Supply Chain Integration and Workplace Values in Jordan

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Abstract
Medicine is a basic good of the health system, but it accounts for a high amount of the healthcare costs and thus needs excellent control and management. Jordan seeks to regulate the circulation of this good in various ways. This descriptive study was conducted to reveal the extent of the understanding of the importance of supply chain integration (SCI) among the supply chain workers (SCWs) and its effects on workplace values (WVs) in drugstores. The study concluded that there is a medium level of awareness of these factors. This study used a questionnaire to collect the data and SPSS v.18 to analyze the data. This study stressed the importance of using SCI and improving WVs to improve and regulate the pharmaceutical sector.
Keywords: supply chain integration, workplace values, pharmaceutical sector, supply chain workers, Jordan.

1. Introduction

Pharmaceutical sector is becoming increasingly sophisticated, vibrant, and globally competitive; therefore, a greater understanding regarding the factors that influence them is required. The challenges of increasing global competition have led the pharmaceutical sector to seek more competitive advantages in order to survive, grow, become efficient, and improve the quality of service. One such strategy is to focus on work conditions and customer needs, such as supply chain management (SCM), with existing staff having values of interest, especially with regard to vital goods such as medicine (Evans & Lindsay, 2017). Studies have indicated that supply chain integration (SCI) and workplace values (WVs) are basic techniques for regulating the pharmaceutical sector` (Maloni, 2017; Camposa, 2017). From the early 1980s, the pharmaceutical sector worldwide has witnessed the SCI concept and has realized the worth of a customer and the need to respond quickly to customer requirements. SCI is an integrated procurement strategy implemented from supplier to consumer to achieve greater interaction and collaboration, and a conjoint understanding among all stakeholders (Christopher, 2016; Eagle, 2017). SCI is the main feature of SCM and is based on the rearrangement of internal and external resources in a way that reduces operational costs and increases value by creating an effective linking process among all partners (Management Association Information Resources, 2017; Sweeney, 2011). The pharmaceutical sector has achieved significant benefits from the adoption of SCI with health intuitions (Harrison & Harrison, 2015), and has realized that understanding their location is key to the strategic usage of SCI (Bosch, 2012). Studies have shown that the application of SCI in developed countries is experiencing momentum and growth (Elms & Low, 2013; Wang, 2013; Espenshade & Tannen, 2015; Jacobs & Signore, 2016). In contrast, institutions in developing countries lack applications of SCI (Khosrow-Pour, 2013; National Institute of Agricultural Extension Management, 2015; Industrial Development Report, 2015).

In Jordan, the pharmaceutical sector is one of the most important economic sectors (International Bank for Reconstruction and Development, 2017; Fathelrahman, Ibrahim, & Wertheimer, 2016). Since 1962, this sector has continued to grow, up to today. Ensuring the success of this sector always requires more attention on SCI and good WVs (World Bank, 2017). In Jordan, there are 164 drug factories, 287 drugstores, and 2,461 pharmacies operate (Jordanian Ministry of Health, 2016). The pharmaceutical sector employs about 10,000 workers, which constitutes 3.3% of Jordan's total technical scientific labor force (Jordanian Ministry of Labor, 2017). In Jordan, the total expenditure on the pharmaceutical sector through health services is 38% of the public health budget (Jordanian Ministry of Health, 2016). This study is limited to an evaluation of SCI and WVs in drugstores because these entities are the basic players for managing, controlling, and distributing drugs in the Jordanian pharmaceutical sector.

