

Presenting a model to determine and prioritize factors affecting the organization's success in managing green supply chain

Mahdi Ahangari

Master of Industrial Engineering, School of Industrial Technologies, Urmia
University of Technology, Urmia, Iran

mahdiahangry@gmail.com

Abstract

Today, one of the environmental preservation tools is the green supply chain management, along with increased corporate performance. In this regard, the purpose of this research is to identify the main indicators of green supply chain management and prioritize the factors affecting the green supply chain in organizations. The main issue of this research is identifying the main indicators of green supply chain management and providing a model in this direction and ultimately selecting the best supplier from the viewpoint of environmental considerations. This research has been conducted in two different phases; firstly, the executive activities of achieving the green supply chain management and the barriers to achieving green supply chain management have been expressed, then in the second stage, green supply chain indicators By studying the scientific literature and opinion of the experts of the industry (24 indicators) and the basis of the preparation of the questionnaire. After collecting data and factor analysis, a three factor model (including 16 components of external stimulus management, internal stimuli, and operational activities of green supply chain management) has been developed to measure green supply chain management. In this research, three hypotheses were suggested. According to the results of this study, the hypothesis of the effect of internal stimuli of green supply chain management on operational activities of green supply chain management was not confirmed, while the effect of external stimuli on internal stimuli and the effect of external stimuli on The Green Supply Chain Management operational activities have been verified, which means that external stimuli may be required to positively affect the internal drivers towards the operational activities of the green supply chain management and companies are required to remain in the competition arena. To carry out these activities.

Keywords

Supply Chain Management, Green Supply Chain, External Drives, Internal Drivers, Operational Activities.

Introduction

Economic activities, including industrial, agricultural and service activities, on the one hand, use natural resources and depend on them, and on the other hand, the nature of their processes in such a way that they potentially pollute the environment. Therefore, if these activities are not addressed to the environmental implications, then there should be huge costs for the loss and damage caused by the lack of attention to this issue. Increasing the costs of environmental damage, increasing the knowledge and awareness of companies about the adverse effects of economic activities on natural resources and, consequently, the deterioration of quality of life, has led companies to adopt strategies for growth and To review their economic development.

Increasing concerns about environmental warnings forced manufacturers to try to apply environmental management solutions. Approaches such as green supply chain management, green productivity, cleaner production and environmental management systems are used for green management activities. Meanwhile, since adverse environmental effects occur at all stages of the product's life cycle and the management of environmental programs and operations is not limited to the boundaries of the organization, the view of green supply chain management as a comprehensive view that all flows from suppliers To the producers, and ultimately to the consumers, has attracted a lot of attention.

In the traditional and past view, supply chain management involves directing all supply chain segments in an integrated manner in order to improve performance in order to increase productivity and profit, and supply chain managers are looking for faster delivery of goods and services, reduction Cost and quality improvement, but the improvement of the environmental performance of the supply chain and the importance of social costs and environmental degradation were not included. By pushing government regulations to meet environmental standards, on the one hand, and the growing demand for customers to supply green products (without harming the environment), sustained the concept of the green supply chain and its management. Today, Green Supply Chain Managers in leading companies are struggling to create green desirability and satisfaction across the supply chain to enhance green logistics and improve their environmental performance throughout the supply chain as a strategic weapon for sustainable competitive advantage. Brand Profits (Book and stools 2007).

Meanwhile, external and internal stimuli, "green supply chain management" and operational activities of green supply chain management are among the factors that can be effective in managing green supply chain management.

Today, the guarantee of sustainable development in each country depends on the conservation and optimal use of limited and inalienable resources in that country, and various measures have been taken by governments to deal with this issue, including the application of green laws and principles, such as the use of materials Eco-friendly raw materials in industrial and industrial centers, reducing the use of fossil fuels and oil resources, recycling paper and recycling waste in companies and public-private organizations. Accelerating government regulations to meet environmental standards and growing consumer demand for supply of green products to the supply chain that covers all activities related to the flow of goods from the raw material stage to the delivery of the goods to final consumers, including the flow of information across the chain. Encompasses the concept of a new green supply chain management, or "GSCM," which embraces the product life cycle from design to recycling.

2. Subject literature

2.1 Supply Chain Management

The supply chain management coordinates all activities in the supply chain. The term supply chain management was first used by two researchers, Oliver and Weber, in 1982, and then used extensively in the 1990s. Instead of using the term "logistics" and "operation management". According to Oliver and Weber, the logistics chain is a major issue at the top management level of the organization (Stiller & Kilger, 2006)

The Supply Chain Management Professional Supply Chain Management Branch defined supply chain management as follows: Supply chain management involves planning and managing all logistics and procurement activities, converting commodities from the raw material stage (extraction) to Delivery to final consumer, logistics activities and all coordination and cooperation activities between suppliers, brokers, retailers and customers.

