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THE EFFECT OF SUPPLY CHAIN INTEGRATION, SUPPLY CHAIN FLEXIBILITY AND SUPPLY CHAIN MANAGEMENT PRACTICES ON COMPETITIVE ADVANTAGE AND THEIR PERFORMANCE MODERATED BY ENVIRONMENT UNCERTAINTY IN MANUFACTURING INDUSTRY GO PUBLIC IN JABODETABEK

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Abstract: *The research objective is to examine and analyze the effect of supply chain integration, supply chain flexibility, and supply chain management practices on competitive advantage and firm performance which is moderated by environmental uncertainties in the manufacturing industry to go public in Jabodetabek. The study used a technique samples saturated with the number of respondents in 81 companies. The study hypothesis was tested through WarpPLS 5.0. The results of the study are (1) the effect of supply chain integration to competitive advantage and firm performance is inconclusive; (2) there is positive and significant between the flexibility of supply chain and supply chain management practices on competitive advantage and company performance; (3) competitive advantage as mediationin part to the relationship of supply chain integration,supply chain flexibility, and supply chain management practices on firm performance; (4) environmental uncertainty has three results is not moderation, moderation of negative and positive moderation. The practical implication of the research is to provide insight to the manufacturing industry manager go public in Jabodetabek on conceptual integration of structural relationship of supply chain integration, supply chain flexibility, and practice of supply chain management to improve competitive advantage and company performance by considering the conditions of environmental uncertainty. The originality of research is to propose an integrated model of the effect of supply chain integration, supply chain flexibility, and supply chain management practices on competitive advantage and company performance are moderated by the uncertainty of the environment.*

Keywords: *Supply chain integration,supply chain management practices, competitive advantage, firm performance, environmental uncertainty.*

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1. INTRODUCTION

The role of industrial development in the various regions is an implementation of the national industrial development goals, namely to increase the spread of the industry. This study is focusing on the development of industrial sector in the region Jabodetabek (Jakarta, Bogor, Depok, Tangerang and Bekasi) to look at the role of the industrial sector, especially in manufacturing industries to increase economic growth in the bead area. There is increased growth of the viewable area of the manufacturing industry's contribution to Gross Domestic Product (GDP). The manufacturing industry is expected to increase per capita income, increase employment, and reduce poverty in the Greater Jakarta area. The increase in income per capita for each region will encourage an increased level of purchasing power of consumers to purchase products produced by the manufacturing industry in order to increase sales volume manufacturing industry and ultimately increase profitability.

Increased profits in the manufacturing sector can be achieved when the manufacturing industry is able to increase production efficiency, both for finished goods or semi-finished goods. Increasing the efficiency of the manufacturing industry should be done in an integrated manner that is from how companies get their raw materials from suppliers, processing raw materials into finished or semi-finished products, and how your product or semi-finished is sent to the customer on time at low cost. In order to achieve efficiency in an integrated manner in the manufacturing industry, it is indispensable to the implementation of supply chain management concepts which include supply chain integration both internally and externally, the flexibility of the supply chain, and supply chain management practices in order to enhance the company's competitive advantage and performance.

The empirical evidence supports is still needed for further research on the effect of competitive advantage to the company's performance is the result of research Hatani (2013), Rajaguru and Matanda (2009), Richey Jr. *et al.* (2009), Li *et al.* (2006), Kim (2006b), and C. V. A. Gimenez, E. (2003); C. Gimenez and Ventura (2005), which shows the influence of competitive advantage to the company performance, while the results of Chi et al. (2009) and Ince *et al.* (2013) showed different results, ie there is no influence between competitive advantage and company performance. Kim (2006b) found that the ability of the competition does not have a significant effect on the performance of the group of small companies, but to a large enterprise group competition ability to have significant impact. The reasons for these conditions are due to the group of small companies experiencing difficulty in the ability to manage the supply chain impact on spending the high cost and lack of ability bargaining at fellow supply chain partners.

Other empirical evidence that became the basis for further research on the integration of the supply chain to competitive advantage and firm performance is the result of research C. Gimenez and Ventura (2005) and Hatani (2013) which states that companies that achieve the level of implementation of internal integration and external supply chain can increase the competitive advantage. Research findings Kim (2006a) that the integration of internal and external supply chain did not significantly affect its ability to compete in smaller companies, but the big companies have a positive and significant effect. The reason of this research that small companies are generally difficult to be consistent in supervising and monitoring the activities of the entire supply chain as it requires a large investment, lack of ability to manage the supply chain so that the impact on the risk of weak bargaining at fellow supply chain partners. Results of research Vargas, Cardenas, and Matarranz (2000) found that the integration of internal and external logistics do not give a competitive advantage.

Gaps research is the research Fantazy, Kumar and Kumar (2009), which found the flexibility of the supply chain does not significantly influence the company's performance. In the study explained the reason of the effect was not significant between the flexibility of the supply chain to the company's performance, which is in accordance with that suggested by McLaughlin (1995) which states that there is a presence of mass customization in the manufacturing industry and the absence of careful analysis of the investments needed to support strategy in improving the product so that the flexibility of the supply chain is not functioning due to the mass customization. It is necessary for advanced research testing of the inconsistency of the findings.

Thatte research results, Rao, and Ragu-Nathan (2013) and Mensah, Diyuoh, and Oppong (2014) there is positive and significant correlation between supply chain management practices on competitive advantage. Ince et al. (2013) uses three indicators to the variable practice of supply chain management (strategic supplier partnerships, customer relationships, information sharing and quality levels) associated with the company's competitive advantage and performance. The results of the study Ince et al. (2013) is there is positive and significant correlation between supply chain management practices on competitive advantage and company performance. Mzoughi, Bahri, and Ghachem (2008) using 4 indicators for the variable practice of supply chain management (strategic supplier partnerships, customer relationships, the level of information sharing, and sharing quality information) associated with the company's competitive advantage and performance. Results of research Mzoughi *et al.* (2008) is there is positive and significant correlation between supply chain management practices on competitive advantage and company performance.

Miles and Snow (1986) shows that companies that have a match with the condition of the environment can improve the performance of the company, but companies that have a mismatch, or respond too slowly to change, and poor performance can not improve its performance. Uncertainty of the environment is a key element of environmental conditions (Miller, 1987). With regard to the supply chain, Davis (1993) shows that there are three different sources of environmental uncertainty is the uncertainty of demand, supply uncertainties and technological uncertainty.