Organizations today are most similar to live organisms, and transform into different robust forms in their present environment (Smith & Graetz, 2011). So, WVs of institutes have garnered more attention (Mir, Willmott, & Greenwood, 2016). When organizations have the workers they want, such individuals are then able to assist and shape the organization through their values and approaches. When analyzing WVs, we need to focus on workers at organizations who achieve a greater awareness of the source of what is correct and what is not correct about the organization (Alexander & Price, 2013). The pharmaceutical sector is described using principles, aims, requirements, behavioral selection, and preferences. This course draws on the importance of this sector from two aspects: the theoretical importance of the study in guiding researchers' attention to the importance of the topic that it addresses and the moral and behavioral framework. It is easy to follow the close link between the organization's value framework and its organizational and technological systems, and the practical importance of institutions focused on activity, innovation, and ideas that arise from using their resources to fulfill their tasks. Therefore, this study achieves the objectives subsequently listed. By good WVs,

we can enjoy a relaxed work life, be happy, and experience self-respect and true friendship (Cavoulacos & Minshew, 2017).

2. Objective of the study

Kherbach and Mocan (2016) found that the application of SCI improves business enterprises' WVs, especially in the pharmaceutical sector. However, studies addressing this subject in Jordan are lacking (Saleem Abu Zaid, 2016). Therefore, the basis of this current study is to gain a greater understanding of the application of SCI and WVs in drugstores by attempting to answer the following questions:

1. Are SCWs in drugstores aware of the importance of SCI?
2. Are SCWs in drugstores aware of the importance of WVs?
3. What is the effect of SCI practices in drugstores on WVs?

3. Literature Review

3.1 Supply chain integration

The rapid changes and the evolution of the challenges faced by business organizations drew attention to one of the key basic techniques that helps organizations meet these challenges, which is the SCI (Bryan, 2015). Organizations that learn how to build and engage in a robust SCI are able to achieve good performance, survival, and success (Ehap, 2015). An SCI is known as the window that an organization uses to achieve integration between its various functions, starting from the suppliers and ending with the final consumer, to support the flow of goods and services and to maximize organizational performance and operational value (Abu Zaid, 2016). To that end, interest in SCI is growing and greater performance improvements should be achieved. Integration has a positive impact on and is a key factor in achieving SCM. Therefore, to increase the utility of modern management theories to achieve improved performance and to build better relationships with partners, business organizations tend to understand and apply SCI (Daft, 2016). Integration is about taking parts to form a whole, and merging operations of one or more organizations into a single, compatible process (Borlase, 2013). That is, SCI is a process that addresses the complexity of the business environment to improve it and facilitate the flow of resources from suppliers to customers. SCI is a strategic communication and cooperation process within businesses or with other business enterprises (Sehgal, 2009). The previous literature and studies have reported many benefits of SCI. SCI improves performance, information sharing (Ibrahim & Hamid, 2014), WVs (The Joint Commission, 2008; Ibrahim & Hamid, 2014), collaboration and cooperation among suppliers and customers (Mosadeghrad, 2014), flexibility (Jain & Swami, 2012), stakeholders' understanding and cost reduction (Abu Zaid, 2016), and understanding regarding the importance of delivering with speed and reliability (Boon-itt, 2009). In the literature and studies, SCI is categorized into several classifications (Hsiao-Fan, 2008), such as into three levels as internal integration, supplier integration, and customer integration. Another classification for SCI is as financial flow integration, physical flow integration, and information flow integration (Zolait & Ibrahim, 2010). Zhaoa, Huo, Selend, and Yeung (2011) classified SCI into five levels, including internal integration, supplier integration, customer integration, and the relationship commitment to the customer and supplier. Abu Zaid (2016) classified SCI into three levels: internal integration, supplier integration, and customer integration. From these studies, we find that several classifications have been adopted for SCI and no agreement exists for a single measurement level. Therefore, the current study classifies SCI into three levels: internal integration, supplier integration, and customer integration.

Internal integration (II): An approach that observes the II of SCI and that represents the cooperation among the various departments in the institution. II is about integrating functions in a climate of trust and working as a team. The organization plans and designs a product and workflows as if completed by a single unit, creating shared risks and benefits. This process leads to a high organizational level of interaction, communication, information exchange, and coordination among several parties in the same organization, and it also leads to coordination among the building blocks of the organization (Nik, 2012; Brown, 2013; Wisner, Tan, & Leong, 2016).