Some other definitions of supply chain management include: supply chain management integrates supply chain activities as well as related information flows by improving chain relationships to achieve competitive advantage. Therefore, supply chain management is the process of integrating supply chain activities and related information flows by improving and coordinating activities in the supply chain of supply and supply. (Stigler and Kilger, 2006).

The other definition of supply chain management is as follows: the coordination of production activities, inventory, positioning and transportation among supply chain activists with the goal of achieving more efficiency and meeting the expectations of customers. (Hugos, 2006)

2.2 Green Supply Chain Management

Supply Chain Management Green with the challenges of economic, social and environmental in the last decade the organization threatens the approach to customer orientation and focus on the demands of the design strategy based on (creating satisfied customers) capability Has lost itself to creating competitive advantage in organizations. If in the past two decades consumerism has been the cornerstone of the organization's competitive advantage, today, because of the challenges posed by consumerism, organizations are distracting from this focus. The customer always wanted the best product, the cheapest and fastest. This approach contributes to environmental pollution and the production of products and processes that are not environmentally compatible. In this regard, organizations have found their survival in accountability in three areas: economic, social, and environmental. Supply Chain Management Green, the integration of the supply chain management with environmental requirements at all stages of product design, selection of raw material supply, production, processing, distribution and transmission, delivery and finally consumption, waste management and Re-use in order to maximize the level of consumption efficiency in the study of energy and resources along with improving the performance of the entire supply chain. (Sarkis, 2006)

Environmental impacts of supply chain activities to analyze the impact of products on the environment through a comprehensive approach (including analysis of the life cycle of the product from the beginning to the end of its life). In this approach all ecological effects (science of habit and way of life of the beings and their interaction with the environment) of each activity in different stages of product life, such as product concept, design, raw material preparation, manufacturing and manufacturing, assembling, maintenance, packaging Transport, reuse, and

reuse of the product are measured and considered in product design. (Farahani, Asgari, & Davarzani, 2009)

Srivastava (2007) supply chain Green Thus, taking into account environmental issues in supply chain management include "product design, selection and sourcing of materials, manufacturing process, delivering the final product to the customer and product management after taking Sustainable supply chain management involves economic dimensions and social and environmental sustainability. Therefore, the concept of sustainable supply chain management is broader than green supply chain management, and green supply chain management is part of the sustainable supply chain management. (Farahani et al, 2009)

2-3 Organizational Stimulus to Accept Green Supply Chain Management

The incentives for the organization to move towards the green supply chain are different from the point of view of the ultimate customer, government agencies, private organizations, and regulatory bodies. The main driver of the laws and regulations that dictate environmental issues to organizations. On the other hand, some organizations implement these rules in order to increase the profitability or incentives for managing customer requests (Zhu & Sarkis, 2006)

The green supply chain is divided into two categories of internal and external stimuli. Among the external stimuli that make it green, they are (Armstrong and Cutler, 2006) and (Polonsky & Rosenberger, 2001).

- meeting consumers demand and act towards social responsibility;
- Response to rival actions and the adoption of green and environmental strategies aimed at maintaining and expanding market share;
- Provisions and international and state laws requiring organizations to implement Green Supply Chain Management;
- Increasing environmental pollution;
- Environmental Activities of NGOs. Among the inner triggers are the following:

Reduce the cost of reducing energy and raw materials input;

To consider environmental goals in the mission of the organization;

Create a sustainable competitive advantage in the organization.

Executing activities to achieve the green supply chain management of industries and organizations to achieve Green Supply Chain Management perform various activities. The executive activities are grouped into two broad categories of internal and external executive actions for achieving the Green Supply Chain Management, and are grouped into 12 categories as described in Table 1.

2.4 obstacles, Benefits and Outcomes of Green Supply Chain Management

Some benefits from using the green supply chain include:

- Increasing efficiency, improving productivity, creating new markets, reducing costs, reducing emissions, improving the public's profile, increasing commitment and social responsibility of the organization. (Rao, 2002)

- Improving energy consumption, reducing waste, reducing costs, maintaining natural resources, improving the quality of life, building and maintaining a better environment for future generations. The main obstacles to achieving the green supply chain management referred to in the articles are the Have been described in Table 2.

