THE MEDIATING EFFECT OF SUPPLY CHAIN FLEXIBILITY AND AGILITY BETWEEN PARTNERSHIPS WITH SUPPLIER, CUSTOMER RELATIONSHIP, VARIETY MANAGEMENT STRATEGY AND MANUFACTURING EXCELLENCEIN GENERAL COMPANY FOR THE AUTOMOTIVE INDUSTRY OF BABYLON /ALEXANDRIA

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Abstract
Purpose –, There is an exchange-off between product variety and SC efficiency. This study examines how variety-management practices, including VMS, supplier partnership and consumer relationships, influence SCF and SCA at multiple differentiations to help reduce the effect of product variety on SC. The population of this study was employees taken from manufacturing industry of General Company for the automotive industry in Babylon /Alexandria. Sample size was 210. Adapted questionnaire based on 5-point Likert Scale was used to collect the data. The findings support VMS, partnership with supplier has achieved the desired levelof manufacturing excellence through SC flexibility and agility. However, customer relationship was not gain success to achieve manufacturing excellence through supply chain agility. The first limitation is this study is conducted in developing country; the model of the study should be tested in developed country like USA, second limitation is the responses were taken through survey; the researcher should use interview and secondary data to explore the factors that can contribute performance.
Keywords: Supply chain flexibility, Supply chain agility,Productvariety management, manufacturing excellence.

1. Introduction

The managers of today's supply chain (SC) understand that their functions are growing extremely complicated, primarily due to technological developments, globalization and volatile market conditions in particular. Lack of awareness of driver complexity and badly planned and implemented ways to overcome this difficulty make it very difficult to undertake SC decisions, often leading to unfavorable results (Manuj and Sahin, 2009). In an optimistic world, instead of the traditional strategy that appears to be from the 'factory outwards', SC must be built from the 'customer backwards.' The tendency is to build SC that focuses more on the objective of 'manufacturing excellence instead of 'performance' (Christopher et al., 2006). Product variation can be an particularly challenging driver of complexity for goods

with highly personalized choices, which can interrupt the SC (Faber et al. 2002). Many manufacturers acknowledge that there is an exchange-off between product variety (PV) and SC quality (Thonemann and Bradley, 2002). The high selection of goods contributes to a rise in revenue and market share and could also add uncertainty to the forecast of demand and generate difficulty in associating supply with demand in the supply chain (Randall and Ulrich, 2001). While the initial effect of product differentiation on sales is positive, increase in product variety can slowly lead to lower sales above a certain point (Wan et al., 2012). Thus the, the possibly adverse effects on SC efficiency, such as difficulty in design , manufacturing and planning, and also production costs and business mediation, should be considered by companies who need to increase the product variety.

Manufacturers optimize varieties of products to maximize the exchange-off between product variety and SC output through restricting it by concentrated production or improved flexibility. Even then, continual development in flexibility and agility is a more efficient way of reacting to consumer demands while contemplating long-term income and rivalry for market share as product volatility grows. In order to achieve the required response capacity, organizations can concentrate on either SC flexibility or SC agility, and this is always safer than considering all aspects. The SC agility of organizations may also be influenced by the harmony between the flexibilities in the SC system (Swafford et al., 2006). Flexibility or agility is being shown consistently to increase the capacity of an organization to adjust successfully to changes in the SC (Skipper and Hanna, 2009). So, flexibility and agility of the supply chain often have a beneficial effect on both the quality of capital and customer support (Tummala et al., 2006). The output of the supply chain involves these cost-efficiency and customer support factors (Tummala et al., 2006), while SC flexibility and agility are described in this study in forms of SC flexibility in product variety management.

What are the most efficient variety management functions to maximizeflexibility the exchange-off between PV and SC manufacturing excellence, provided that establishing SC flexibility and agility stays important for the management of variety-related problems? What are the most important practices in VM to maximize SC flexibility and agility, including both? First, it has ensure progress to achieve SC flexibility and agility by implementing internal variety management strategies (VMSs) like modularity, mobile manufacturing and postponement (Patel and Jayaram, 2014). Do internal variety policies, however, adequate to minimize the exchange-off between product variety and output of SC? Through exposing their technologies to an outside network of cooperative stakeholders, businesses will also make the most of the advantages of creativity since the implementation of a modular concept and structures will contribute to vertically and horizontally disintegration. Thus the, another key driver in solving complex challenges and supporting the integrated model is a second, additional alignment between supplier and consumer. Collaboration with the upstream and downstream stakeholders is emphasized by external convergence. A the number of companies are seeking to build alliances with suppliers and distributors in order to adapt to consumer demands (Slack and Chambers, 2007), indicating that SC convergence that reflects on both demand and supply is needed to cope with the increased volatility and confusion generated by product diversity (Heikkilä, 2002). Two basic strategies that achieve