Supplier integration (SI): An approach that seeks to improve conciliation and relevance, and that represents a state of synergy between suppliers and other parties. It includes the exchange of information, materials, upgraded activities, and integrated cultures and results in the reduction of cost and knowledge development between suppliers and others. This approach leads to increasing cooperation among leaders, smoothing sales and purchase processes, and strengthening alliances through the achievement of goals. Efficient flows can be eased and maximum value is achieved for the customer (Li, Ragu-Nathanb, Ragu-Nathanb, & Rao, 2004; Flynn, Huo, & Zhao, 2010; Sweeney, 2011).

Customer integration (CI): Effective CI aims to improve customer communication, meet customer needs, improve customer value, maintain customer loyalty and retention, engage in targeted marketing, reach the target market, strengthen customer tracking, improve customer relationships, increase customer focus and attention. CI seeks to improve after-sales services, participate in risk tolerance, and increase common benefits (Blecker, 2006;

Sesselmann, 2016).

3.2 Workplace values

Concepts such as WVs have played an important role in both theory and practice since the 1930s (Keynes, 2016). A WVs in an organization has seen more attention as a source of knowledge on what is beneficial to and as a source of knowledge of what harms the institution (Giacalone & Jurkiewicz, 2003). WVs are generally described as a set of guidelines, beliefs, needs, and characteristics that help select goals, behavior, and favorites. The workplace faces many complex challenges, such as intense competition and the need for growth, development, and adaptation in a rapidly changing global economy. This matter is significant because the differences or variances among workplace conditions and WVs are vital to work quality and worker fulfillment. WVs affect the organization's obligations, performance, and turnover (Hauff & Kirchner, 2014).

4. Study methodology

This study is based on a descriptive approach that includes the use of the field survey method to collect and analyze data. A desk survey was also conducted to review the studies' theoretical and field research. The most important studies, which formed an appropriate guide for this research, were used to gain a greater understanding of the levels of SCI application (II, SI, and CI) and the effect of SCI on WVs in Jordanian drugstores. The approach in this study is quantitative, which was adopted in most of the studies that addressed a similar subject. In Jordan, 287 functioning drugstores are registered in the Jordanian Ministry of Industry and Trade. A random sample of 57 was selected (20%), and it was found that all operated in the capital of Amman in Jordan. Twenty-two stores were excluded because of their unwillingness to participate or because of a temporary suspension of work for reasons unknown to the author (N = 37). These drugstores consisted of 137 workers related to work SCI. It was found that the majority of participants were aged $\geq$ 54, 29% were female, more than 68% had a university certificate qualification, only 8% of the participants were qualified in logistics science, and 80% had at least 10 years of experience.

Our literature review did not specify appropriate tools that could be directly used in the current study. Therefore, the study's questionnaire was formulated with clarity to increase the response rate, and it adapted a five-point Likert-style scale. The scales were 5 for strongly agree, 4 for agreement, 3 for neutral, 2 for disagree, and 1 for strongly agreeable. The questionnaire was developed through an extensive review of the literature and previous studies (Kotei, 2014; Garcia, Luque, & López, 2013; Basnet, 2012; Paiva, Gavronski, & D'Avila, 2011); the final questionnaire included 24 questions. The questionnaire measured SCI through 15 questions. The first part of the questionnaire, questions 1–4, explored the characteristics of the study sample (age, gender, qualification, and experience). The second part, questions 5–9, assessed SCWs' awareness of the importance of II, while the third part, questions 10–14, evaluated the importance of SI. The fourth part, questions 15–19, evaluated the importance of CI from the perspective of SCW. Tables 1–3 indicate the grouping of the questions, which guided the participants to respond to these specific topics. Finally, WVs were assessed in the fifth part through questions 20–24, which are shown in Table 4. These questions evaluated the awareness of the SCW in drugstores regarding the importance of WVs. Cronbach's alpha reliabilities in this study ranged from 0.60 to 0.83, for all groups of questions.