Table (1): Implementation Activities for Achieving Green Supply Chain Management

Arif, Egbu, Haleem, Kulonda, & Khalfan, 2009; Bowen; (Beetle, 2005)

Cousins, Lamming, & Faruk, 2002; Holt & Ghobadian, 2009;

<http://www.ikco.com>; <http://www.toyota.co>; Rao & Holt, 2005; Rao, 2002;

(Sarkis, 2006; Zhu & Sarkis, 2006; Zhu, Sarkis & Lai, 2008)

Operational activities
1. Environmental management of the organization: • The commitment and support of top management of the organization to the implementation of green supply chain management By the organization • Obtain environmental management certificates such as ISO14000, EMS • Policy and practice in the field of environment and social responsibility in the organization • Planned coding to create green and sustainable marketing
2. Design for the environment: • Design of products and processes aimed at reducing the consumption of raw materials and energy • Designing products and processes for reuse, rebuilding and reuse
3. Improving environmental performance in the production process area: • Planning to reduce and eliminate the use of harmful elements of nature in the production process of parts (lead, chromium, mercury, cum) • Coded planning to reduce soil pollution, weather, and domestic processes • Use of timely delivery system, inventory control and minimize additional ordering • Use of reverse logistics system (collecting, transporting, disassembling, recycling and reuse of raw materials and reusable parts and waste disposal) • Replacing raw materials with nature-friendly raw materials
4. Non-Manufacturing Resource Management: • Managing and controlling the harmful effects of the organization's facilities on the community and employees of the organization (including environmental, health and safety issues) • Implementation of the network and the central treatment plant for industrial and sanitary waste • Measuring annual water consumption and planning to reduce consumption
5. Management and optimization of energy consumption:

• The use of renewable energy in the production process (such as wind turbine and solar energy) • Optimization of energy consumption through monitoring in ceilings for lighting the work environment, local illumination and switching off the devices during rest periods • The use of new and eco-friendly technologies (to prevent the introduction of pollutants into the environment and to optimize the consumption of energy and energy)
6. Waste management: • Coded Planning to reduce soil pollution, weather, and waste • Implementation of the waste management system (management of production, collection, storage, separation, transportation, recycling and disposal of waste)
7. Education and Research and Culture Development: • Activities in international and domestic environmental and environmental research associations with universities and scientific centers. • Organizing a training seminar on the importance and compliance of environmental issues for employees, customers and suppliers. • Promoting the culture of reducing paper consumption in various activities of the organization using the office automation system and the preparation of software used in the network..
8. Environmental management of the organization: • Obtaining ISO 14000 certificate by suppliers • Choice of suppliers based on environmental criteria and supplier performance assessment based on environmental criteria. • Presence of environmental guidelines in the procurement department for the purchase of raw materials and environmentally friendly components • Planting seedlings, trees and helping to develop green spaces
9. Environmental partnerships with stakeholders: • Get feedback and collaborate with customers and suppliers for clean production • Get feedback and work with customers and suppliers to reduce energy consumption
10 Improving environmental performance in the product area: • Coded planning to reduce soil and climate pollution by the final product • Use of environmental standards label on parts • Planning to increase the production and sales of clean cars (hybrid, dual-electric and electric)
11 Improving environmental performance in sales and after sales services: • Adjust free engine products • Implementing the replacement plan for worn out vehicles • Modernization and development of the taxi fleet
12 Increased vehicle safety and improved car engine performance: • Planning to achieve Euro 3 emission standards in cars • Planned coding to enhance the safety of vehicles (in line with the social responsibility of the organization)

Table (2): The Barriers to Access to Green Supply Chain Management
 Arif et al., 2009; Farahani et al., 2009; Polonsky & Rosenberger, 2001;)
 (Rao, 2002; Zhu & Sarkis, 2006)

The Barriers to Green Supply Chain Management
Absence of an active and voluntary approach of the organization and suppliers regarding compliance with environmental standards and social responsibility
The inability of suppliers (in terms of knowledge and technology) to obtain ISO 14000 standard
The lack of tangible competitive advantage stemming from the implementation of the green supply chain
The difficulty of organizing and coordinating units in the implementation of the green supply chain
The lack of sufficient incentives and incentives for the government to achieve green supply chain management
The high cost of implementing the green supply chain
Lack of legal levers to enforce environmental laws
The lack of appropriate information and communication infrastructure to facilitate the implementation of the green supply chain
Lack of knowledge and education on environmental issues
Lack of support for top and middle management of the organization
Absence and competition in global markets
The lack of goals and strategic environmental plans in the organization
Lack of legal levers to enforce environmental laws
The additional cost needed to implement the green supply chain

2-5 Review previous research

The concept of the green supply chain was first introduced by Kell and Silver in 1989.

