internal integration fosters strong collaboration between functions such as shipping and inventory management or buying and raw material management.
2. External integration has two directions: forward integration for physical delivery flow between suppliers, manufacturers, and customers, and backward coordination of information technologies and data flow from customers, to manufacturers, to suppliers.

2.3 Information Quality (IQ) and Operation Performance:

The expansion of data warehouses and managers' and information users' direct access to information from multiple sources has raised the demand for, and awareness of, high-quality information in businesses. (Lee et al., 2002). IQ includes such aspects as the accuracy, timeliness, reliability, freedom from bias (DeLone et al.,1992). Ahmad and Zailani (2007) looked on the role of information quality in customer and supplier. IQ shows to be important in customer and supplier, particularly in the buyer-supplier interaction. Furthermore, the information quality between customer and supplier will have a significant influence on the company's current commercial performance. Therefore, we hypothesize that.

2.4 Information Sharing and Operation Performance:

According to Li et al. (2006) the Level of information sharing define he extent to which critical and proprietary information is communicated to one's supply chain partner. Based on the impact of information sharing, four stages of information sharing across firms have been described: order information exchange, operation information sharing, strategic information sharing, and strategic and competitive information sharing. Order information, such as order quantities and pricing, is communicated at the first level using electronic data interchange (EDI) and similar technology (Lin et al., 2002) Various researchers shown the relationship between information sharing and operational performance. According to (Ajay & Maharaj, 2010), information sharing reduces the total cost of running a successful supply chain Thus, this affects the operational performance. Rashed et al. (2010) they found there is an effected of information and knowledge sharing on the operational performance

Customer relationship

According to Li et al. (2006), customer relationship management is the full set of activities used to manage customer complaints, create long-term relationships with consumers, and improve customer satisfaction. The primary idea of customer relationship management is information sharing within supply chains (Sukati et al., 2012).

3. Methodology:

This study adopted a descriptive-analytical method. The primary research data was collected using a structured questionnaire. Rating scale of 5 to 1; where the opinions given by the respondents were rated as follows, 5= Strongly Agree, 4= Agree, 3= Neutral, 2= Disagree and 1= Strongly Disagree. Secondary data was collected through various websites and annual reports.

3.1 Population and Sample

The Jordanian food industries sector in the al Hassan industrial estate is the study's population. All managerial and non-managerial levels are included in the unit of analysis (managers and employees). The authors of the study distributed 90 questionnaires, 15 of which were unreturned, and 8 of which were deleted because of missing data or unsuitability for research, as a result, 67 surveys are acceptable for further study.

3.2 Data Collection

The descriptive and analytical approaches were used to attain the study's goal. The study collected data from two primary sources: for secondary data, the study used prior studies, books, magazines, scientific journals, and publications connected to the subject of investigation. In terms of primary data, the study used a questionnaire developed to collect the information needed for the investigation.

3.3 Hypotheses

In accordance with the research framework illustrated in Figure (1), the study formulated the subsequent hypotheses.

HO1: There is no statistically significant at the (0.05) level for supply chain practices on operation performance in the Jordanian food industries sector in the al Hassan industrial estate

Sub hypotheses:

HO1-1: There is no statistically significant at the (0.05) level for information quality on operation performance in the Jordanian food industries sector in the al Hassan industrial estate

HO1-2: There is no statistically significant at the (0.05) level for information sharing on operation performance in the Jordanian food industries sector in the al Hassan industrial estate

HO1-3: There is no statistically significant at the (0.05) level for customer relationship on operation performance in0 the Jordanian food industries sector in the al Hassan industrial estate

3.4 Goodness of Data

It is critical that the data obtained be reviewed for validity and reliability before evaluating the study hypotheses. The instrument's content validity was determined by gathering expert comments from several professors at Jordanian universities.

3.5 Data Analysis Methods

The researcher used the Statistical Software Package for Social Sciences (SPSS) to analyze and testing of hypotheses using the following statistical tools such as: Cronbach alpha, Descriptive Statistics and the hypotheses were examined by Multiple Regression.

3.6 Sample Characteristics:

This section describes the demographic characteristics of the study sample. To describe the characteristics of the sample of the study, the frequency and percentage of the demographic variables were found for the sample of the study as follows:

Table (1) Demographic Profile of the respondents

	Category	Frequency	Percentage (%)
Education	Bachelor degree	35	%52.2
	High Diploma	2	%2.98
	Master degree	20	%29.8
	PhD	10	%14.90
	Total	67	100%
Years of Experience	less than 5	30	44.7
	5 to 15	7	10.4
	15 to 20	28	41.7
	More than 20	2	2.98
	Total	67	100%
Position	Logistics Specialist	35	52.2
	Purchasing manager	7	10.44
	Procurement Specialist	25	37.3
	Total	67	100%

Table (1) shows: shows that 52.2 % of the sample held a Bachelor degree. Those with a master's degree were only 29.8 %, and the remaining either had high diploma 2.98% and PhD degree 14.9%.

In relation to experience, Table 1 shows that 44.70% of the sample had less than 5 years of work experience, and 41.70% had experience between 15 and 20.