This study developed a research Hatani (2013) which uses a variable supply chain integration and supply chain flexibility as independent variables that affect the company's competitive advantage and performance. Freshness in this research is to add:

1. Variable uncertainty of the environment aims to strengthen or weaken the influence of supply chain integration, supply chain flexibility, and supply chain management practices on competitive advantage and performance peruasahaan.
2. Variable supply chain management practices as independent variables that can increase competitive advantage and company performance, so that the independent variables into three, namely the integration of the supply chain, supply chain flexibility, and supply chain management practices.

Based on the findings of the gap results of research and theoretical debate about the integration of the supply chain and the flexibility of the supply chain to increase competitive advantage and company performance, this research has the objective to examine and explain the effect of supply chain integration, the flexibility of the supply chain, and the practice of supply chain management to competitive advantage and corporate performance are moderated by the uncertainty of the environment. In addition, to examine and explain the effect of supply chain integration, supply chain flexibility, and supply chain management practices on firm performance is mediated by the competitive advantage. The benefits of this research can contribute to enrich the theoretical literature on a particular operational management of supply chain management.

2. LITERATURE REVIEW, HYPOTHESES, AND CONCEPTUAL MODELS

Literature review in this study discusses the study of theory for the theoretical foundation that includes:

2.1. Supply Chain Management

Heizer and Render (2011) states that one of the strategic decisions in operations management is a supply chain management (SCM). In economic theory defines

SCM as a multistage system and multidirectional in decision-making (Halldorsson, Kotzab, Mikkola, & Skjøtt-Larsen, 2007). Definition of SCM is the integration activities of procurement of materials and services, conversion into semi-finished goods and finished products, as well as delivery to the customer (Heizer& Render, 2011). These activities include buying and outsourcing, plus other functions that are important to the relationship between suppliers and distributors. While Pujawan (2005) SCM is a network of companies that jointly work to create and deliver a product into the hands of end users. Such companies typically include suppliers, manufacturers, distributors, stores or retail, as well as companies supporting, such as logistics services company.

Krajewski and Malhotra (2010) describes the "supply chain management the synchronization of the firm's processes with Reviews those of its suppliers and customers to match the flow of materials, services, and information with customer demand" (supply chain management is the process of synchronizing the company with suppliers and customers to match the flow of materials, services, and information based on customer demand).

2.2. Integration of Supply Chain Management

The implementation of integrated supply chain management both internally and externally provides a strategic opportunity to create a competitive advantage (Heizer & Render, 2011). Supply chain integration across functions required of companies' internal integration "and at suppliers and customers" external integration "(Boon-Itt& Wong, 2011). Efforts to achieve competitiveness and high performance in each of these companies through the implementation of integrative SCM

Cross-functional internal integration is characterized by the flexibility of the entire system on the functions of procurement, production, logistics, marketing, sales, and distribution in each company (Awad & Nassar, 2010). Internal integration is an activity that emphasizes the flow of material and information that are made in the functional areas of the production department, purchasing, inventory, packaging, warehousing, sales, transportation and distribution departments through coordination, cooperation, and collaboration between cross-functional under the control of the company (Boon-Itt and Wong 2011; Gimenez and Ventura 2003; Han *et al*., 2009; Hatani, 2013; Kim, 2006b; Ou *et al*., 2010; Rajaguru and Matanda 2009; Richey Jr. *et al*., 2009).

Based on the description of the results of internal and external integration to competitive advantage and company performance, the research hypothesis can be drawn as follows:

H1: The increased integration of the supply chain will improve company performance

H2: The increased integration of the supply chain will increase the competitive advantage

2.3. Supply Chain Flexibility

Flexibility is the ability of companies to adapt to the production process in producing products according to customer wishes (Sanchez and Perez, 2005; Fantazy *et al.*, 2007). According to Duclos, Vokurka, and Lummus (2003) and Kumar, Fantazy, Kumar, and Boyle (2006) stated that the flexibility of the supply chain requires the integration starting from the supplier to the customer who is flexible to any changes that occur due to the demands of customers who increasingly critical. Thus the flexibility of the supply chain can be defined as the ability of members of the supply chain to be able to respond to market changes to achieve or maintain a competitive advantage, adjust strategies and share responsibilities to respond quickly to consumer demand. Supply chain flexibility is important in the industry today, because the conditions of competition increasingly global environment causes uncertainty companies are also getting bigger. Soon and Udin (2011) expressed the need for more empirical research on supply chain flexibility. Fantazy *et al.* (2009) and Hatani (2013) found that there is a positive and significant influence between flexibility on firm performance.

Based on empirical studies on the effect of supply chain flexibility to competitive advantage and company performance, the research hypothesis can be drawn as follows:

H3: The increased flexibility of the supply chain will improve company performance

H4: The increased flexibility of the supply chain will increase the competitive advantage

2.4. Supply Chain Management Practice

The practice of supply chain management can be defined as a series of activities undertaken by the organization to promote the effective management of the supply chain (Li *et al.,* 2006, p. P. 109). Li *et al.* (2006) proposed the practice of supply chain management as a multi-dimensional variables that include upstream and downstream sides of the supply chain. The literature identifies various practices as a dimension of these dimensions is outsourcing, strategic supplier partnerships, sharing of information, the flow of a continuous process, quality, purchasing, customer relationships, using inter-organizational systems, core competencies, delay, supply chain integration, geographic proximity, capability JIT, product

modularity, and cross-functional teams (Alvarado &Kotzab, 2001; Chen &Paulraj, 2004; Lee, 2004; Min, 2004; Tan ChoonKeah, Lyman, & Wisner, 2002). Consolidation of the previous literature, Li *et al.* (2006); Li, Rao, Ragu-Nathan, and Ragu-Nathan (2005) identify a supplier partnership strategy, customer relations, and information sharing as the key practices of supply chain management.

Strategic supplier partnerships can enhance the benefits of the company specifically on financial performance (Stanley and Wisner, 2001). Design development and logistics associated with the supplier has no correlation to the performance of the plant (Toni and Nassimbeni, 2000). Customer relations practice also shown to significantly improve the company's performance (Tan and Kannan, 1998). A higher level of information sharing is associated with a lower total cost, order fulfillment rate is higher and the cycle time shorter bookings (Lin *et al.,* 2002). The practice of supply chain management can improve the performance of the company (Mensah *et al*., 2014; Thatte *et al*., 2013; Youn *et al*., 2013; Ince *et al*., 2013; La Hatani, 2013; Wiengarten *et al*., 2010; Li *et al.,* 2006) and the competitive advantage of companies (Thatte *et al.,* 2013; Thatte *et al.,* 2007).