Some of the work done in this area is as follows:

In the article, Air coupled the concept of "Supply Chain Management" and "Green Productivity".

He believes that the integration of environmental considerations and supply chain management provides an opportunity for the supply chain to help organizations improve their productivity, quality and environmental performance through continuous information flow.

Huang raised the green purchase debate, in the process of production and supply of products, large amounts of raw materials, administrative supplies, and so on. In order for companies to produce green products, they must use materials and products that are consistent with environmental standards. Therefore, organizations must consider environmental issues in negotiations with their suppliers (in order to maintain market share or, sometimes, only survival). Some of the reasons why green purchasing companies are responding to consumers' interest in eco-friendly products is to distinguish between products from companies and

competitors, and cost savings. Most companies consider the principles for greater environmental compatibility, some of which are: the preparation of a list of chemicals that should not be used, the provision of a list of acceptable products, close cooperation with suppliers to increase environmental performance and taking into account multiple environmental features when making purchases decisions.

Rao believes companies should set up teams to review and select suppliers. Such an action will ensure:

- Compatibility of the company's products or services with the environment;
- Avoid contamination in the source;
- Reuse of materials;
- Increased recycling volumes in production;
- Optimizing processes in such a way as to minimize the harmful or unnecessary waste;
- Redesign products in ways that minimize their adverse environmental effects.

Of course, Zhou and his colleagues believe there are barriers and pressures on the peripheral issues to choose suppliers. Some of these pressures are state environmental regulations, the environmental responsibility of the company's purchase, the potential responsibility for the disposal of hazardous materials and the cost of disposal of hazardous materials.

Kochibo believes that it is not enough for producers to produce and supply green products to markets. They also need consumers who want green products. In other words, green companies need green markets.

According to Yu, consumers have become aware that their purchases are affecting the environment, and they are urged not only to pay attention to the quality of the goods, but also to consider the conditions under which the goods are produced. Green consumption first began in Europe and peaked in the 1980s, and it was more intense in Germany. Consumers have been supporting producers who are responsible for environmental issues. As a result, green consumerism has made it a competitive advantage for producers to recognize. Green consumerism also emphasizes that producers must ensure their product compatibility with environmental standards.

Table (3): Related Research

definitions	Researcher and year of research
Green supply, Southeast Asia, various parts of manufacturing plants	Rao (2002)
Relationship between operational and operational activities, China, manufacturing companies	Zhou and Sarkis (2004)
Green Supply Chain Management Pressures, Operational and Performance Activities, China, Manufacturing Companies	Zhou et al (2005)
The Role of Implementation of Green Supply Chain Operational Activities on Organization Performance, Taiwan, and Electric Companies	China and Shia (2007)

The impact of external factors (rules, customers, competitors, etc.) and the impact of internal factors (senior management support and company learning ability) on operating activities of Green Supply Chain Management, China, manufacturing companies	Liu et al. (2010)
The Role of Implementing Green Supply Chain Operations and Social Responsibility Participation in organizational performance, butter, electric and electronic partnerships	Sink Taye Kim (2010)
Implementation of Green Supply Chain Management Operational Activities, Performance Improvement and Drivers of Green Supply Chain Management, Japan, Big factories	Zhou et al. (2010)
Main factors (suppliers, environmental laws, senior management support, staffing, etc.) to implement operational activities of the green supply chain management. Taiwan, electrical and electronic industries	Ho and Hesu (2010)
The Impact of Senior Management Support on Operational Activities of Green Supply Chain Management, Korea, Manufacturing Companies	Yuan et al. (2011)
Impact of environmental laws on operational activities of Green Supply Chain Management, Greece, companies located in the Thessaloniki industrial zone	tsirme et al (2012)
Impact of trust and management support on green supply chain management, UK, markets from firms to firms and markets from firm to customer.	Hymouss et al. (2012)

