The Effect of Organization Culture and Uncertainty in Supply Chain Management - The Albanian Beer Industry

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SUMMARY

Although research interest in supply chain management is growing, no such research has been done in Albania. This paper is one of the first to investigate supply chain management practices in the Albanian beer industry and the effect of supply chain uncertainty and organizational culture on supply chain management. Semi-structured interviews were conducted with the managers of the main beer companies. The results show that a high level of supply chain uncertainty does not always bring high engagement in supply chain management, as cultures with internal orientations impose limits on the execution of supply chain management practices.

Keywords: Supply chain management; Supply chain members, Supply chain uncertainty; Organizational culture; Albanian beer producers

Journal of Economic Literature (JEL) code: M1, L6, L7, L8, Z1

INTRODUCTION

Supply chain management is a concept widely discussed in academic articles (e.g. Boyer & Stock, 2009) and by practitioners (Naslung& Williamson, 2010). Interest in supply chain management increased after 1980 for several reasons. Firstly, because at that time only a few companies were vertically integrated, and they realized that they could no longer gain a competitive advantage alone, but they had to collaborate with suppliers and customers (Lummus&Vokurka, 1999).

Another reason is the increased awareness of the many benefits of supply chain management, which include: improvement in ROI (return on investment), low inventory levels (Boyer & Stock, 2009), increased customer and supplier satisfaction (Myers, 2010), improvement in profit and market share (Myers & Cheung,2008) and many more. Summarizing, the benefits of supply chain management relate to cost reduction and improvement of relationships with the chain members**.**

The third reason is the high uncertainty of the supply chain. One of the key sources of uncertainty is demand uncertainty, as it brings unsatisfied customers that in turns affects the profit and the reputation of the company. Supply chain management can reduce demand uncertainty as it facilitates forecasting. Firms that engage in supply chain management work together and by doing so, they have better knowledge about their competition and market demand, making forecasting easier (Lummus&Vokurka, 1999). The literature review section will describe how supply chain management initiatives can reduce the other sources of uncertainty.

A recent report concluded that uncertainty is affecting the supply chain in four ways: by adding costs, increasing inventory levels, increasing lead times and reducing speed to markets (Butcher, 2011). The impact of these negative effects is sometimes felt in the long term, so reducing supply chain uncertainty is of strategic importance for companies. But does engagement in supply chain management reduce uncertainty in every situation or only under certain circumstances? This paper will try and present an answer to this question.

Research aim and propositions

The aim of this research is twofold: first to investigate the supply chain management practices used by Albanian beer producers and second, to analyze the effect of supply chain uncertainty and organizational culture on supply chain management. The research is focused on Albanian beer producers.

There are four main reasons why I chose Albanian beer producers for this research.

Firstly, the consumption of domestic beer is increasing in Albania, due to the increase in quality and variety with reasonable prices (Chan-Halbrendt&Fantle-Lepczyk, 2013).

Secondly, the supply chain of the beer producers is global and so they can benefit more from engagement in supply chain management.

Thirdly, although interest in supply chain management is growing, no research has been done in the Albanian beer industry.

Lastly, the beer industry is an interesting industry as there are five big beer producers in a small country like Albania and they are surviving in a saturated market.

The global crisis of 2008 amplified the sources and level of supply chain uncertainty (Malik &Ruwadi, 2011). At the same time interest in supply chain management increased, as it helped in reducing supply chain uncertainty (described in detail in the literature review). This observation suggests the following proposition:

Proposition 1: Engagement in supply chain management increases when supply chain uncertainty increases.

Supply chain management requires sharing information, joint decision making, commitment, trust, and respect (Laskowska-Rutkowska, 2009). In other words, supply chain management requires focusing on building and managing relationships with the others. This approach is easier for cultures with external orientations. Cameron and Quinn (2011) define cultures with external orientations as the ones focused on interacting with others outside their boundaries. This discussion suggests the following proposition:

Proposition 2: Organizational cultures with an external orientation facilitate the execution of supply chain management practices**.**

The outline of the paper is the following: after the introduction section, there is a brief description of the Albanian beer industry, continuing with the relevant literature review regarding supply chain management, supply chain uncertainty, organizational culture and the relation of the last two to supply chain management. Then I will explain the methodology used. After the methodology section, I will discuss the findings, and I will conclude with limits of the study and recommendations for managers and future research.