Based on the description above can be made the research hypothesis as follows:

H5: The increased supply chain management practices will improve the performance of the company

H6: The increasing practice of the management of the supply chain will increase the competitive advantage

2.5. Competitive Advantage

Competitive advantage is defined as the ability of organizations to create the position maintained over its competitors (Li *et al*., 2006, p. P. 111). Tracey, Vonderembse, and Lim (1999) argued that the competitive advantage consists of distinctive competencies that differentiate an organization apart from competitors, thus giving them an edge in the marketplace. Porter's approach to competitive advantage centers on the ability of the company to be a low-cost producer in the industry, or to be unique in the industry in some aspects of the popular appreciated by customers (Porter, 1985). Most managers agree that the costs and quality will continue to remain a competitive advantage dimension of a company (D'Souza, 2002). There is a widespread acceptance of the time to market as a source of competitive advantage (Holweg, 2005). Price / cost, quality, delivery reliance, and time to market has been consistently identified as an important competitive ability (Vokurka, Zank, & Lund III, 2002). Time becomes dimension to the competitive advantage in the contribution of other studies (Kessler & Chakrabarti, 1996; Zhang, 2001).

Competitive advantage can generally provide the company more capabilities when compared to competitors such as lower prices, higher quality, higher reliability, and shorter delivery times. These abilities can improve overall company performance (Mentzer *et al.,* 2000). Competitive advantage can improve the performance of the economy higher customer satisfaction and loyalty, and the effectiveness of cooperation. Brands with high consumer loyalty may reduce the displacement consumers so as to increase sales and profits of the company (Moran, 1981).

Based on the description above can be made following research hypothesis:

H7: Increasingly competitive advantage will improve company performance

H8a: The increased integration of the supply chain will improve the performance of the company with a competitive advantage mediated by

H8b: The increased flexibility of the supply chain will improve the performance of the company with a competitive advantage mediated by

H8c: Increasingly the practice of supply chain management will enhance the company keinerja mediated by the competitive advantage

2.6. Environmental uncertainty

Davis (1993) shows that there are three different sources of uncertainty that disrupted supply chains, namely (1) the uncertainty of suppliers, which include on-time performance, the average delay, and the level of inconsistency; (2) manufacturing uncertainty, arising from the performance of the process, damage to the engine, the performance of the supply chain and others; and (3) the uncertainty of customer or demand, arising from forecast error, the order is irregular, and others. According to Hahn (1990), the uncertainty of the environment can also be sourced to increased market competition and the increasing pace of technological innovation that can drive the need for the company and a world-class supplier to supplier development.

Technological uncertainty and demand as an exogenous factor faced by the integration of the supply chain, and this research has been supported empirically (O'Leary-Kelly and Flores, 2002; Fynes *et al.,* 2004; Liao and Tu, 2008). This means that the main role of supply chain integration is not to reduce the uncertainty of technology or demand, but to reduce the negative impact of uncertainty on the demand for technology and delivery performance. Therefore it is said that companies are able to integrate specific functions, as required by the competition of their environment, then it can outperform companies that do not do that (O'Leary-Kelly and Flores, 2002).

Boon-itt and Wong (2011) found that uncertainty affect demand and proven technology significantly moderate the relationship between the internal and external integration to company performance. Merschmann and Thonemann (2011) mengemukan that the uncertainty of the supply chain proved to have a significant effect moderate the relationship of supply chain flexibility to company performance. Richey *et al.* (2009) on the results of his research stating that the constraint of supply chain integration can serve as a moderating variable that strengthen supply chain integration relationship to company performance. Results of research Fynes et al. (2004) showed that the uncertainty of demand and the supplier has a positive and significant impact on the relationship between the quality of the supply chain relationship to the performance of the supply chain.

Based on the description above can be made following research hypothesis:

H9a: The increased integration of the supply chain will enhance the company's performance is moderated by environmental uncertainty

H9b: The increased flexibility of the supply chain will enhance the company's performance is moderated by environmental uncertainty

H9c: Increasingly the practice of supply chain management will enhance the company's performance is moderated by environmental uncertainty

H9d: Increasingly competitive advantage will improve company performance by moderated by environmental uncertainty

2.7. Company's performance

The company's performance according to Yamin and Gunasekruan (1999) is a picture of how big the success of a company can achieve its goaloriented market and monetary goals. The company's performance based on the performance of supply chain management by K. C. Tan, Kannan, and Handfield (1998) is how companies can improve productivity and reduce inventory and cycle time to increase market share and profits for all members of the supply chain. The company's performance can be measured by using two criteria, namely the financial condition and market conditions. Financial condition can be measured by the return on investment (ROI), the profit margin on sales, growth ROI, and sales growth, while market conditions may be measured by market share, market share growth, and competitive position (Stock, Greis, and Kasarda, 2000; Vickery, Calantone, and Droge, 1999; Zhang, 2001).

2.8. Research Concept Framework

Based on the description of the gap of research on previous research and theories that support the concept of research, it can be described a framework concept of

research that can improve competitive advantage through supply chain integration, the flexibility of the supply chain, and the practice of supply chain management to improve the company's performance is like Figure 1:

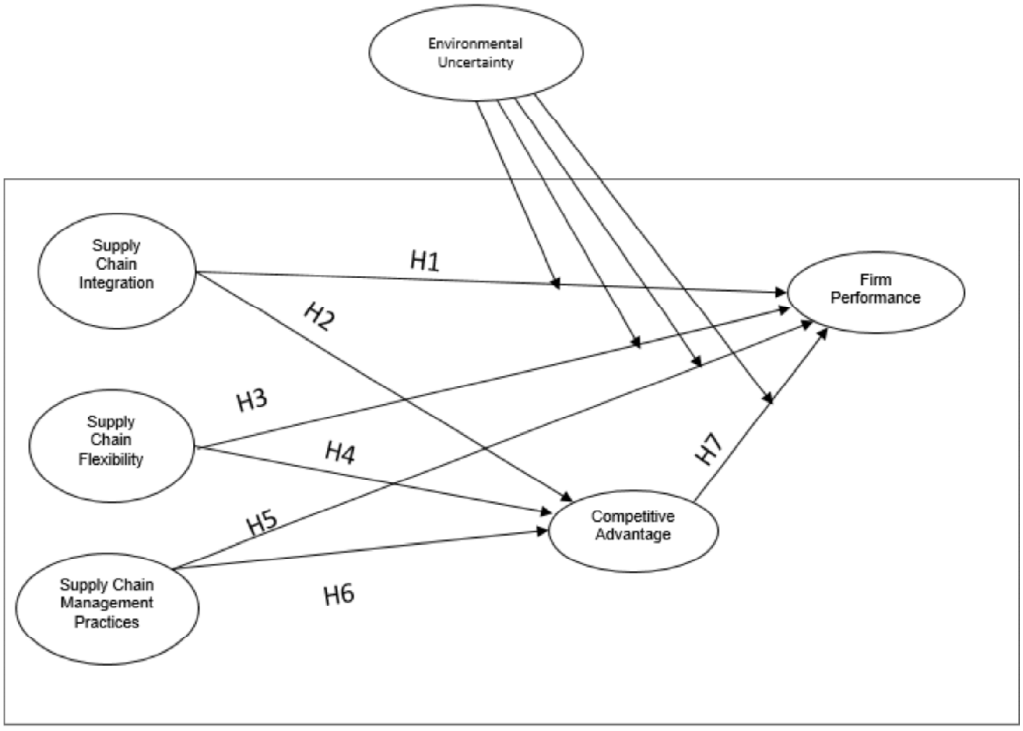

Figure 1. Conceptual Framework Research

Source: Conceptual Framework Research Rakhman*et al.* (2016)

3. RESEARCH METHODS

3.1. Population and Sample Research

The population of this research is manufacturing companies go public in Jabodetabek area as many as 81 companies, comprising 27 companies in Jakarta, 17 companies in Bogor, one company in Depok, Tangerang 25 companies, and 11 companies in Bekasi.

This study used a technique saturated samples. Engineering samples are saturated sampling technique when all members of the population used as a sample or also called census (Sugiyono 2012). The respondents are managers who controls the information about the object of research with the criteria include: (1) the directors and managers as a mediator who has the power to make decisions on

cooperation, collaboration and coordination both between functions (field) in the company as well as those involved in the chain supply with external parties, especially suppliers and customers; (2) directors and managers as well as supervision, agent purchase or senior buyer who have knowledge of details about the practices of supply chain integration, the flexibility of the supply chain, the practice of supply chain management, competitive advantage, the company's performance, conditions of environmental uncertainty and have the knowledge to provide accurate and complete answers to the questions questionnaire.

3.2. Research Data Collection

The process of questionnaires carried out all of the population of as many as 81 manufacturing company went public in Jabodetabek with several stages, namely: (1) contact 81 manufacturing companies went public in the Greater Jakarta by telephone to ask the company into research respondents and an email address the human resources department of companies linked with research, (2) send the permit research and waiting for a response from the company, (3) call back the company for backing followup on approval of research, if after an interval of one to two weeks there has been no response from the company, (4) send questionnaires research to email HRD and HRD will provide to the department associated with research, namely SCM or the purchase or production or PPIC and or HRD that handle research, and (5) call the company in order to remind about charging a research questionnaire that has been sent and is conducted every two weeks if the company has not yet responded to a questionnaire sent. After running for approximately six months (March-August 2015) questionnaires which were accepted are as many as 35 questionnaires out of the 81 questionnaires sent to respondents and in-depth interviews conducted in September-November 2015).

3.3. Research variables

This study has several variables: (1) three independent variables consisting of the integration of the supply chain (X1), the flexibility of the supply chain (X2), and the practice of supply chain management (X3), (2) mediating variables, namely competitive advantage (Y1), (3) the dependent variable, namely the performance of the company (Y2), and (4) moderating variables, namely the uncertainty of the environment (M).

3.4. Data analysis method

3.4.1. Descriptive Statistics Analysis

The analysis aims to interpret the description of the arguments of respondents to the selection statement and statement frequency distribution of respondents from

the data that have been collected. In this study, respondents categorized into five categories using a Likert scale. Each scale has a gradation ratings of very poor / poor to very good / higher as outlined in the answer choice questionnaire. Then describe each study variable, the characteristics of respondents and the general description of the object of research in the form of a statement of reasons to the respondents, the number, average, and percentage.

3.4.2. Method of inferential statistics

Inferential statistical methods which were used in this study are Partial Least Square (PLS) with WarpPlS 5.0. Development of SEM for nonlinear relationships spearheaded by Kenny and Judd (1984) by writing an article entitled "Estimating nonlinear and Interactive Effects of Latent Variabels" stating that simply SEM can be seen as an analytical technique that involves two procedures is factor analysis and multiple regression conducted jointly. While WarpPLS 5.0 software as a tool for processing nonlinear and linear relationship was first developed by Kock (2010) which has the advantage can identify nonlinear relationships between latent variables and correct the path coefficient value based on the relationship.

4. RESULTS AND DISCUSSION

4.1. The characteristics of Respondents

In this study, the sample was 81 manufacturing company went public in Jabodetabek and data collected are as many as 35 companies. Characteristics of respondents aimed to describe the characteristics of the directors / managers of manufacturing companies that have gone public in the Greater Jakarta area that the research sample by: job title, age, gender, tenure, and level of education. The results of the analysis of the description of the characteristics of respondents by job title is most respondents are operational manager / production / PPIC / QC as many as 10 people (28.57%), followed by General Manager / Manager SCM, and supervisor respectively of 4 (11:43%); HRD manager as many as 5 people (14:29%), genaral manager / directors, managers warehousing, purchasing manager and assistant manager respectively of 2 (5.71%), and the rest is marketing manager, manager representative, accounting analyst and analyst, system development respectively of 1 (2.86%). This condition can be explained that the manager has the biggest role in helping the implementation and successful implementation of supply chain management, however did not rule out the role of the office in addition to the manager to help you succeed in applying the concept of supply chain management in a manufacturing company in Jabodetabek.