convergence within a SC are supplier collaborating and the creation of stronger client partnerships, Vickery et al . (2003) stated that In order to maintain good product quality and low expense, collaboration with suppliers requires early supplier engagement in product design or proximity to suppliers with advanced technical capabilities. Near consumer partnerships encourage businesses to look for customer needs and specifications details, which help companies to become more sensitive. In order to increase manufacturing excellence and cost effectiveness, knowledge obtained from building good partnerships with clients may also be used (Vickery et al . , 2003). SC integration via supplier partnerships and near consumer relationships can be critical , especially for product variety management and production of new products. It has also been shown that process communication is good for expense, distribution, efficiency and versatility (Mackelprang et al., 2014).

Theoretical perspectives to the management of variability in the SC resulting from product variety have been explored in a range of studies (Blecker and Abdelkafi, 2006), while others may have empirically studied the effect of product variation on specific dimensions like time and cost (Thonemann and Bradley, 2002) or have concentrated on restricted industries like the automobile industry (Fisher, Ramdas, Ramdas). Even so, despite the consideration of multiple methods, like internal and external drivers with distinct degrees of SC resilience and endurance in separate manufacturing industries, no effort occurs in the literature to illustrate differentiated techniques for addressing disparate problems. This method will offer a theoretical framework for understanding how to cope with problems linked to variation and their influence on the SC.

2. Conceptual Model and Hypotheses Development

2.1Internal Variety Management Strategy

In describing the framework of internal variety control techniques to minimize the detrimental effect of product variety on the SC, the analysis identifies three tasks as fundamental. Three forms of organizational strategy, which can maximize the exchange-off between product variety and SC efficiency, were also proposed by Scavarda et al .(2010). Second, improvements in product design (the usage of product modularity) decrease the complexities and costs involved with the creation, manufacturing and processing of goods. Second, flexible development practices like cellular manufacturing contribute to cost-effective manufacturing. Finally, delay of decisions on product configuration limits the influence of product variation market instability (Patel and Jayaram, 2013). The location of inventories in organized production activities , for example, lowers business negotiating expenses. Similarly, VMSs is split into product levels like system modularity, process levels like part families (device modularity) and delayed differentiation by Blecker and Abdelkafi (2006). The idea that product modularity and process modularity enhance operational efficiency, including labour, material processing, mixing and versatility of adjustment, was endorsed by Patel and Jayaram (2013). The present study therefore proposes three representative strategies: modularity, cellular development and delay, respectively, as commodity, method and systemic approaches. First, through improving SC flexibility and agility, the latent factor VMS here refers to the inner operation to reduce the exchange-off between product variety and SC efficiency. Next, three accessible management methods

define and reflect VMS as dependent variable based on measurements obtained from a review of the literature.

Fisher et al . (1999) introduced method- and product-based techniques to handle expanded product variety. Second, process-based techniques have ample versatility for manufacturing and delivery to cope with high variety at a fair expense. For instance, parts with common design features and processing criteria are grouped into families by utilizing community technology concepts in cellular manufacturing, contributing to the flexibility of organizational (Abdi and Labib, 2004). So, second, product-based methods like modularity allow for model structures that allow for large variety while retaining a low variety of components in development and delivery. The cost rises in SC can be arrested to some degree by modularization due to the growth in variety (Syam and Bahatnagar, 2015). Shared components improve economies of scale, automate processes of manufacturing and planning, and minimize material costs (Patel and Jayaram, 2013). The effects of product modularity reach outside the limits of the value chain of a business since they help the organization to modify networks of manufacturing, processing and delivery (Salvador et al., 2004). Finally, an apparent connexion occurs between SC specification and postponement: postponement will reduce the effect of market volatility as a structure-based approach and encourage further product diversity (Dell's mass customization). Recently, this strategy has gained significant publicity as a means of growing product variety costs and hazards while enhancing SC versatility (Patel and Jayaram, 2013). The study thus suggests the following hypothesis:

Agility of the supply chain could be accomplished by cellular manufacturing centered on the Pareto Rule (Christopher and Towill, 2001). Cellular development is assisted by goods or components that are modularly constructed, resulting in higher agility. Agrawal and Hurriyet (2004) have pointed out that cellular processing eliminates the difficulty produced by large-scale manufacturing and enables the development of a range of products, whereby identical components are divided into families based production processes. Cellular processing, in particular, decreases lead time and therefore speeds up efficient output and delivery in the SC. Jacobs et al . (2011) concluded with respect to design-based techniques that design modularity promotes modularity of operations, increases mobility and enhances business development. Delayed distinction is also enabled by commodity modularity (Salvador et al., 2004). Postponement as a structure-based solution helps suppliers to maximize inventory turnover, efficiency of products and flexibility of SC and promotes accelerated distribution, contributing to better customer experience (Davila and Wouters, 2007). Christopher and Towill (2001) introduced the 'decoupling-point' method, which could be assisted by flexible development and postponement techniques, to accomplish the agile paradigms in the SC.

2.3External Supply Chain Integration

Partnership with Suppliers

SC stability is enhanced by external incorporation. Advantages of external cooperation by integration also occur as partners are able to collaborate together to accomplish common purposes through exchanging knowledge and expertise (Stank et al . , 2001). To combine the internal capabilities of an organization with those of its external person, different

competencies are needed (Whipple et al., 2015). Sharing confidential details on financing, development and analysis increases confidence in a partnership and allows for a rapid response to consumer needs. Thus, producers boost not only contact flows, but also product production by combining a multidisciplinary team with suppliers (Tummala et al., 2006). During product growth, collaborative problem solving and performance reviews with suppliers are important (Tummala et al., 2006). A complete partnership requires cost and profit sharing, and the long-term emphasis of a SC should not be exclusively on costs. Trust between producers and suppliers can facilitate comprehensive exchange of information and create deeper partnerships (Liao et al., 2011), that can minimize confusion in turn. It is crucial to exchange sensitive data such as cost (Ngai et al., 2004) and to establish near relationships, especially during product creation (Cousins et al . , 2011). The value of supplier cooperation, which includes elements like joint problem solving, shared confidence, joint contribution and the exchange of financial details, was also emphasized by Das et al . (2006). Via better coordination of buying and output activities, these ways of partnership with suppliers add to SC versatility. In fact, near partnerships have a beneficial effect on the flexibility of amount, blend and new goods (Suarez et al., 1996), which may contribute to flexibility in SC by contributing to greater shared engagement and better connectivity? As a lead time operation, therefore

Supplier partnerships have a strong link with the manufacturing excellence of product creation. The expertise and expertise of suppliers play an important role in that the cost of output(Tan and Kannan 1998). During product creation and growth, the early establishment of strong partnerships with customers is crucial for a business (Cousins et al., 2011). Turnover (Faems et al., 2005), product creativity (Nieto and Santamaria, 2007) and other success parameters, such as product expense, consistency and time to market, are often affected by supplier engagement. In specific, the supplier partnership will help better cooperation and the SC's quicker reaction to business shifts (Zsidisin and Ellram, 2001). For instance, businesses are pursuing alternate long-term partnerships with their suppliers with the rise of B to B, electronic commerce to boost SC agility (Handfield and Nicholas, 2002). As an external integration operation, partnerships with suppliers may also contribute to SC agility, contributing to the following hypothesis:

Customer Relationship

Many parameters decide the selection of goods, including consumerneeds , market competitiveness, so it is important that each SC partner brings value from the viewpoint of consumers in a SC by delivering the best product or service (Jeong and Hong, 2007). From the sourcing of raw materials to the final point of sale, not just the commodity, but also the whole SC, should be successfully and efficiently handled to satisfy the product and service value criteria of the end customer (Zokaei and Hines, 2007).Firms need a consumer plan to reduce the diversity of unnecessary goods and recommend two approaches: (a) closer client relations to ensure that successful products reflect client needs, and (b) eliminating goods that are no longer advantageous. Firms ought to consider the selection that clients find appealing, preventing uncertainty from the abundance of knowledge that results in exclusion from buying decisions. Gathering consumer input from a SC is needed to help recognize evolving customer specifications in order to create deeper customer relationships (Tummala et al.,