The questionnaire was pre-tested by presenting it to three specialists to check for possible inadequacies or weaknesses in the study questions, and the proposed amendments were made. The questionnaire was distributed by the author and his assistants by hand from October to November 2017, and full-time workers assured the confidentiality of the answers. All participants were informed that they would remain anonymous and that their participation was voluntary. They were also informed that they could withdraw at any time during the study. The number of questionnaires returned was 111 (81%), which is a valid percentage for continuing the study procedures (Babbie, Halley, Wagner, & Zaino, 2013).

Multivariate analysis of the questionnaire information using Statistical Package for the Social Sciences (SPSS) Version 18 was conducted; it included the following: 1) Cronbach's alpha to measure the reliability of the instrument and 2) descriptive statistics, including mean values (MV) and standard deviations (SD), for the answers to questions 1 and 2 to reveal the agreement or disagreement with the questionnaire items. The explanation of the descriptive statistics results adopted the following scale: MV = 1–2.33 indicated low SCI or WVs; MV = 2.34–3.67 indicated medium SCI or WVs; and MV = 3.68–5.00 indicated high SCI or WVs. 3) one-sample t-test used to test the homogeneity of the response throughout the sample. To answer question 3 that assessed the effect of SCI practices on WVs, a simple regression test was conducted to test the study hypothesis, which answers the question of the third study; p values $\leq$ 0.05 were statistically significant.

5. Result and Analysis

The MV and SD were calculated and the results are shown in Tables 1–3. The first question was, "are the SCW at drugstores aware of the importance of SCI (II, SI, and CI)?"

Table 1 indicates that all SCWs have awareness regarding the importance of II (MV = 2.9) and all come at a

medium level. SCWs agree that II is necessary to achieve the goals instead of competing among themselves (MV = 2.54). It is clear that II improves contact among the workers (MV = 3.32). Moreover, II improves cooperation in decision-making (MV = 2.89). In addition, it appears that the implementation of II helps in information sharing and contact among workers (MV = 2.67). SCWs also encourage integration (MV = 3.10). All mean scores related to the importance of II among SCW were significant.

Table 1: Internal integration

≠	Within drugstore	MV	SD	Level	Sig.
5	Workers encouraged to work together to achieve goals instead of competing among themselves	2.54	1.2	m	0.00
6	Departments are in constant contact with one another	3.32	.92	m	0.00
7	Workers action together to make important decisions	2.89	1.3	m	0.00
8	Good communication and sharing information occurs among all workers	2.67	1.2	m	0.00
9	SCW encourages integration	3.10	1.1	m	0.00
Total		2.9	.68	m	0.00

Table 2 demonstrates the importance of integration with the supplier from the viewpoint of SCWs. It shows that the presence of SI enables better communication and cooperation with drugstores MV (2.78). Besides, SI does not help workers in drugstores involved in product design and production plans. However, results show that SI supports building long-term relationships with suppliers. The majority of SCWs indicate that SI supports the management of stock and the efficient scheduling of deliveries. In contrast, respondents agreed that SI played less of a role in sharing information related to product plan with suppliers and in reducing the cost of drugs. Table 2 shows that the MV was significant.

Table 2: Supplier integration

≠	Supplier and drugstore	MV	SD	Level	Sig.
10	Have good level of trust, communication, and cooperation	2.78	1.0	m	0.00
11	Drugstore is involved in product design and exchanges information on production plans	2.3	1.1	l	0.00
12	Working together to build a long-term relationship	3.1	1.2	m	0.00
13	Working together to manage stock and schedule deliveries	3.8	1.2	h	0.00
14	Working together to reduce costs	2.3	1.1	l	0.00
Total		2.9	.80	m	0.00

Table 3 deals with the role of CI in shaping relationships with customers, which was at a medium level (MV = 3.2). Contact with customers also came in at a medium level (MV = 3.4). It is clear that respondents agree that CI supports considering customer feedback (MV = 3.2) and helps respond to customer needs (MV = 2.5). In addition, respondents agreed that CI gave customers the opportunity to actively participate in product benefit (MV = 3.4). All of these create medium-level brand loyalty (MV = 3.2). MV related to the importance of CI among TMs were significant.