Based on the age of the respondents aged 40-49 16 (45.71%), followed by between 30-39 years old 9 people (25.71%), 50-59 years old 7 (20:01%), and the rest are between the ages of 20-29 year 3 (8:57%). In general age of the respondents in this study theoretically according to BPS belong to the productive age (15-49 years) and productive (50-64 years), which is to a very productive age amounted to 78.79% and the productive age by 21:21%. Under the conditions of the age of respondents, indicate that most of the directors / managers in manufacturing companies in Greater Jakarta are expected to have the physical ability to work, to think, management skills, and to act effectively and efficiently in the use of factors of production so can improve the performance of the company.

The characteristics of respondents by sex show that the majority of survey respondents are male sex as many as 26 people (74.29%) and females were 9 people (25.71%). Based on years of mostly between 15-21 years as many as 13 people (37.14%), following the work period between 8-14 years as many as 9 people (25.71%), 1-7 years as many as 8 people (22.86%), 22-28 years as many as 4 people (11:43%), and the last 29-35 years as many as one person (2.86%). Seeing the condition of tenure of the respondents are generally more than 5 years to reach 78.79%, so that can be expected in the questionnaire research managers / directors have the knowledge, experience, and a greater understanding and professional in the field of application of the concept of supply chain management in the company, which in turn can enhance the competitive advantage of companies and company performance.

Characteristics of respondents by level of education shows that most educated to degree (S1) as many as 26 people (74.29%), then followed educated graduate (S2) as 6 people (17:14%), SMU / equivalent as much as 2 (5.71%), and the academy as many as one person (2.86%). Seeing the condition of the education level of the respondents of the existing research can be classified in the group of highly educated. Respondents educated owned by the managers / directors who work in manufacturing companies are expected to understand the responsibilities and his duties as a leader in enterprise well, adopting new technologies and information in the production process, read the conditions of environmental uncertainty may affect instability in the process production, and read the conditions of market competition so as to enhance the company's competitive advantage and performance.

4.1. Loading Factor, Average, and AVE Research Variables

The result of the calculation of the value of the loading factor , mean , and the AVE of each variable research using WarpsPLS 5.0 can be seen in Table 4.1 . following:

Table 4.1
Testing Results Loading Factor, Average, and AVE Research Variables

Variabel Penellitian	*Dimensi Variabel*	*Indikator Variabel*	*Estimate Loading*	*Rerata Indikator*	*Variabel*
Integrasi Rantai Pasokan (X1)	Integrasi Internal Rantai Pasokan (X11)	X112. Kerja sama Internal	0.970	4.35	4.30
		X111. Koordinasi Internal	0.962	4.31	
		X113. Kolaborasi Internal	0.948	4.24	
	Integrasi Eksternal Rantai Pasokan (X12)	X122. Kerja sama Eksternal	0.974	3.77	3.81
		X123. Kolaborasi Eksternal	0.938	3.73	
		X121. Koordinasi Eksternal	0.908	3.91	
Fleksibilitas Rantai Pasokan (X2)	-	X22. Fleksibilitas Pengembangan Produk	0.849	3.84	3.66
		X21. Fleksibilitas Pemasok	0.772	3.78	
		X23. Fleksibilitas Produksi	0.766	3.30	
		X24. Fleksibilitas Pengiriman	0.661	3.74	
Praktek Manajemen Rantai	-	X33. Tingkat Sharing Informasi	0.924	3.60	3.72
		X35. Praktek Internal Ramping	0.843	3.84	
		X32. Strategi Hubungan Pelanggan	0.832	4.01	
		X31. Strategi Kemitraan Pemasok	0.804	3.87	
		X34. Kualitas Sharing Informasi	0.787	3.58	
		X37. Integrasi Logistik	0.778	3.88	
		X36. Penundaan	0.598	3.29	
Keunggulan Bersaing (Y1)	-	Y15. Time to Market	0.920	3.44	3.76
		Y16. Pasca Pelayanan	0.749	3.77	
		Y13. Keandalan Penyerahan	0.717	3.92	
		Y11. Penentuan Harga	0.597	3.61	
		Y14. Inovasi Produk	0.562	3.54	
		Y12. Kualitas Produk	0.562	4.28	
Kinerja Perusahaan (Y2)	-	Y21. Pengurangan Biaya	0.921	3.45	3.39
		Y22. Kondisi Keuangan	0.921	3.34	
Ketidakpastian Lingkungan (KL)	-	KL3. Ketidakpastian Permintaan	0.853	2.92	2.63
		KL2. Ketidakpastian Pemasok	0.789	1.98	
		KL1. Ketidakpastian Teknologi	0.104	2.99	

Source: Processed WarpPLS 5.0, 2015

Based on the results of the calculations in Table 4.1. shows that the loading factor for each indicator research variable value is above 0:50 and significant at P-Value of less than 0001, as well as the value of AVE for each variable research above or equal to 0.50 so we can say that the variables of supply chain integration, the flexibility of the supply chain the practice of supply chain management,

competitive advantage, the company's performance , and the uncertainty of the environment can be said to be valid. Only the technological uncertainty indicator loading factor having a value of less than 0.50, but this indicator is not removed because once tested to try to eliminate it , it was not significant in increasing its value AVE, it was decided to continue to be used to reflect the uncertainty of the environment variable.

4.3. Evaluation of Goodness -of -fit Structural Model

The model in this study is said to be fit if the model is supported by empirical data and can meet the criteria of goodness-of-fit structural model . WarpPLS 5.0 provides a measure of the goodness -of -fit to fit the structural model and the overall model that can be seen from the three criteria , namely APC (Average Path Coefficient), ARS (Average R -squared), and AVIF (Average Variance Inflation Factor). The result of the calculation using the research data 5.0 software WarpPLS fit model is obtained, as can be seen in Table 4.2 below :

Tabel 4.2
Testing Results Goodness -of -fit and Overall Structural Model Model

Research Model with Uncertainty Environmental	*Criteria Goodness-of -fit*				
	APC	*P-Value*	*ARS*	*P-Value*	*AVIF*
Uncertainty Technology (KL1)	0.274	0.002	0.528	< 0.001	3.359
Uncertainty Suppliers(KL2)	0.274	0.002	0.528	< 0.001	3.359
Uncertainty Demand(KL3)	0.274	0.002	0.528	<0.001	3.359

Source: Processed WarpPLS 5.0, 2015

The test results with software WarpPLS 5.0 in Table 4.2., The evaluation of goodness-of-fit of the structural model and the overall model of the research shows that the value of APC for a research model with moderating variable environmental uncertainty has a value of APC for 0274 and significant at P-Value 0002, ARS value of 0528 and niali significant at P-value of less than 0001, and amounted to 3.359 AVIF value is less than 5. thus we can conclude the research model is the model fit is good because it has met the criteria of goodness-of-fit of the structural model.

