

# THE NEXUS BETWEEN ORGANISATIONAL CAPABILITIES, ORGANISATIONAL READINESS AND REVERSE SUPPLY CHAIN ADOPTION

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**Keywords:** environmental factors, organisational readiness, Reverse Supply Chain.

**Abstract:** Successful Reverse Supply Chain Adoption (RSC) adoption requires a clear identification and understanding of Organizational Capabilities, assets, and resources internally and externally. Towards this end, this research assesses the nexus between organisational capabilities and RSC Adoption with a focus on the mediation role of organisational readiness. A survey method was used to achieve the research objectives. Different manager levels from the Jordanian industrial sector were selected by using a convenient sample technique. SMART PLS 3 was used to conduct Structural Equation Modelling (SEM). The outcomes represent a significant influence for internal organisational capabilities on the RSC adoption. As a mediation result, organisational readiness has a mediation role between internal organisational capabilities and the RSC adoption.

## 1 Introduction

Nowadays, business settings and environments are changing rapidly, which brings many challenges, forces, and pressures that are re-engineering and driving the scope and nature of organisations. Different types of organisations are struggling to keep up with these pressures and survive in a highly competitive environment. Modern society has been formed by a new environmental perspective and a high level of innovation. This is made possible by a great development in all fields of industry, service, technology, and concepts associated with globalisation and a significantly changing business setting. Among the results of these changes and developments, increased awareness about environmental issues, increased demand for green products and services, and increased interest in recycling operations [1]. Since the world is suffering progressively sturdy attention in environmental concerns and its influence on the worldwide society, the responsibility for businesses has to be focused on environmental issues during both directions of the supply chain: downstream and upstream.

Reverse Supply chain (RSC) refers to the movement of goods upstream, from the customer side (consumption point) to the organisation or supplier (origin point) to add extra value or suitably dispose of goods and as such has become popular among retailers and manufacturers given its potential to enhance customer experience and loyalty [2]. [3] pointed out that RSC is increasingly prominent since it has a significant benefit for all supply chain partners namely: reducing demand for new resources by providing more affordable materials; minimising transportation cost and production energy consumption, and reusing waste that would otherwise be lost in landfills.

[4] figure out that one of the most critical factors for achieving competitive advantage in today's business is to

focus on environmental issues and implement all possible tools to minimise waste and pollution. This level of RSC, however, does not occur by chance and rarely happens organically. Instead, RSC activities are frequently seen as a journey that requires a strategic roadmap and needs more and more investment across the organisation, good relationships with supply chain partners, and organisational readiness to adopt. Besides, building sturdy partnerships with supply chain partners such as suppliers, distributors, customers, community and government has become a critical factor for executing and sustaining the business activities in general [5].

Furthermore, there are an increasing number of scholars that are explored supply chain issues regarding environmental concerns and RSC such as supply chain sustainability [6]; green supply chain [7]; lean production [8]; Outsourcing [9]; Inventory design [10]; RSC adoption and organisational capabilities combination with organisational readiness has however scarcely received any attention in the academic literature. Specifically, organisational capabilities refer to all organisational resources, equipment, facilities, infrastructure, contracts, and relationships with all partners (3PL, 4PL, Government, Supplier, laws, labor unions, pressure groups). These might consequence in a company's incapability to identify, estimate, and understand the potential influence of the RSC on the level of variations and how a company's response to such pressures might be successful or not [11,12].

Nevertheless, there are several organisational capabilities externally and internally that require implementation and adopting RSC in all sectors usually and in the industrial companies in particular. More so, this research will investigate the interrelationship among organisational capabilities, organisational readiness, and RSC Adoption. In terms of structure, this study starts by

providing contextual literature regards to supply chain and RSC, followed by methodology section; findings analysis, and conclusion.

## 2 Literature review

### 2.1 Supply Chain Management

The common and initial definition of supply chain term is the flow of material through various companies which mainly start from the raw materials point and end to the customer point [13]. [14] pointed out that "logistics" and "SCM" terms are mentioned in the many scholars interchangeably despite logistics activities being a significant part of the supply chain. Supply chain can be defined as the process and network that is related directly to the production of goods and services and offer them to the customers based on their wants, need, and demands [15]. [16] stated that supply chain is mainly referred to the coordination between different activities: manufacturing, transportation, inventory, supplier relationship, and innovation combined with all supply chain partners. Mainly, the aim of supply chain management is to achieve effective use of different resources to minimise the processes costs and improve manufacturing quality while satisfying customers. [17] figure out that successful supply chain management is achieved by delivering the right products to the right customers at the right place, cost, and conditions.