2006). To develop strong consumer relationships, following it up on customer reviews and reviewing customer grievances is essential (Wang and Feng, 2012). To create strong consumer relationships, managing customer support and adapting to the changing needs of consumers are often critical (Wang and Feng, 2012). In the context of, for instance, commodity, volume and distribution flexibility, knowing consumer demands across near customer relationships will contribute to SC flexibility. Customer management is extremely demand-focused in contrast with supplier management. An extremely significant factor in improving the versatility of a SC is an clear perception of consumer needs and demand (Tracey and Tan, 2001). Therefore, external integration practices that contribute to stronger consumer partnerships will increase SC flexibility:

Agility in the supply chain is targeted at consumer responsiveness and customer support. Co-creation, which has been common in recent years, exemplifies this (Michel et al., 2008). User interaction is extremely valuable for identifying the latent desires of buyers, whose information is essential for the effective production of new goods (Kristensson et al., 2008). One of the most successful ways of handling product diversity may be co-creation by consumer engagement, and strong customer relationship management achieves this objective. To optimize consumer touch, CRM is the management of infrastructure, practices, knowledge and people.

The need to move from the supply to the demand side of SC management is illustrated by Heikkilä (2002). Improved connectivity in the SC to demand details enables quick and reliable execution, organized preparation and effective relationships with logistics (Treville et al., 2004), resultant in SC agility. SC responsiveness could be strengthened through a partnership of confidence between buyer and supplierHandfield and Bechtel (2002). In order to establish a near and collaborating partnership, SC agility allows businesses to closely monitor the legally distinct yet operationally interdependent groups, including suppliers, retailers , distributors and consumers (Ngai et al., 2011). As an external integration operation, closer and organized consumer partnerships will also, in reaction to business demands, contribute to greater SC agility:

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Supply chain Flexibility and Manufacturing Excellence

As a surrogate for the necessary accounting metrics, innovation efficiency, commodity success and revenue output, competitive performance is used (Shan and Jolly, 2010). Competitive success refers to the competitive advantage effect, which reflects the degree to which a company may build a benefit over its rivals. In previous flexibility and IT-related literature, various measures like expense, time, and efficiency have been addressed. Cost, dependable distribution, and time-to - market are taken into account in this analysis. Cost is not mentioned because cost and two separate sets of measurements are defined by the other three measures (Krause et al., 2007). Quality in this study implies winning by making goods that reliably match or surpass the standards of the consumer. Dependable distribution involves competing by reliably providing consumers with the correct product at the same moment. Time-to - market involves competing and supplying consumers with new goods more efficiently. This competitive advantages represent the willingness of the company to

offer a high degree of customer support that results in competitive success (Shepherd and Gunter, 2010), which other rivals will not quickly copy and thus have enduring value.

The flexibility of an organization is one of the skills that often involve consistency and execution in some literature describing the strategic success of a business (the accumulated capability), where quality is the basis for distribution and durability (Grobler and Grubner, 2006). We suggest the arrangement, for the following purpose, in a different course. The versatility, efficiency and execution referred to in the cumulative skills are the internal manufacturing capacities of an organization, such as versatility in length, flexibility in mixing and compliance in output. This study, on the other hand , looks at the versatility of the supply chain as providing both an internal versatility aspect that can contribute to product innovation (flexibility in product development) and a dimension that involves relationships with suppliers that encourage product innovation (flexibility in logistics and consumer base stability, flexibility in suppliers). We take this opinion since we think creativity is one of the main elements of competitive advantage, with efficiency and quality.

Supply Chain Agility and Manufacturing Excellence

Literature on logistics management and SCM often shows a strong link between resilience and financial efficiency. It is important to measure financial results across several scales, like return on assets , return on revenue, return on investment, and revenue, to name a couple. It has been claimed that agile development has a strong beneficial effect on financial results. For instance, VazquezBustelo et al . (2007) found proof in their analysis of Spanish producers that agility would directly affect aspects of the financial output of the business (return on assets).