Table 3: Customer integration

≠	Customer integration led to	MV	SD	Level	Sig.
15	Close and permanent contact with customers	3.4	.97	m	0.00
16	Considering customer feedback	3.2	1.1	m	0.00
17	Responding well to customers' needs	2.5	1.1	m	0.00
18	Customers actively participating in product benefit	3.4	1.2	m	0.00
19	Developing brand loyalty	3.2	1.3	m	0.00
Total		3.2	.92	m	0.00

To answer the second question, "Are SCWs at the drugstores aware of the importance WVs?," MV and SD were calculated. A large percentage of the respondents mentioned that the presence of WVs at drugstores led to a fairly comfortable business environment (MV = 3.6). Further, drugstores will act on the atmosphere of friendship (MV = 3.1) and freedom (MV = 3.1). In addition, the presence of WVs helps maintain equality (MV = 3.6). Furthermore, drugstores should consider the importance of social recognition (MV = 3.4), which is considered very important in this type of sector.

Table 3: Workplace values

≠	Good workplace value led to	Mean	SD	Level	Sig.
20	comfortable life	3.6	1.2	m	0.00
21	true friendship	3.1	1.1	m	0.00
22	freedom	3.1	1.2	m	0.00
23	equality	3.6	1.3	m	0.00
24	social recognition	3.4	1.3	m	0.00
Total		3.3	.93	m	0.00

To answer the third question, "What is the effect of SCI practices in drugstores on WVs?," the hypothesis of the study was formulated as "There is no effect of SCI practices in drugstores on WVs." To test this hypothesis, a simple regression analysis was used, at $\alpha \leq 0.05$. The results are indicated in Table 4.

Table 4: Simple regression test results for measuring the effect of SCI on workplace values

R^2	F	Sig.	Beta	t	Sig.
.51	140.2	.000	.72	11.8	.000

These results show that the value of F equals 140.2, with statistical significance (α =.000), indicating that the application of SCI increases positive WVs, which rejects the hypothesis of the study, "There is an effect of SCI practices in drugstores on WVs." In other words, SCWs' awareness of DS has a positive effect on WVs. Moreover, R^2 equals .51 with statistical significance (α =.000), which indicates that SCI explains 51% of the variation in WVs.

6. Conclusions

Pharmaceutical goods are vital but are the most expensive items in the Jordanian health sector and further studies are needed to regulate their use and reduce their costs. SCI is one of the most effective management methods for regulating the consumption of resources. In contrast, the WVs of a working environment are effective philosophies for improving and regulating this environment. The results of the statistical analysis for the first aspect (awareness of SCWs regarding the importance of SCI) show that the SCWs in drugstores believe that II opportunities are accessible tools to achieve their goals, improve contact among workers, and are methods of decision-making in drugstores with a middling percentage. It is observed that in the majority of SCWs, SI helps regulate the flow of pharmaceutical goods in an efficient manner as well as improves trust and relationships to some extent. The above analysis clarified that SI did not reduce costs or increase participation in the design of pharmaceutical goods. This can be attributed to the fact that the Jordanian market is small and does not affect the large, international drug markets. The results also stated that there are strong effects of the SCI on WVs. The study witnessed a number of limitations including the sample contained only drugstores and limited to one geographical area, the capital of Jordan Amman.

7. Recommendations

SCW of drugstores are aware of the importance of SCI, which improves communication among workers and contact with and feedback from customers to understand the products they want, develops brand loyalty, and builds long-term relationships with suppliers. Drugstores should increase their interest in and awareness of the importance of SCI. Drugstores' SCWs should pay more attention to creating good WVs to develop a framework for continuous progress. The data from the study indicate that paying attention to SCI results in positive changes and the positive reinforcement of WVs. It seems that the Jordanian market needs to build alliances with other markets to increase the volume of exchange to be able to reduce the cost of treatments and to be able to design and identify the items that it needs.

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