4.3. Direct Impact Hypothesis Testing

Testing the hypothesis and the path coefficient between variables directly influence the supply chain integration, supply chain flexibility, supply chain management practices, competitive advantage, and the company's performance. The test results direct influence can be seen from the path coefficients and P-Value it can be seen in the path diagram Table 4.3. following:

Table 4.3
Coefficient Test Result Line and Direct Impact Hypothesis Testing

Hypo-thesis	*Direct Impact*	*Coefficient Test Result Line*	*P-Value*	*Result*
H_1	Supply chain integration —> firm performance	-0.35	<0.001	Significantat α=0.05 accepted
H_2	Supply chain integration —> competitive advantage	-0.15	0.060	Significant at α=0.10 accepted
H_3	Supply chain felxibility —> firm performance	0.44	<0.001	Significant at α=0.05 accepted
H_4	Supply chain flexibility —> competitive advantage	0.38	<0.001	Significant at α=0.05 accepted
H_5	Supply chain management practices —> firm performance	0.25	0.007	Significant at α=0.05 accepted
H_6	Supply chain management practices —> competitive advantage	0.53	<0.001	Significant at α=0.05 accepted
H_7	Competitive advantage —> firm performance	0.32	0.001	Significant at α=0.05 accepted

Source: Processed WarpPLS 5.0, 2015

Results of testing the effect of supply chain integration of corporate performance can be demonstrated by the path coefficient estimate values of -0.35 and significant at $\alpha = 0.05$. That is an increase of supply chain integration and real opposite to the improved performance of the company, so if there is an increase in performance of the supply chain integration will lead to decreased performance. Thus the research hypothesis (H1) that is proposed in this study contradict the reality of what happened on the object and results of this study differ from previous research (Boon-Itt & Wong, 2011; Flynn, Huo, & Zhao, 2010; C. Gimenez & Ventura, 2003; Cristina Gimenez and Ventura, 2005; Han, Trienekens, & Omta 2009; Hatani, 2013; Kim, 2006b; Ou Liu, Hung, & Yen, 2010; Rajaguru & Matanda, 2009; Richey Jr., Chen, upreti, Fawcett, & Adams, 2009) which has the result of path coefficients are positive and significant.

Results of testing the effect of supply chain integration to competitive advantage can be demonstrated to estimate the value of path coefficient of -0.15 and significant at $\alpha = 0.10$. That is an increase of supply chain integration and significant in contrast to the increasing competitive advantage, so if there is an increase in performance of the supply chain integration will lead to reduced performance of competitive advantage. Thus the research hypothesis (H2) which is proposed in this study contradict the reality of what happened on the object of research.

Reasons to support the results of this study based on interviews with respondents are on the program of supply chain integration that has two indicators of internal integration of the supply chain and external integration of the supply chain, particularly in the external indicators of the supply chain as measured through coordination, cooperation, and collaboration, respondents felt confident that with the establishment of collaborations with suppliers that are increasingly open information about the design of new products, information sales forecasting, and inventory of raw materials may increase the competitive advantage of the fact that the suppliers can work together with more than one company, so the information obtained from one company has the possibility to be conveyed to a competitor. Thus the company will be more difficult to create competitive advantage and could ultimately degrade the performance of the company.

Another reason to support the results of the study is that there is intense competition among similar companies, declining purchasing power of the consumer to the product resulting from the economic crisis at the time of the study (2015), a manufacturing company went public in Jabodetabek make a huge investment to buy the machine high tech, causing the value of the return on investment (ROI) of her at the time the study was low, the lack of implementation of government regulation on love domestic products so that the products from abroad can easily fit into the country it needs to compete products domestically, the raw material manufacturing company went public in Greater Jakarta are mostly imported, thereby increasing the cost of production, and manufacturing company went public in Jabodetabek also implemented several policies related to the cost of inventory the company implemented cost ratio of inventory so that from year to year tend to not experience significant changes, while for the cost of shipping the product to the consumer companies implement cooperation with third parties so that shipping costs are also less likely to change from year to year, other than that some companies manufacturing own modes of transport themselves and their customers are mostly single agent so that the transportation costs are likely stable from period to period.

The test results influence the flexibility of the supply chain and supply chain management practices on competitive advantage is a positive and significant at the $\alpha = 0.05$ (H4 and H6). Likewise, the results of testing the flexibility of the supply chain and supply chain management practices and company performance has a positive and significant influence on $\alpha = 0.05$ (H3 and H5). Competitive advantage and significant positive effect on $\alpha = 0.05$ to company performance (H7). It can be concluded that the hypothesis H3, H4, H5, H6 and H7 supports the theory put forward Prahalad *et al.* (1998), Duclos *et al.* (2003), and supporting research (Pujawan, 2004; Sanchez and Perez, 2005; Kumar *et al.*, 2006; Stenvenson and Spring

2007; Candace *et al.,* 2011; Soon and Udin, 2011; Hatani, 2013; Fantazy *et al.,* 2009; Sanchez and Perez, 2005), Donlon (1996), Tan *et al.* (1998), Alvarado and Kotzad (2001), Tan *et al.* (2002), Chen and Paulraj (2004), Min and Mentzer (2004).

4.4. Mediation Effect Hypothesis Testing

Assessment of the effect of mediation aims to detect the position of competitive advantage as an intervening variable in the model. Testing the mediation was conducted to determine the nature of the relationship mediating variables, namely whether these variables are mediating perfect (complete mediation), mediation part (partial mediation), and not as a mediating variable. Testing the effect of mediation by using software tools WarpPLS 5.0 is done through the path coefficient difference. The test results with mediating variables competitive advantage can be seen in Table 4.4.