Research on SCM often shows a favorable association between agility in the SC and financial results. For example, to measure financial efficiency, Swafford et al . (2008) used perceptual evidence. The authors have gathered several archival data points to create a positive link between their perceptual financial success indicators and quantitative financial data to improve calculation rigour. By using an enhanced metric for financial efficiency, the current research aims to validate the positive relation between SC agility and firm performance proposed by Swafford et al . (2008). Specifically, financial output is calculated using data collected for each organization. In order to meet this goal, we have placed forth the following experimental hypothesis:

2.4 Hypothesis

H1. CR positively affects SCA.

H2. CR positively affects SCF..

H3. PWS positively affects SCA.

H4PWS positively affects SCF

H5. SCA positively affects ME

H6. SCF positively affects ME

H7. VM positively affects SCA

H8. VM positively affects SCF

H9: SCA mediates between CR and ME

H10: SCA mediates between PWS and ME

H11: SCA mediates between VM and ME

H12: SCF mediates between CR and ME

H13: SCF mediates between PWS and ME

H14: SCF mediates between VM and ME

3 Methodology

The population was employees of General Company for the automotive industry in Babylon /Alexandria used in this study. The survey was online questionnaire used tocollect data from the employees who were engaged in manufacturing process in Multinational manufacturing firms. The unit of analysis was employee, and the respondentswere manufacturer employees. The researchers shared the online link on Facebook as well asWhatsApp and its groups to arrive at most of the manufacturer employees to give response through online questionnaire.The researchers got a total of 210 responses. So, there were 163responses were useable for data analysis.

3.1 Measure

Adapted questionnaire based on 5-point Likert Scale was used to collect the data. Customer relationships, Partnerships with supplier have four items, Variety management strategy has three items, . Supply chain flexibility has six items, Supply chain agility has seven items and manufacturing excellence has three items to measure.

4 Data Analysis

4.1 Measurement Model

The alpha, composite reliability (CR) and average variance derived (AVE) from Cronbach are drawn in this model. The value of factor lodgings must be > 0.5 and below 0.05. The value is excellent for alpha > 0.9, 0.8 is fine and < 0.7 is appropriate. The CR must be > 0.7. In addition, the Convergent Validity (CV) and AVE values should also be equivalent to or > 0.5, contributing to internal consistency. The MMA outcomes are illustrated in Table 2. It illustrates that all the values are appropriate. Factor loading, alpha and CR of Cronbach are all > 0.7. Loading factors values smaller than 0.7 have been deleted. Furthermore, AVE is > 0.5, which results in convergent validity.