THE ALBANIAN BEER INDUSTRY

In Albania, beer was first produced in 1928 with the establishment of Korca Beer by the investor Umberto Umberti (Italy) and Selim Mborja from Korca. There was a production capacity of 20,000 hl beer/year (1 hectoliter = 100 liters). In 1960, Birra Tirana was founded, with a capacity of 50,000 hl beer/year. After 1991 three other beer producers – Stela, Norga, and Kaon – and 80 mini-breweries entered the market (Kume, 2011).

The Albanian beer market has grown, even after the economic crisis began. This increase is shown by the improvement in the quality of Albanian beer, increased consumption of domestic beer compared with imported beer due to differences in price, an increased variety of beers and huge innovations in technology (Chan-Halbrendt & Fantle-Lepczyk, 2013).

The main players in the Albanian beer market are large and medium manufacturers, small producers that compete on low prices, and imported beers.The large and medium manufacturers are dominated by five Albanian companies: Tirana Beer, Stela Beer, Korca Beer, Kaon Beer and Norga Beer. Tirana beer is a joint stock company with a long tradition in the Albanian market. It is the company that holds the highest market share, thanks to its long presence in the Albanian market (since the 1960s). Korca Beer is wellknown by customers because of its special taste. Stela beer is the second largest producer after Tirana Beer. Kaon and Norga beers are two new brands that entered the Albanian market after the 1990s and were able to obtain a share of the beer market (Kume, 2011).

LITERATURE REVIEW

Supply chain management

According to the traditional definition, supply chain management has to assure supply at the lowest initial purchase price. Based on this view, companies cannot allow their supply chain partners to become very important; instead, they must have multiple trading partners and the fierce competition based on price and performance will choose the best (Spekman et al., 1998).

Christopher (2010) lists the three main changes that increase the importance of supply chain management in recent years. Firstly, there is much understanding of the role of supply chain management in creating sustainable competitive advantage. The second change is that supply chain management is not just an extension of logistics management, but is more about managing relationships with the supply chain members. The third significant change is the transition from a stable business environment to a dynamic and less predictable one. This transition requires agile and adaptable supply chains.

None of the changes, mentioned above, support the traditional view of supply chain management. The modern definition of supply chain management that will be adopted in this paper is: "The management of upstream and downstream relationships with suppliers and customers in order to deliver superior customer value at less cost to the supply chain as a whole" (Christopher, 2010: 14).According to this definiton, the focus of supply chain management is on the relationship with the supply chain members, trying to achieve the best outcome for everyone.

Supply chain and supply chain management are crucial concepts in the paper, so a clear-cut interpretation should be provided, after the detailed discussion in the previous paragraphs. The supply chain includes all the activities related to moving goods from the raw materials stage through to the end users, while the role of supply chain management is to move goods quickly through the stages, by delivering more value (Christopher, 2010).

Engagement in supply chain management requires collaboration that is easier when you have the right partners, so an important aspect of supply chain management is the selection of supply chain partners. According to Barrat (2004), supply chain collaboration means sharing joint objectives, intellectual agility, trust, respect and commitment, to get the best outcome for each member. The last three factors are the ones that companies value most when they select their partners (Spekman et al., 1998). Prime selection is done based on their reputation, quality issues, financial performance and past experience with the company (Duffy, 2014). Normally selection criteria will vary for each industry and company, but criteria like economic benefits, tax and environmental advantages, a high degree of integrity and the existence of synergy are the most important criteria for selecting the supply chain partners (Spekman et al., 1998).

After the selection of the appropriate partners, companies must decide the level of engagement in supply chain management. Co-operation is the starting point for supply chain management. Companies that cooperate have few suppliers and long-term contracts with suppliers and

customers, but cooperation is not sufficient, so the next transition is to coordination, when real-time information is exchanged with the trading partners. For this they use mechanisms like JIT (just in time), EDI (exchange data information) and flexible manufacturing cells. The highest level is collaboration, based on trust and commitment with the supply chain members. In this phase companies exchange information in realtime, jointly make decisions, and share a common vision about the future (Spekman et al., 1998).