As supply chain have derived to be more critical to society, customers, and more global, the more questions the community has had about the effect on the environment. Customers who care about environmental issues usually seek to minimise the negative impact of the industrial process on the environment. Accordingly, businesses, government, society, and pressure groups around the world are wondering about what is the best practices to minimise the negative effect and address this issue. This raised the need for a green process by conducting green initiatives. As companies have been encouraged to shape benefits in an efficiently tight market, they have progressively cantered around tactics to keep the expenses and cost regarding the production cycle under control. One method to accomplish those goals is to move from a typical manufacturing network to a green one. Green initiatives are aimed at saving and maintaining natural resources: power, water, animals, solar radiation which are the essential requirements of human survival.

Many scholars focus and call recently more research to save the global environment since the consumption level is increasing day by day and the dangers of hazardous materials and waste increased significantly [18-21]. Simply, green supply chain activities refer to working friendly with the environment and planning accordingly [22]. Recently, this topic has a focus from scholars in different contexts. This is a result of increasing awareness levels regarding environmental issues and increasing the pressure level on the companies to adopt such activities [23].

Furthermore, [24] concluded that the most significant supply chain activity that has a vital role in saving the environment and is mainly responsible for a significant decrease of the waste and pollution level is the reverse supply chain process. [23,25,26] stated that implementing this process will enhance the operational performance, decrease the total cost of production and increase the availability of resources. The following paragraph presents RSC in some more detail.

### 2.2 Reverse Supply Chain and organisational capabilities

The most common definition of Reverse Supply chain (RSC) is defined by [27] as "the process of planning, implementing, and controlling the efficient, cost-effective flow of raw materials, in-process inventory, finished goods, and related information from the point of consumption to the point of origin to recapture value or proper disposal". In contrast to the traditional logistics chain that begins at providing supplier raw materials to the producer and delivering it to the final usage stage by the end-customer, RSC involves the reverse movement that determines a closed-loop supply chain in combination with linear logistics [2]. The essential task in the RSC procedure is the product (waste) acquirement and that is a vital step for the establishment of a beneficial RSC. Recently, in the developed countries context, all businesses are working aggressively on the adoption of RSC in their activities due to the strict law and pressure associated with the proper disposal of waste, after the product life cycle is complete [28].

After reviewing numerous pieces of literature regarding RSC, it is determined that there is an immediate need to understand the RSC issues and fill the research gap by assessing the organisational capabilities from the industrial angle. Despite the potential benefits, it is not easy to implement and adopt the RSC as it requires a high level of preparedness in the various organisational components. [29] concluded that RSC required a high level of managerial awareness, clear rules and policies, financial resources, and strategic planning. [30] pointed out that the critical requirements that contribute to the successful adoption of RSC are the availability of financial support, infrastructure, high level of innovation, customer relationship management, and strong full coloration.

Regarding the organisational capabilities to adopt RSC, we can largely embrace the perspective offered by many scholars which categorise these barriers into internal capabilities such as infrastructure, organisation policy, strategic direction, employee qualifications, management commitment; and external capabilities such as government support, supplier integration, economical controls and customer orientation [31,32]. To overcome these challenges and to survive in RSC adoption, companies should draw a clear strong strategy throughout their experiences, efforts, and readiness to achieve successful RSC adoption.

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In sum, we consider that when an organisation has a certain capability associated with different resources internally and externally it is further expected that it will pursue to enhance its readiness to adopt RSC. This assumption partially agreed with [33], who pointed out that companies should understand and maximise their capabilities to successfully adopt RSC. By investigating RSC adoption, the study refers to certain related factors that can shape the influential impact of organisational capabilities internally and externally. The logical basis of the proposed relationship between many factors associated with business readiness and RSC adoption can be justified based on the increasing awareness of environmental issues within all societies. Accordingly, the following hypotheses are generated:

- **H1:** Internal organisational capabilities have a significant statistical impact on the Organizational Readiness for the Reverse Supply Chain Adoption within the context of the Jordanian food industry.
- **H2:** External organisational capabilities have a significant statistical impact on the Organizational Readiness for the Reverse Supply Chain Adoption within the context of the Jordanian food industry.
- **H3:** Organisational readiness mediate the relationship between internal organisational capabilities and reverse supply chain adoption within the context of Jordanian industry.
- **H4:** Organisational readiness mediate the relationship between external organisational capabilities and reverse supply chain adoption within the context of the Jordanian industry.