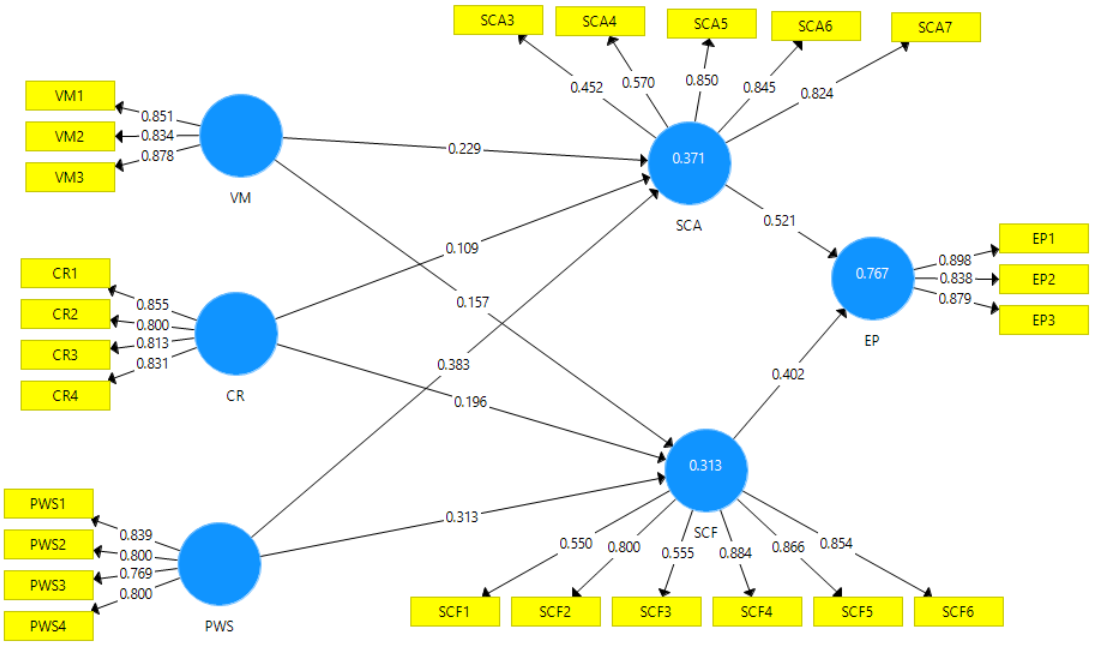

Figure 4.1
Measurement Model Assessment

Table 4.1
Internal Consistency

Constructs	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
CR	0.844	0.895	0.681
ME	0.842	0.905	0.76
PWS	0.816	0.878	0.644
SCA	0.766	0.842	0.529
SCF	0.85	0.891	0.585
VM	0.815	0.89	0.73

In addition, by convergent validity (CV) and discriminant validity (DV), the validity of the constructs is calculated. Table 4.1 indicates that the AVE for all latent constructs are greater than 0.50, as reported in the findings. The validity of discriminants reveals how certain latent structures are distinctive from others. By taking the square root of Average Variance Derived from all the latent constructs as seen in Table 4.2 with the bold meaning in the diagonal correlation matrix, the present analysis test. The analysis findings in Table 4.2 reveal that AVE square roots are higher.

Table 4.2

Discriminate Validity

Constructs	CR	ME	PWS	SCA	SCF	VM
CR	0.825					
ME	0.43	0.872				
PWS	0.485	0.493	0.802			
SCA	0.477	0.842	0.539	0.727		
SCF	0.472	0.818	0.478	0.799	0.765	
VM	0.795	0.424	0.448	0.488	0.453	0.854

4.2 Structural Model Assessment

The second component of Structural Model Assessment (SMA) data review deals with both direct and indirect calculation hypotheses. As seen in Table 4.3, direct hypotheses for approving or rejecting were calculated. It must consider both associations with a t-value greater than 1.96 and a P value of 0 less than 0.05. In the current study eight direct hypotheses and six direct hypothesis are measured,Thus, H2 and H3, H4, H5, H6, H7, H8 are accepted. However, H1 is rejected since t value is1.483 less than 1.96 and P value is 0.138greater than 0.05 in Table 4.3. The relationship of CR -> SCFwith the β-value is 0.196, P value is 0.01<0.05 and t value is 2.533>1.96. Thus, the CR effects positively on SCF.The relationship of PWS -> SCA with the β-value is 0.383, P value is 0.00<0.05 and t value is 6.351>1.96. Thus, thePWS effects positively on SCA.The relationship of PWS -> SCF with the β-value is 0.313, P value is 0.00<0.05 and t value is 5.395>1.96. Thus, the PWS effects positively on SCF. The relationship of SCA ->ME with the β-value is 0.521, P value is 0.00<0.05 and t value is 8.232>1.96. Thus, theSCA effects positively on EP. The relationship of SCF ->ME with the β-value is 0.402, P value is 0.00<0.05 and t value is 6.234>1.96. Thus, theSCA effects positively on EP. The relationship of VM -> SCA with the β-value is 0.229, P value is 0.00<0.05 and t value is 3.542>1.96. Thus, theVM effects positively on SCA.The relationship of VM -> SCF with the β-value is 0.157, P value is 0.027<0.05 and t value is 2.21>1.96. Thus, theVM effects positively on SCA.