As was mentioned, the first step in supply chain management is cooperation, and the last step is collaboration. The main reason to engage in supply chain management is to enjoy the benefits of collaboration. The benefits of supply chain collaboration are more than just improved efficiency and effectiveness, including increased customer satisfaction (Myers, 2010), improved profits and market share (Myers & Cheung,2008), and reduced lead time and improvement in innovation (Spekman et al., 1998). Other reasons mentioned in the literature include political and environmental reasons (Brammer et al., 2011), tax incentives (Spekman et al., 1998) and more accurate and timely information (Whipple & Russell, 2007).

Supply chain uncertainty

A recent report concluded that uncertainty is affecting supply chain in four ways: by adding costs, increasing inventory levels, increasing lead times and reducing speed to markets (Butcher, 2011). The impact of these negative effects is sometimes felt in the long term, so reducing supply chain uncertainty is of strategic importance for companies. Strategies used by them to reduce uncertainty vary from building a flexible, aligned and agile supply chain (Lee, 2004), increasing the resilience of supply chains (Sheffi, 2005), or postponement and a flexible supply base (Tang, 2006). All these strategies require strong collaboration with the supply chain members, which will result into requiring continuous engagement in supply chain management practices. Many companies acknowledge their success to their relationships with their suppliers and buyers (Myers, 2010).

Lancaster et al. (2011) argue that the main sources of uncertainty can be divided into three groups: uncertainty that come from the focal company (internal organizational uncertainty), internal supply chain uncertainty that comes from the relations with the supply chain members, and external uncertainties that come from factors outside the supply chain.

This paper is focused on the internal supply chain uncertainty. Chen &Paulraj (2003) argue that internal supply chain uncertainty can be attributed to three sources: supplier uncertainty; demand uncertainty, and technology uncertainty. Supply uncertainty is related to indicators of quality, timeliness and the inspection of supplier requirements. Demand uncertainty refers to fluctuations and variation in demands, while technology uncertainty is connected with technological changes within the industry.

All the three phases of supply chain management – co-operation, coordination and collaboration – help to reduce uncertainty deriving from supply, demand and technology. Supply and demand uncertainty depends on demand forecast and supplier reliability (McLaren et al., 2005).As we move from one phase of supply chain management to another, more information is shared, and all the supply chain members closely work together, by facilitating forecasting (Spekman et al., 1998). More accurate forecasting helps reducing demand and supply uncertainty. By collaborating with suppliers, long-term relationships can be built, which in turns increases supplier reliability. Supply chain management initiatives also can reduce technology uncertainty, as the continuous sharing of information makes more visible the recent trends in technology (Boon & Wong, 2011).

Organizational culture

Hofstede et al. (2010: 17) define organizational culture as the "collective programming of the mind, which makes members of one group or category of people different from those of another."

Cameron and Quinn (2011) developed a competing value framework to study organizational culture. This framework focuses on two main dimensions. The first dimension differentiates criteria based on flexibility and dynamism versus the other criteria, based on stability, order and control. The second dimension differentiates criteria based on internal orientation versus those based on external orientation. These two dimensions are the main issues in supply chain management, so this framework is the most appropriate for examining the relationship between the organization culture and supply chain management.

From the combination of the two dimensions, four types of organizational culture arise: hierarchy culture, market culture, clan culture and adhocracy culture. The characteristics of each type of culture are presented in Table 1.

Table 1
The competitive value framework

Dimensions	Internal orientation	External orientation
Flexibility	Clan culture Shared values and goals Cohesion Collaboration Teamwork Main objectives are long term benefits and individual development Ideal for uncertain environment	Adhocracy culture Flexible Risk taking Adaptable to new opportunities Innovative Appropriate for hyper-turbulent environment Main objective is being at the leading edge of new product, services and knowledge.
Stability	Hierarchy culture Clear lines of decisionmaking Multiple hierarchical levels Formalized procedures and rules Conservatism Main objectives are stability, effectiveness and efficiency	Market culture Oriented toward the external environment High competitiveness Main objectives are profitability, secure customer base and strategic positioning

Source: Adapted from Cameron and Quinn (2011)

Supply chain management requires collaboration, which in turns requires membership, trust, commitment and sharing information (Laskowska-Rutkowska, 2009).There is little evidence in literature about the type of culture that makes the supply chain management process easier in organization.