Table 4.4
Results Testing with Variable Mediation Competitive Advantage

Model	*Relationship Variabels*	*Path Coefisient*	*P-Value*	*R-Square*
direct effect	IRP —> KinPersh	-0.4	<0.01	0.39
	FlexRP —> KinPersh	0.56	<0.01	
	PmnjRP —> KinPersh	0.42	<0.01	
The effect of mediation	IRP —> KinPersh	-0.36	<0.01	0.44
	IRP —> KB	-0.15	0.06	
	KB —> KinPersh	0.32	<0.01	
	FlexRP —> KinPersh	0.44	<0.01	
	FlexRP —> KB	0.38	<0.01	
	KB —> KinPersh	0.32	<0.01	
	PmnjRP —> KinPersh	0.25	<0.01	
	PmnjRP —> KB	0.53	<0.01	
	KB —> KinPersh	0.32	<0.01	

Source: Processed WarpPLS 5.0, 2015

The test results on the performance of supply chain integration company with a competitive advantage mediating variables in Table 4.4 shows that the value and significance of the path coefficients are significant direct effect on the value of $\alpha = 0.05$ is equal to -0.40. Then, after the model included variables mediating competitive advantage, then the value and significance of the path coefficients are significant indirect relationship to the value of $\alpha = 0.05$. If the analysis of both models, the value of the coefficient paths direct effect before and after the mediation is decreased from -0.35 -0.40 be significant at p-value <0.001, so the nature of supply chain integration mendiasi influence on the performance of companies through competitive advantage is a partial mediation (partial mediation). The results means

that the relationship between the integration of the supply chain may affect the company's performance can also be through competitive advantage.

The results of testing the flexibility of the supply chain to the company's performance with competitive advantage mediating variables in Table 4.4. indicates that the value and significance of the path coefficients are significant direct effect on the value of $\alpha = 0.05$ is 0.56. Then, after the model included variables mediating competitive advantage, then the value and significance of the path coefficients are significant indirect effect on the value of $\alpha = 0.05$. If the analysis of both models, the value of the coefficient paths direct effect before and after the mediation is decreased from 0.56 became 0.44 significant at the p-value <0.001, so the nature of mendiasi influence the flexibility of the supply chain to the company's performance through competitive advantages is mediation partial (partial mediation). The results means that the relationship between supply chain flexibility could affect the company's performance can also be through competitive advantage.

The test results of supply chain management practices on the performance of companies with competitive advantages mediating variables in Table 4.4. indicates that the value of path coefficient of 0.42 and significant at $\alpha = 0.05$ value. Then, after the model included variables mediating competitive advantage, then the value and significance of the path coefficients are significant indirect effect on the value of $\alpha = 0.05$. If the analysis of both models, the value of the coefficient paths direct effect before and after the mediation is decreased from 0.42 to 0.25 significant at p-value = 0.007, so the nature of mendiasi influence the practice of supply chain management and company performance through competitive advantages is partial mediation. The results means that the relationship between supply chain management practices can affect the company's performance can also be through competitive advantage.

4.4. Moderation Effect Hypothesis Testing

The test results moderating variable environmental uncertainty and the path coefficients moderating variables influence can be seen in Table 4.5. following :

The test results moderating variable environmental uncertainty on supply chain integration effect on corporate performance is not significant at p-value 0.361. This means that the relationship of supply chain integration of corporate performance does not depend on the conditions of environmental uncertainty.

Based on the facts on the ground, the management of manufacturing companies went public in the Greater Jakarta to improve corporate performance through the integration of the supply chain do not depend on the conditions of environmental uncertainty. Company to improve its performance only focuses on integration of

Table 4.5
Results Testing Environment Variables Moderation Uncertainty Relation to the Supply Chain Integration, Flexibility Supply Chain, Supply Chain Management Practices Against Competitive Advantage and Corporate Performance

Moderation	*Goodness-of-fit Model*	*Correlation*	*Interaction Variables*	*Interaction Coefficient*	*P-Value*	*Result*	*Conclusion*
ENVIRONMENTAL UNCERTAINTY	APC=0.223; P-Value =0.038; ARS=0.549; P-Value < 0.001; AVIF = 3.051	IRP —> KiPrhsn	KL_Tek*IRP	- 0.034	0.361	Reject Ha	Not Moderation
		FlexRp → KiPrshn	KL_Tek*FlexRP	- 0.212	0.017	Accepted Ha	Negative Moderation
		PMnjRP —> KiPrshn	KL_Tek*PMnjRP	0.244	0.008	Accepted Ha	Positive Moderation
		KB —> KiPrshn	KL_Tek*KB	0.308	0.001	Accepted Ha	Positive Moderation

Source: Processed WarpPLS 5.0, 2015

internal and external supply chain to make a huge investment to purchase machinery and high-tech equipment to support the production process according to customer wishes. Purchase high-tech machines have the capacity to produce en masse, quality, productivity and takes a long time to reach the break even point, so that in the event of environmental uncertainty caused by technological change in the period of the investment will not have an influence on the relationship between supply chain integration with the company's performance. Another cause that the uncertainty of the environment can not affect the relationship of supply chain integration and performance of the company is the company has to have reliable suppliers and established a good relationship in the long term and the company has regular customers who act as a single agent. Such investments could increase the impact of the cost, time set-up, and a large production capacity (not lean). Therefore, it can cause a decrease in the company's performance through the reduction of financial condition as measured by return on investment (ROI), sales growth, ROI growth and corporate profit margins.

The test results moderating variable environmental uncertainty on supply chain flexibility influence on corporate performance is negative and significant at p-value 0.017. This means that environmental uncertainty may weaken the relationship of supply chain flexibility to company performance.

The more instability technology, suppliers, and demand could negatively impact the flexibility of product development, fleksilitas suppliers, production flexibility and delivery flexibility. This shows that with the conditions of technology, suppliers, and demand is not stable, then the company in producing goods tend to be more cautious both in the number according to the production plan and design products according to customer wishes. Thus it can be said that the company more flexibility in product development, production, delivery of goods to customers, and delivery of raw materials from suppliers due to environmental conditions as amended from time to time either in terms of technology, suppliers and demand from customers.

The influence of environmental conditions are unstable can degrade the performance of companies measured through cost reduction, reduction of waiting times, reduction of shortage of raw materials, reduction of shipping costs both raw materials from suppliers and products to customers, the value of the return on investment (ROI), improved ROI, growth sales, and profit margins of the company.

The test results moderating variable environmental uncertainties on the impact of supply chain management practices on firm performance is positive and significant at p-value 0.008. This means that the relationship between supply chain management practices on business performance depends on the uncertainty of the environment.