Research Conceptual Model (Figure 1).

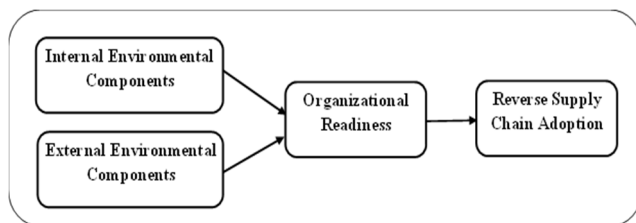


Figure 1 Research Model

**3 Research methodology**

The quantitative technique was mainly used in this research as the entitative technique allowed the researcher to emphasise numeric data and provide a well-grounded data source to improve understanding of the research topic. A convenient sampling approach was applied. The population of interest includes different managers at different managerial levels in the Jordanian industrial context. This is chosen according to the significant role of this sector in the adoption of RSC and the industrial sector mainly is the main stage of the RSC process. 350 questionnaires were collected from the target population.

Table1 below summarises the demographic characteristics of the study sample.

Table 1: Sample Characteristics

Personal Information	Frequency	Percentage %	
Gender	male	206	58.9
	female	144	41.1
Age	less than 30	171	48.9
	31-40	111	31.7
	41-50	60	17.1
	more than 50	8	2.3
Experience	less than 5 years	165	47.1
	5-10 years	141	40.3
	More than 10 years	44	12.6
Total	350	100%	

The survey was drawn based on five Likert scales. Smart PLS 3 software was used to conduct Structural Equation Modelling (SEM) following the recommendations of [34,35]. Following the recommendations of [36], the model was assessed using 5000 bootstraps re-samples method and the following subsection presents the results.

**4 Results**

Validity and reliability analysis for research instrument. In line with [37,38], these analyses were measured by conducting Cronbach's Alpha; composite reliability (CR); Average Variance Extracted (AVE). Accordingly, all indices reveal the good reliability and validity of the constructs and exceed the cut-off values (CR>0.60; Alpha>0.60; AVE>0.50). Table (2) represents these findings.

Table 2: Scale validity and reliability

Constructs	Alpha Cronbach's	Composite Reliability (CR)	AVE
External Organizational Capabilities	0.845	0.878	0.521
Internal Organizational Capabilities	0.889	0.911	0.562
Organizational Readiness	0.883	0.915	0.684
Reverse Supply Chain Adoption	0.865	0.897	0.533

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Besides, correlations by conducting Pearson bivariate test for all all-research variables, and the findings reveal that no multicollinearity concerns amid the research constructs and table 3 represents these findings.

The SEM (Figure 2) was assessed by checking path coefficients and the R<sup>2</sup> values. More so, both direct and indirect effects were evaluated to ensure that the mediation effect was checked following the [39] recommendations (Table 4).

Table 3: Correlation matrix

Constructs	EOC	IOC	OR	RSCA
External Organizational Capabilities	0.669			
Internal Organizational Capabilities	0.596	0.750		
Organizational Readiness	0.314	0.554	0.827	
Reverse Supply Chain Adoption	0.472	0.574	0.549	0.730

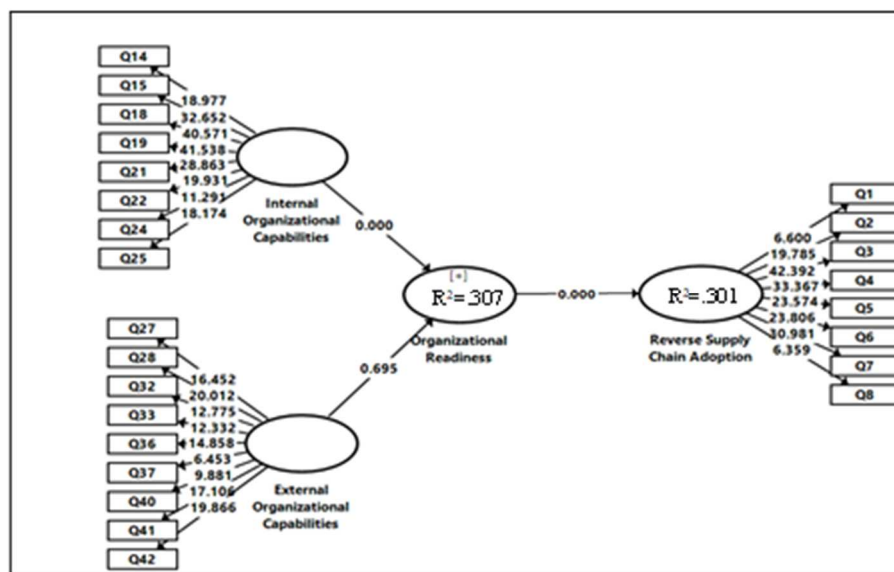


Figure 1 Research Model

Table 4: Path analysis

IV	DV	β	S.E	t - value	P value
Internal Organizational Capabilities	Organizational Readiness	0.568	0.053	10.630	0.000
External Organizational Capabilities	Organizational Readiness	0.025	0.063	0.390	0.697