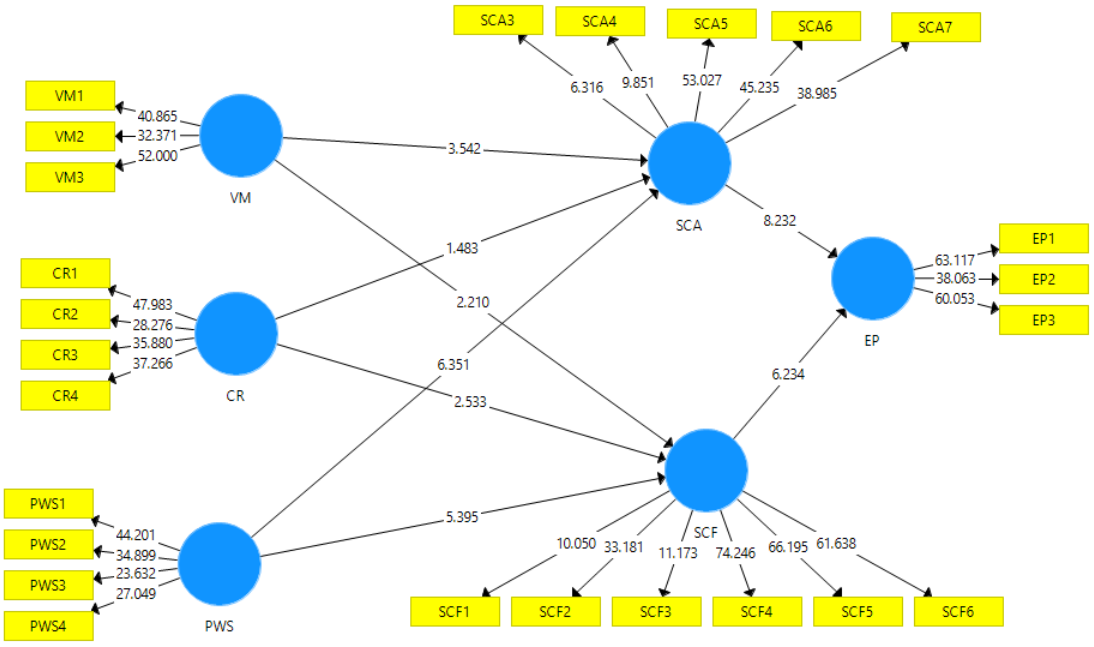

Figure 4.2: Structural Equation Model

Table 4.4

Direct Relationship

Hypothesis	Relationship	Original Sample (O)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Decision
H1	CR -> SCA	0.109	0.074	1.483	0.138	Rejected
H2	CR -> SCF	0.196	0.077	2.533	0.011	Accepted
H3	PWS -> SCA	0.383	0.06	6.351	0	Accepted
H4	PWS -> SCF	0.313	0.058	5.395	0	Accepted
H5	SCA ->ME	0.521	0.063	8.232	0	Accepted
H6	SCF ->ME	0.402	0.064	6.234	0	Accepted
H7	VM -> SCA	0.229	0.065	3.542	0	Accepted
H8	VM -> SCF	0.157	0.071	2.21	0.027	Accepted

The bootstrapping approach was utilized over other mediation assessment by applying 95% bias corrected and increased trust intervals. In the table 4.4, the results show that CR -> SCA ->ME t-value 1.449 less than 1.96, p value 0.148 greater than 0.05 and β value 0.057is non-significant. Thus, H9 is rejected. The results show that PWS -> SCA ->ME t-value 4.979greater than 1.96, p value 0.00 less than 0.05 and β value 0.2is significant. Thus, H10 is accepted.The results show that VM -> SCA ->MEt-value 3.322greater than 1.96, p value 0.001 less than 0.05 and β value 0.119is significant. Thus, H11 is accepted.The results show that CR -> SCF ->ME t-value 2.35greater than 1.96, p value 0.019less than 0.05 and β value 0.079is significant. Thus, H12 is accepted.The results show that PWS -> SCF ->ME t-value 3.684greater than 1.96, p value 0.000 less than 0.05 and β value 0.126is significant. Thus, H13 is accepted.Thus, H12 is accepted.The results show that

VM -> SCF -> EME t-value 2.11greater than 1.96, p value 0.035less than 0.05 and β value 0.063is significant. Thus, H14 is accepted.

Table 4.4

Indirect Relationship

Hypothesis	Relationship	Original Sample (O)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Decision
H9	CR -> SCA ->ME	0.057	0.039	1.449	0.148	Rejected
H10	PWS -> SCA ->ME	0.2	0.04	4.979	0	Accepted
H11	VM -> SCA ->ME	0.119	0.036	3.322	0.001	Accepted
H12	CR -> SCF ->ME	0.079	0.034	2.35	0.019	Accepted
H13	PWS -> SCF ->ME	0.126	0.034	3.684	0	Accepted
H14	VM -> SCF ->ME	0.063	0.03	2.11	0.035	Accepted

Attaining a certain quality of model, the value of Q2must be > 0 (Chin, 1998). The value of Q2 of manufacturing excellence is 0.55>0, SCA is 0.185>0 and SCF is 0.169>0 in Table 4.5.