The more instability changes in technology, suppliers, and demand can have a positive impact on the level of information sharing, internal lean practices, customer relations strategy, strategic supplier partnerships, sharing information quality, logistics integration, and delays. This shows that with the conditions of technology, suppliers, and demand is not stable, then the company in producing goods tends to further improve the performance of the practice of supply chain management through production quantities are effective and efficient, the level of sharing of information, quality of information sharing, internal practice slender, logistics integration, customer relationship strategy, strategic supplier partnerships, and a delay in accordance with the wishes of the customer.

The test results moderating variable environmental uncertainty on the effect of competitive advantage to the company's performance is positive and significant at p-value 0.001. This means that the relationship between the competitive advantage of the company's performance depends on the uncertainty of the environment.

The more instability changes in technology, suppliers, and demand can have a positive impact on product quality, time to market, reliability of delivery, product innovation, pricing, and post services to suppliers. This shows that with the conditions of technology, suppliers, and demand is not stable, then the company in producing goods tends to further improve product quality, time to market, reliability of delivery, product innovation, pricing, and post services to suppliers.

5. RESEARCH IMPLICATIONS

The implication of this study is to strengthen the theory of SCM (Supply Chain Management) developed by Oliver and Weber (1982), Cooper *et al.* (1997), Lambert *et al.* (1998), Halldorsson *et al.* (2007), Pujawan (2004), Lina and Elitist (2008), Heizer and Render (2011), Boon-Itt and Wong (2011), Flynn *et al.* (2010), Awad and Nassar (2010), and Krajewski and Maholtra (2010) which states that supply chain management is the process of synchronizing the company with suppliers and customers to match the flow of materials, services, and information based on customer demand through a philosophy of integration of both internally and externally measured through coordination, cooperation, and effective collaboration in the processes of the supply chain from upstream to downstream.

The results of this study reinforce the proposition results of Li *et al.* (2005), Alvarado and Kotzab (2001), Chen and Paulraj (2004), Lee (2004), Min (2004), and Tan *et al.* (2002) which states that the practice of supply chain management is a variable multi-dimensional that includes both upstream (customer) and downstream (customer) which includes strategies supplier partnerships, strategic

customer relationships, share information, quality of information sharing, internal practice lean, delay, and logistics integration.

The results of this study support the research Mensah *et al.* (2014), Youn et al. (2013), Ince *et al.* (2013), Li *et al.* (2006), and Wiengarten *et al.* (2010) stated that the practice of supply chain management and significant positive effect on firm performance; and research results Thatte *et al.* (2013), Li *et al.* (2006), and Thatte (2007) states that the practice of supply chain management is positive and significant impact on competitive advantage of companies.

The practical implication of this study is to provide an understanding to the managers of manufacturing companies go public in the Jabodetabek on conceptual integration of structural relationship of supply chain integration, supply chain flexibility, and practice of supply chain management to improve competitive advantage and company performance by considering the conditions of environmental uncertainty.

6. RESEARCH CONTRIBUTIONS

This research is expected to contribute to the development of insight into the conceptual and theory regarding the implementation of supply chain integration, the flexibility of the supply chain, and the practice of supply chain management in an effort to improve the performance of companies either directly or indirectly (mediation) through competitive advantage in manufacturing industries went public in Jabodetabek as well as the uncertainty moderated by environmental conditions that are based on the theory of operations management, supply chain integration, supply chain flexibility, and supply chain management practices.

These research findings contributed to the theory of moderating variables, namely (1) variable environmental uncertainties not moderation for the relationship between supply chain integration to company performance, (2) variable environment uncertainty as moderating negative for relationships flexibility of the supply chain to the company performance, and (3) variable environmental uncertainty as moderating positive relationship of supply chain management practices, and competitive advantage to the company's performance.

7. RESEARCH ORIGINALITY

Findings from this study provide a configuration in the development of structural models for the effect of supply chain integration, supply chain flexibility, and supply chain management practices on firm performance mediated by competitive advantage and moderated by the uncertainty of the environment by using WarpPLS 5.0. Furthermore, research findings can prove that the conceptual model is the

integration between the effect of supply chain integration, the flexibility of the supply chain, and the practice of supply chain management can impact directly and indirectly significantly through the competitive advantage of the company's performance moderated by the uncertainty of the environment.The researchers previously tested conceptual model separately. The test results are able to provide empirical evidence that the competitive advantage variables can serve as a partial mediation positively and significantly. The results are also able to provide empirical evidence that variable environmental uncertainty has has three results is not moderation, moderation of negative and positive moderation.

The results of this study provide evidence that by adding a variable practice of supply chain management to the model of conceptual relationship between competitive advantage and company performance, is able to provide empirical evidence that the test results show the practice of supply chain management is positive and significant impact on competitive advantage and can increase the value of R-square models, namely froam 0.39 became 0.50.

Based on the proposition of the literature review and Paulraj Chen (2004) that indicators of logistics integration can be an indicator of variable supply chain management practices. The results showed indicators proven to reflect the integration of the logistics supply chain management practice variable with a value of loading factor of 0.778 and significant at the P-Value less than 0.001.

8. RESEARCH LIMITATION

Limitations in this study are: (1) The object of research is limited to manufacturing companies that went public in jabodetak with respondents of the directors / managers of companies. Thus the results can only be generalized to the manufacturing industry that went public and is located in the Greater Jakarta area, (2) the number of respondents that can be collected only 35 companies out of 81 companies, and (3) data analysis is only based on survey data is limited to the presentation of data one point in time (cross sectional) conducted testing of the relationship between the variables, the results are only valid on the condition of the time.

9. CONCLUSION

The conclusion of this study is to include: (1) the impact of supply chain integration to competitive advantage and performance of the manufacturing company went public in Jabodetabek is inconclusive, (2) the flexibility of supply chain positive and significant impact on competitive advantage and firm performance, (3) chain management practices supply positive and significant effect on the performance of companies, (4) variable competitive advantage can function as a mediating part

(partial mediation) for the connection of supply chain integration, the flexibility of the supply chain, and the practice of supply chain management to company performance, (5) the competitive advantage of positive effect and significant impact on the performance of the company, and (6) environmental uncertainties as (1) instead of moderating the relationship of supply chain integration to company performance, (2) moderate negative correlation flexibility of the supply chain to the company performance, and (3) moderation positive for relations practice supply chain management and competitive advantage to the company's performance.

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