Table 5: Indirect Effect

Variables	β	S.E	t - value	Confidence Level LO - UP	P
Internal Organizational Capabilities >- Organizational Readiness >- Reverse Supply Chain Adoption	0.312	0.044	7.167	(0.226 - 0.398)	0.000
External Organizational Capabilities >- Organizational Readiness >- Reverse Supply Chain Adoption	0.013	0.035	0.384	(-0.056 - 0.082)	0.701

As represented in figure 2, the values of R<sup>2</sup> of the research variable organisational readiness and RSC adoption were 0.307; 0.301 respectively which advocate that the model provides a proper explanation, and its predictive power is meaningful. Furthermore, the H1 predicted that internal organisational capabilities are positively and directly associated with the organisational

readiness for the RSC Adoption. This hypothesis is accepted as the path between these constructs is supported and significant at  $p < 0.01$ ; and  $(\beta = 0.312; t = 10.630)$ . The second hypothesis supposes that external organisational capabilities is positively and directly associated with the organisational readiness for the RSC Adoption. This hypothesis however is rejected as the path between these

constructs is non-significant ( $p = 0.697$ ;  $\beta = 0.025$ ;  $t = 0.390$ ). The results of the specific indirect effects (mediation path) that shown in table 5 represented that Interestingly, organisational readiness mediates the relationship between internal Organisational capabilities and RSC adoption. Moreover, H5 predicted that organisational readiness mediates the relationship between external organisational capabilities and RSC adoption. This prediction is not supported as ( $p = 0.701$ ).

## 5 Conclusion and discussion

This research set out to investigate a conceptual model on the mechanism through which the perceived organisational capabilities on the RSC adoption are associated with organisational readiness in the Jordanian industrial sector. To the best of our knowledge, it is the first research to investigate such a mechanism. The findings confirm the relevance of the research hypotheses and the literature that guided their formulation. Theoretically, this paper has sought to enhance the nuanced understanding of the RSC adoption and the significant organisational capabilities that require to successfully adopt RSC. The research results shed light on both the theory and practice of RSC adoption. RSC plays a significant and vital role and highlights the combination of organisational capabilities internally and externally allowing a strategic role. The RSC has been touted as a 'magic' for decreasing manufacturing cost, increasing availability of materials, increasing flexibility in an economy [28], especially during an uncertain situation. Successful adoption of RSC requires actual consideration of the organisational capabilities including strategic planning, infrastructure, high collaboration level, customer relationship management.

Regarding the role of organisational readiness, from the above arguments, we can state that the availability of these capabilities, especially the internal capabilities. All businesses that are considering the RSC adoption must promote supportive facilities to enhance their readiness level to adopt. Because of that, this research is considered the mediation role of organisational readiness as a prerequisite for successful adoption of RSC.

The RSC is an effective way to save the environment which reducing the pollution rate and transferring the waste and unused materials into valuable resources. Hence, it is crucial to promote the RSC due to the numerous benefits it offers. Upon reckoning the significance of RSC in promoting continuous awareness during the supply chain network, this study had looked into the key organisational capabilities that are required to adopt RSC associated with organisational readiness and the stance of managers and their intention towards RSC adoption. Supply chain managers should distinguish the significant role of the level of readiness in RSC and different organisational capabilities as a key requirement that can improve the organisational experience in RSC and in turn enhance efficiency and competitiveness. Due to the speedy and extreme awareness regarding environmental issues, the

extended nature of RSC from local to regional to global alternatives is calling for more concern from supply chain managers. As a practical implication, the outcome of this research may support decision-makers and supply chain managers in the Jordanian industrial sector to develop, adopt a responsive RSC. All efforts ought also to be associated with the development of reliable organisational capabilities to ensure a successful RSC adoption. Future research might adopt a more holistic view by combining organisational strategy, supply chain relationship, and supply chain agility that could shape the future adoption of RSC.

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**Review process**

Single-blind peer review process.