Table 4.5

Predictive Relevance

Constructs	SSO	SSE	Q² (=1-SSE/SSO)
CR	1,560.00	1,560.00	
ME	1,170.00	526.429	0.55
PWS	1,560.00	1,560.00	
SCA	1,950.00	1,590.22	0.185
SCF	2,340.00	1,943.79	0.169
VM	1,170.00	1,170.00	

5.1 Discussion

The purpose of the study is to examine the mediating effect of supply chain agility and supply chain flexibility between customer relationships partnership with suppliers, varietymanagement strategy and manufacturing excellence in General Company for the automotiveindustry in Babylon /Alexandria, direct hypotheses for approving or rejecting were calculated. It must consider both associations with a t-value greater than 1.96 and a P value of 0 less than 0.05. In the current study eight direct hypotheses and six direct hypothesis are measured, Thus, H2 and H3, H4, H5, H6, H7, H8 are accepted. However, H1 is rejected since t value is1.483 less than 1.96 and P value is 0.138greater than 0.05 in Table

4.3. The relationship of CR -> SCF with the β-value is 0.196, P value is 0.01<0.05 and t value is 2.533>1.96. Thus, the CR effects positively on SCF.The relationship of PWS -> SCA with the β-value is 0.383, P value is 0.00<0.05 and t value is 6.351>1.96. Thus, the PWS effects positively on SCA. The relationship of PWS -> SCF with the β-value is 0.313, P value is 0.00<0.05 and t value is 5.395>1.96. Thus, the PWS effects positively on SCF. The relationship of SCA ->ME with the β-value is 0.521, P value is 0.00<0.05 and t value is 8.232>1.96. Thus, theSCA effects positively on ME. The relationship of SCF ->ME with the β-value is 0.402, P value is 0.00<0.05 and t value is 6.234>1.96. Thus, theSCA effects positively on ME. The relationship of VM -> SCA with the β-value is 0.229, P value is 0.00<0.05 and t value is 3.542>1.96. Thus, theVM effects positively on SCA. The relationship of VM -> SCF with the β-value is 0.157, P value is 0.027<0.05 and t value is 2.21>1.96. Thus, theVM effects positively on SCA.Further the mediating effect, the results show that CR -> SCA ->ME t-value 1.449 less than 1.96, p value 0.148 greater than 0.05 and β value 0.057is non-significant. Thus, H9 is rejected. The results show that PWS -> SCA -> EP t-value 4.979greater than 1.96, p value 0.00 less than 0.05 and β value 0.2is significant. Thus, H10 is accepted.The results show that VM -> SCA ->ME t-value 3.322greater than 1.96, p value 0.001 less than 0.05 and β value 0.119is significant. Thus, H11 is accepted.The results show that CR -> SCF ->ME t-value 2.35greater than 1.96, p value 0.019less than 0.05 and β value 0.079is significant. Thus, H12 is accepted.The results show that PWS -> SCF ->ME t-value 3.684greater than 1.96, p value 0.000 less than 0.05 and β value 0.126is significant. Thus, H13 is accepted.Thus, H12 is accepted.The results show that VM -> SCF ->ME t-value 2.11greater than 1.96, p value 0.035less than 0.05 and β value 0.063is significant. Thus, H14 is accepted.

5.2 Conclusion

In terms of maximizing the exchange-off between product variety and SC efficiency, product variety aspirations for better competitiveness should be regarded. This research therefore proposes two different terms as mediating factors: versatility of SC and agility. To achieve the needed SCF and SCA, internal VMS and external integration suggested. Customer partnerships, though, have little effect on SCA. As an alternative inclusion, partnerships with suppliers and consumer associations are included. While internal VMS, like modularity, cellular manufacturing, were successful in managing variability and improving the versatility and agility of SC, external integration of SC was critical. Further, the findings support the VMS, partnership with supplier has achieved the desired levelof manufacturing excellence through SC flexibility and agility. However, customer relationship was not gain success to achieve manufacturing excellence through supply chain agility. The first limitation is this study is conducted in developing country; the model of the study should be tested in developed country like USA, second limitation is the responses were taken through survey, the researcher should use interview and secondary data to explore the factors that can contribute manufacturing excellence.

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