3. The research metrology

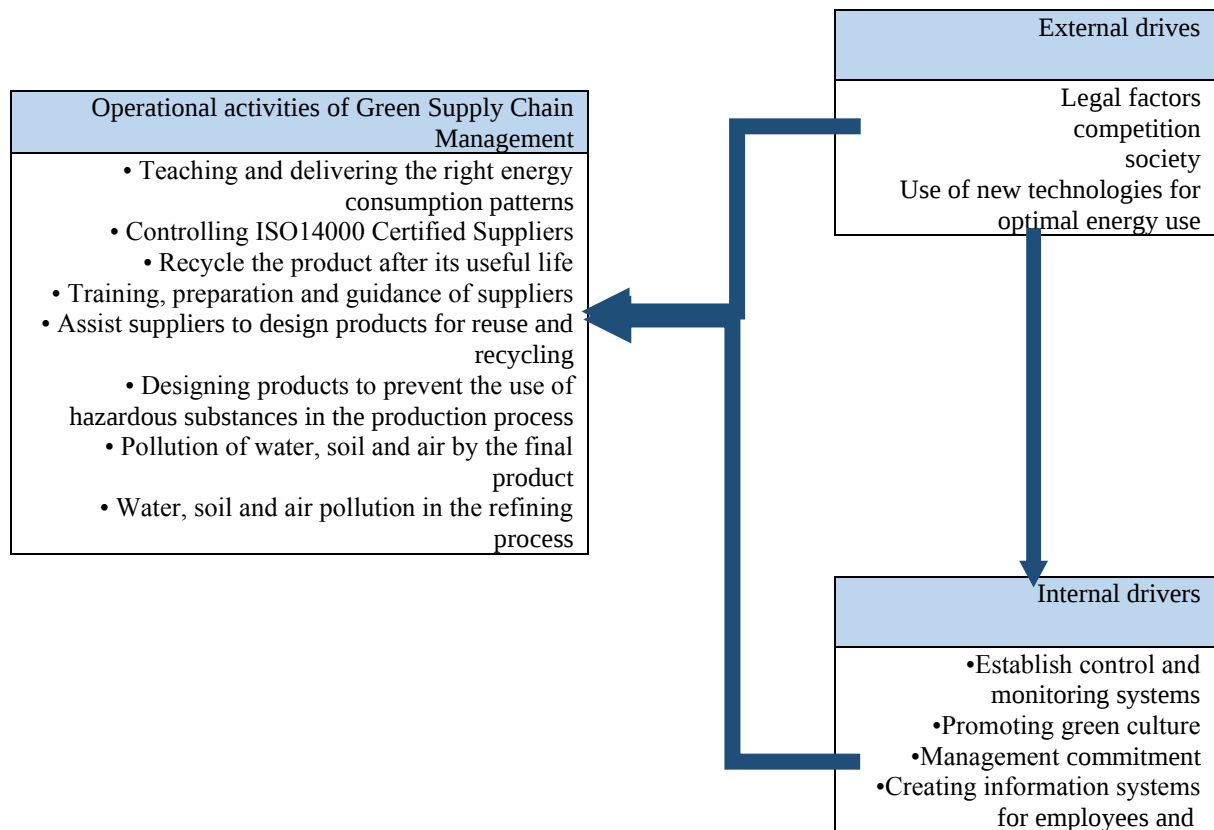
3.1 Research Hypotheses

Hypothesis 1: External stimuli of the green supply chain are effective on the internal stimulus of the green supply chain.

Hypothesis 2: External stimuli of the green supply chain are effective on the operational activities of the green supply chain management.

Hypothesis 3: The internal stimulus of the green supply chain is effective on the operational activities of the green supply chain management.

Figure (1): Conceptual Model of Research



3.2 Research Method

This research is applied in terms of its purpose and in terms of its method, a descriptive survey is a survey type. According to the available information, the number of employees of the Parthian Manufacturing Company in 1396 is about 96 people. The statistical population of this research includes 36 employees of the party industry. The simple random sampling method has the highest level of generalizability among different methods. It has a sampling and therefore adds to research. Usually, 32 to 3 percent of the population is selected as a prototype, with about 36 people selected here. According to the random sampling method and according to the standard deviation obtained for the prototype, the value was 2786. , By the Cochran formula, the sample size was obtained in 16 companies. Below is a sampling formula:

Formula (1): Cochran formula and sample size determination

$$n = \frac{z^2 pq}{d^2} \left(1 + \frac{1}{N} \left(\frac{z^2 pq}{d^2} - 1 \right) \right)$$

Cochran formula information:

n: sample size;

N: population size (population, city, province, etc.);

Z: Normal value of standard unit;

p: Relation of a certain attribute population;

q = (1-p): proportion of population without specific attribute;

d: The value of the mistake or error rate;

Z: The normal value of the standard unit, which is 96% at 95% confidence;

d: Allowed error value is usually 0.01 or 0.05;

P: The value of p and q, which, if not available, can be considered as 0.5, and then the variance reaches its maximum value.