Finally, in relation to Position, Table 1 shows that 52.20% of the sample had Logistics Specialist Position, and 37.80% had Procurement Specialist Position and10.44% of the sample had Purchasing manager Position

3.7 Reliability of Measurement:

To ensure the dependability of the questionnaire survey, a reliability test is required. Nunnally (1978) states that the inter-item analysis may be used to examine the scale's internal consistency in order to assess the reliability of the questionnaire survey. As a result, Cronbach's alpha is regarded as a sufficient measure of the survey instrument's internal consistency and reliability (Sekaran & Bougie, 2010). The test results show that Cronbach's alpha is 0.752, which is greater than the minimum allowed value of 0.60. This indicates that the techniques employed to measure the variable were appropriate (Sekaran & Bougie, 2010).

4. Result:

Hypotheses testing

Table (2): Hypotheses testing

Hypotheses	R^2	T	Sig - t	Results
HO1	0.88	15.821	0.000	Accepted
HO1-1	0.62	7.447	0.000	Accepted
HO1-2	0.86	14.307	0.000	Accepted
HO1-3	0.76	10.364	0.000	Accepted

HO1: shows supply chain practices outcomes on operation performance, indicating that supply chain practices had a significant influence on operation performance in Jordanian Food sectors. According to Table 2, the Significant model has a T (15.821) value with a significance of sig= 0.000 and an R square of (85%). The variation in operation performance may be explained by the variation in the variables in total while holding all other factors constant. confirming the aspect's positive relevance.

HO1-1: shows IQ outcomes on operation performance, indicating that IQ had a significant influence on operation performance in Jordanian Food sectors. According to Table 2, the Significant model has a T (7.447) value with a significance of sig= 0.000 and an R square of (62%). The variation in operation performance may be explained by the variation in the variables in total while holding all other factors constant. confirming the aspect's positive relevance.

HO1-2: shows IS outcomes on operation performance, indicating that IS had a significant influence on operation performance in Jordanian Food sectors. According to Table 2, the Significant model has a T (14.307) value with a significance of sig= 0.000 and an R square of (86%). The variation in operation performance may be explained by the variation in the variables in total while holding all other factors constant. confirming the aspect's positive relevance.

HO1-3: shows CR outcomes on operation performance, indicating that CR had a significant influence on operation performance in Jordanian Food sectors. According to Table 2, the Significant model has a T (10.364) value with a significance of sig= 0.000 and an R square of (76%). The variation in operation performance may be explained by the variation in the variables in total while holding all other factors constant. confirming the aspect's positive relevance.

5. Conclusions:

The study is aimed to identify the relationship between business supply chain practices (information Sharing, information quality, & Customer Relationships) and operation performance in the Jordanian Food sector in the al Hassan industrial estate. To answer the problem of the study a questionnaire was developed and distributed to 67 employees.

By testing the hypotheses of the study, there is a significant impact on business supply chain practices (information Sharing, information quality, & Customer Relationships) and operation performance.

The foundation of optimal and proficient operational performance is contingent upon the caliber of information. Organizations that prioritize the acquisition, examination, and application of high-quality information are more likely to optimize their operational processes, save costs, enhance customer satisfaction, and achieve a competitive edge in their respective industries. The acquisition of high-quality information is of utmost importance for organizations in order to effectively identify and mitigate potential threats. This includes the identification of potential operational risks, regulatory considerations, and disruptions throughout the supply chain. The presence of current and accurate information enables the effective execution of proactive risk management tactics, hence reducing the likelihood of operational disruptions. The integration of accurate and reliable information has the potential to result in cost reduction through several mechanisms, including improved negotiation strategies with suppliers, advanced forecasting methods, reduced need for rework, and lower occurrence of errors. Several factors contribute to the improvement of operational efficiency and reduction of operating expenses. The procurement of precise and dependable data holds paramount significance in the assessment and surveillance of key performance indicators (KPIs). Organizations possess the capacity to employ Key Performance Indicator (KPI) data for the purpose of proficiently monitoring performance trends over a specified duration. This allows individuals to pinpoint certain areas that necessitate continuous improvement, hence allowing the evolution and adjustment of processes to fit ever-changing business situations.

Organizations that prioritize and actively facilitate the sharing of information have enhanced capabilities in adapting to dynamic conditions, reducing costs, and effectively meeting consumer demands. The process of information sharing plays a crucial role in fostering collaboration and coordination among diverse departments and teams within an organization. The provision of relevant information to employees facilitates more effective collaboration, resulting in increased operational efficiency and optimized workflow. The timely sharing of information enables efficient and knowledgeable decision-making procedures. Operations managers have the capability to effectively and rapidly respond to variations in demand, issues within the supply chain, and other notable concerns. As a result, they are able to minimize times of inactivity and optimize the allocation of resources.

The relationship between customer relationships and operational success can be described as symbiotic. The implementation of efficient customer relationship (CR) strategies has been observed to yield numerous favorable consequences for enterprises. The results encompass improved operational efficiency, decreased costs, increased revenue, and the construction of a more sustainable company framework. Furthermore, placing emphasis on achieving operational excellence can additionally enhance the enhancement of customer experience and foster customer loyalty. The interdependence and significance of these two criteria are crucial in attaining enduring organizational prosperity. The enhancement of operational efficiency: The use of Customer Relationship (CR)

management has the capacity to enhance several operational processes, encompassing sales, marketing, and customer support. The application of automation and data-driven insights has promise for improving efficiency across diverse domains, leading to reduced operational costs and increased overall performance. The optimization of supply chains is a crucial subject of examination and implementation within the domain of operations management. The implementation of corporate responsibility (CR) practices can have a positive impact on the accuracy of demand forecasting for firms operating in the manufacturing or distribution sectors. As a result, these outcomes lead to improved inventory management, reduced carrying costs, and increased efficiency within the supply chain.

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