In this research, a questionnaire was used to collect data. The present questionnaire is a standard questionnaire whose questions have been used in external research and has been used after adaptation of Hellat and Karzadian (2008) and making the necessary corrections to assess the hypotheses of this research. Also, this questionnaire was used in the study of Winsters and Tons (2009), also. The repeated use of this questionnaire in previous studies has been one of the reasons for verifying the content of the measurement tool. The questionnaire consists of several sections that are presented in the elementary part, general questions and in the second part of the questions related to the model's hypothesis assessment, which consists of two parts, the first part consists of twenty questions related to external and internal stimuli of supply chain management. Green and the second part contains 23 questions related to operational activities of green supply chain management. In this research, the factors affecting green supply chain management, ie external and internal stimuli of green supply chain management, are determined using Friedman test to identify the high-risk factors, and then the average rank score for unique structures to verify we also show the internal and external drivers of green supply chain management. The Friedman test can be ranked using SPSS software. The factors of factor load in each of the questionnaire questions are as shown in Table (3) and indicate the level of validity of the questions of this research.

Table (3): Confirmatory Factor Analysis

Load Factor	Standard deviation	Average	Obvious variables	Hidden Variables
0.882	0.54	2.48	Legal factors	External stimuli
0.665	0.68	2.47	Competition	
0.771	0.5	3.1	society	
0.567	0.45	2.61	Use of new technologies for optimal energy use	

0.328	0.64	3.14	Establish control and monitoring systems	Internal stimuli
0.817	0.99	2.61	Promoting Green Culture	
0.842	0.94	1.97	Management commitment	
0.315	0.84	3.1	Creating information systems for employees and employees	
0.376	0.24	1.53	Teaching and delivering the right energy consumption patterns	Chain Management Operational Activities Green supply
0.375	0.43	1.61	Controlling ISO 14000 Certified Suppliers	
0.351	0.28	1.41	Recycle the product after its useful life	
0.565	0.22	1.64	Training, Preparation and Guidance of Suppliers	
0.678	0.34	1.35	Assist suppliers to design products for reuse and recycling	
0.717	0.92	1.69	Design of products to prevent the use of hazardous materials in the production process	
0.325	0.25	1.54	Pollution of water, soil and air by the final product	
0.395	0.33	1.57	Pollution of water, soil and air in the process of refining	

The present study has the lowest value of these coefficients. Considering the minimum amount set, all questions of the questionnaire have got the desired amount and therefore the measurement tool has a functional validity.

SPSS and PLS software were used to analyze the data. PLS has been used as a variance-axis path modeling technique that allows simultaneous testing of the theory and measurement tools. This software is not susceptible to normal assumptions, therefore, it does not have to do with normal multivariate data (Akas and Ngo, 2007).

This software uses partial least squares method to present the models of structural equations and the main component of structural equations, that is, the path analysis that has been used here. To test the model of this research, data analysis was used by path analysis. The path analysis, at its best, through its main feature, the path diagram, shows the potential causal links between the variables and consists of three main stages: the first stage of hypothesis formation; the second stage involves selecting or compiling dimensions for the variables (structure Theoretical), and the third step in the path analysis based on multiple regression is to compute the statistics that show the strength of the relationship between each variable pair, where for each pair of variables in the path analysis, the path coefficient of the standardized coefficients A regression, which is a number between 3 and 3, is obtained that the higher the value, the relationship between the two variables Is stronger. Gal and et al. (2007), for the purpose of evaluating convergent validity, the mean AVE extracted variance for each scale was calculated. The results show that for all scales, the AVE value is greater than 5 /. As a template.

(Fornel and Larker, 1981). So the results support convergent validity. Separation validity was tested by comparing AVE with intra-factor correlation squared. Separation validity was

confirmed in all cases. Reliability analysis, Cronbach's alpha coefficient for the overall model is 0.81. It recognizes that this value improves the reliability of the scale and the internal consistency of the items. Meanwhile, the partial reliability values for the external stimuli variable ($\alpha = 867$) and internal stimuli (ALFBA = 729 /) and operational activities (ALFBA = 798 /.) Also indicate an adequate level of internal coordination.

4. Project Findings

By analyzing the data from the questionnaire, the following findings are presented below:

4.1 Sample Demographic Features

The majority of the age group of sample managers surveyed are between the ages of 36 and 40, and most respondents are over 15 years old and have graduate degrees, which can indicate the importance of working experience in managing the production units concerned.

2. Determining the correlation between existing relationships between hidden variables

Statistical techniques used in any research. It is necessary to research and to prove or disprove research hypotheses. Since all of the research hypotheses are similar, and because the variables are of a qualitative rank, Kendall's correlation coefficient is used to test the correlation between the variables of the research, the results of which are given in Table (4)

Table 4: Correlation between variables using Tao Kendall method

Sample size	Tao Kendal	Significance level	Relations between variables
36	0.75	0.014	External stimuli and internal stimuli
36	0.48	0.043	External stimuli and operational activities
36	0.53	0.038	Internal stimuli and operational activities

Coefficient of correlation between external and internal stimuli of green supply chain management. And since the significance level (0.014) is less than the percentage error (0.05), it suggests a correlation between the two variables. The correlation coefficient between external stimuli and operational activities of green supply chain management is 0.48 and since the significance level is obtained, 43.4. ; Therefore, there is a significant relationship between the two variables. Also the results of the research it confirms the significant relationship between internal stimuli and operational activities of green supply chain management, and the correlation coefficient between them is 53 /. is. Since the significance level is obtained (0.038), there is a correlation between the two variables. The evaluation of the structural model of the research with regard to the severity of the path coefficients and the determined variance (R²) is related to the dependent variables of the test.

Fall and Miller (1992) state that the variance determined to be sufficient must be greater than or equal to 1 /. And lower values refer to the lower prediction level of the hidden dependent variable, and if the variable does not reach the minimum desired value, this variable is required

for other factors not included in this study. According to Table 5, both dependent variables have the minimum required value.

Table (5): Dependent variance of dependent variables

R²	Structures
0.567	Internal stimulus for green supply chain
0.352	Green Supply Chain Operations

In Table (6), the paths related to research hypotheses are determined by examining the values of path coefficients and t-statistic values for predicting predicted paths significance. This value has been investigated for the first hypothesis and the second hypothesis with the coefficients of a given path and represents the significance of the path coefficient of the first and second hypotheses. Accordingly, the first and second hypotheses are confirmed. The value of t-value for the third hypothesis with the path coefficient (standard regression coefficient) was 0.019- less than the desired threshold; therefore, the results of the third hypothesis, so the effect of the internal stimuli on the operational activities of the green supply chain, are supported.

Table (6): Hypothesis path coefficient

theories	Measurement of statistics)t-statistic(	routes coefficients	routes
Hypothesis 1: Confirmed	7.16	0.605	External stimuli on internal stimuli
Hypothesis 2: Confirmed	2.29	0.45	External stimuli on operational activities
Hypothesis 3: Confirmed	0.06	-0.19	Internal stimuli on operational activities

Table 7 shows the average rank score for unique structures for checking the internal and external stimuli of green supply chain management. The highest pressure score is for competition, after which the legal factors, the community, the stimuli, and the internal ones are also the supply chain.

Table (7): Friedman Ranking Scores

Rate	Components	Operational variables
11.21	The importance of current laws	Legal factors
7.36	The importance of the laws in the wake of approval	

9.29	The Importance of Future Likely Laws	
9.28		Average
13.39	Reducing the risk associated with the goods, services or operating procedures of the company	Internal drivers
10.15	The Importance of Organizational Culture in Promoting Responsibility	
6.28	The Importance of Executive Management Engagement in Promoting Green Culture	
12.88	Importance of pressure from the staff	
10.67		Average
8.90	Creating a better company performance than competitors or similar institutions	Competition
9.29	Creating new opportunities in the competitive market	
8.74	Increase the ability to face rivals	
9.26	Creating savings in operating costs	
9.04		Average
14.72	The desire of the major customers of the company to implement the green supply chain in the company	Supply Chain
14.47	Encouraging the major customers of the company to implement the green supply chain in the company	
11.44	The pressure of consumers who only use our product	
12.46	Our suppliers of goods and services	
13.27		Average
8.93	The company's desire to maintain or provide a picture of social and environmental responsibility	Society
10.07	Expect the community from the company	
10.11	The pressure of green support groups and environmental sponsors	
11.06	Pressure from the insurance industry to implement green supply chain management	
9.99	The pressure from investors with shareholders to implement the green supply chain	Average
10.03		

5- Concluding and Concluding

The purpose of this research is to identify and prioritize the factors affecting green supply chain management in Part Company. In order to achieve this goal, existing relationships between variables were investigated in three hypotheses. The results of studying the first hypothesis are consistent with the results of the study of Helt and Ghobadian (2009). Confirmation of this hypothesis means that external stimuli, such as legal factors, competition, supply chain, and society, are based on internal stimuli that include commodity risk, product and service activities

and organizational culture, senior management commitment and employee pressure, impact they let. The external stimuli affecting manufacturing companies can provide the positive orientation of employees and managers and the organizational culture and products (as internal stimuli) towards the operational activities of the green supply chain management, and in order to increase the company's overall ability and Increasing profitability as well as reputation of the manufacturing company is effective. In addition, this impact and relationship can affect cost and quality in different dimensions in the future and affect the relationship between the external environment within the organization and the organizational development capability. Organizations may also be attentive to green supply chain management incentives, especially external stimuli, depending on risk, firm size and nationality of the organization's employees, and that these conditions may be better predictions for green supply chain management and better targeting tools for the green supply chain management stimulus has various responses. According to the results of the research, the second hypothesis is also confirmed. The results of this hypothesis are consistent with the results of Sarcis et al. (2010), Helt and Ghobadian (2009), and Zhou et al. (2006).

Confirmation of this hypothesis means that external stimuli, such as legal factors, competition, supply chain, and society, affect the operational activities of green supply chain management. The factor of competition among external stimuli has the greatest impact on operational activities of the green supply chain management. And this means that it will be beneficial to improve the competitiveness of production companies in the implementation of green supply chain management.

The results showed that internal stimuli of green supply chain management do not affect the operational activities of green supply chain management, and the third hypothesis is not confirmed. While domestic stimuli are expected to have a major impact on operational activities of the green supply chain management, according to previous studies. Zhou et al., (2006), however, Carter and Jennings's (2000) study results showed that some of the internal drivers of green supply chain management did not directly affect the operational activities of the green supply chain management, but they were non-existent Directly affect the operational activities of the green supply chain management. Due to the importance of the role of internal stimuli and, on the other hand, the lack of confirmation of its direct impact on the operational activities of green supply chain management in the sample, it is recommended that the manufacturing companies be considered as internal factors as factors affecting performance They look at their activities and evaluate their effectiveness and effectiveness more accurately. In addition, the internal stimuli must be properly used to implement the operational activities of the Green Supply Chain Management (GHG) to maximize productivity in this field. Friedman's non-parametric test was used to obtain the rank of each of the internal and external stimuli of green supply chain management and their structures. According to Friedman's prioritization table, the results showed that the highest competitive pressure score was then Legal factors, society, internal stimuli and, finally, supply chain have the highest pressure, which indicates the high importance of competition and other factors expressed among companies.

6. Proposals for future research

One proposal could be to review the operational activities of the green supply chain management and its impact on the organization's performance. In addition, researchers can

explore the impact of operational green supply chain management practices on gaining competitive advantage. Investigating the impact of intrinsic motivators such as senior manager's commitment, organizational culture, staff pressure on the principles of greening in the organization are among other relevant related topics that are important in manufacturing companies. Also, the role of supply chain management in the application of environmentally compatible technologies and the study of factors affecting the implementation of operational activities of green supply chain management are other suggested issues. Another proposal could rank the external and internal stimuli of green supply chain management using multi-criteria decision-making methods.

7. Research and Research Restrictions

One limitation of the researcher was the limitation of data collection. Certainly, given the culture of the country and the limited interactions of the university and industry, the author encountered several problems in collecting data. Among other research constraints, it is possible to update the information of managers of manufacturing companies on the subject of the research. On the other hand, the nature of the subject is ethical research, and the correct answer to the questionnaire affects the questionnaire, although the anonymous questionnaires were designed to allow respondents to have more freedom in answering questions. Of the other constraints, the lack of willingness to adequately accompany and adequately respond to the managers of the statistical society for various reasons, including the nature of the research topic and the lack of green conditions in some of these manufacturing companies, has led to a re-job of distributing and increasing the costs incurred. Was researched.

8. Comparison with other previous studies

One of the advantages of this research and its superiority to other researches in this field is in addition to ranking the structures of internal and external stimuli and Green supply chain activities with Friedman test, the implementation of methodological research with path analysis technique based on path coefficients. And the variance determined using the application software and the relatively new "PLS" software, which, in comparison with other software applications in this area, has much more flexibility and capabilities and is compatible with statistical samples in the domain of the case. The study is usually not a condition of normalization. Among other advantages of this research and its superiority to the model and research of Hlat and Ghobadan, which is the main basis of this work, in addition to the different methodology and the statistical population of the study, there are new and practical suggestions that are based on day science and research results based on The intellectual system and the specific conditions of the industry in Iran are presented.

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