METHODOLOGY

From the main five Albanian beer producers, only four become part of the study, as the managers of one of the companies did not agree to provide information about the topics of the research and be part of this study.

I conducted semi-structured interviews with the managers of each of the four companies. The persons interviewed were purchasing managers, a sales manager, and in one case the owner of the business. All interviews were conducted face to face, and the confidentiality of data was promised. I prepared a guide questionnaire to support the semi-structured interviews, which is presented in Appendix 1. It had three main parts: supply chain management practices, supply chain uncertainty, and organizational culture.

Beer is a product produced by process industry. According to Lee (2002), for this type of product, the best supply chain management techniques in presence of uncertainty are a reliable supply source, information sharing, synchronized planning, and process control. Based on this discussion, I decided to organize the first part of the questionnaire into three rate scale questions and open questions. The open questions were about the supply chain management practices adopted by the companies in terms of collaboration with suppliers, collaboration with customers and information sharing. The first rate scale question lists some techniques of supply chain management(related to this type of product) and the participants were asked to give an evaluation from 1 to 5, where 1= *do not use the practice* and 5= *use that practice always*. The second rate scale question was about the main reason to engage in supply chain management. A list of reasons was presented, and the participants were asked to give an evaluation from 1 to 5, where 1= *strongly disagree* and 5= *strongly agree*. The third rate scale question was about the reasons for selecting the supply chain partners, as reliable supply sources and partners are crucial for the management of the beer supply chain. Like in the first and second question, a list of reasons was presented, and respondents were asked to give an evaluation from 1 to 5. The interviewees were free to mention other reasons that were not in the questionnaire.

To measure supply chain uncertainty, I used the study of Chen and Paulraj (2003). As mentioned in the literature review, they identified three sources of uncertainty: supply, demand and technology uncertainty. The authors for each type of uncertainty provide a list of items (see the guide questionnaire in Appendix 1). The respondents were asked to give an evaluation from 1 to 5, where 1= *strongly disagree* and 5= *strongly agree*, to each item. Regarding supply uncertainty, a total score of 10 signifies that the suppliers fulfill all the requests and offer materials of consistent quality, so the supply uncertainty is low. An evaluation of 25 for the second dimension (where the respondent evaluates with the maximum points all of the five items) is related with high demand uncertainty. Lastly, high technology uncertainty relates with a total evaluation of 20 (in the case when the respondents evaluate all four items with the maximum points). The scores for each source of uncertainty were compared with the maximum scores, to evaluate the level of uncertainty for the three sources.

The last part focused on organizational culture, and consisted of open questions.

Academics evaluated the guide questionnaire, and I tested it on one of the firms participatingin the study. Some questions were improved and changed based on the feedback of the academics and the results of the first interview.

The most relevant ethical issues for this research were: confidentiality of data, avoiding causing harm and lacking respect, informed consent and promise to provide the participant with a copy of the study.

RESEARCH FINDINGS AND CONCLUSIONS

The name of the beer producers will not be mentioned as they asked to beanonymous, so we will call them Beer producer 1, 2, 3 and 4.

Reasons to engage in supply chain management

Table 2 summarizes the most and least important reasons to engage in supply chain management mentioned by the respondents.

Table 2
Reasons to engage in supply chain management

Beer producers	**What are the main reasons to engage in supply chain management?**	
	The most important	*The less important*
Beer producer 1	Increase profits Satisfy customer and supplier requests Secure reliable supplier and market for the product	Political reasons Environmental implications Tax implications
Beer producer 2	Increase profits Increase customer satisfaction Secure reliable supplier and market for the product Gain a strategic positioning in the market	Political reasons Improved productivity Tax implications
Beer producer 3	Increase profits Increase customer satisfaction Secure reliable supplier and market for the product Gain a strategic positioning in the market Improve productivity Reduce time to enter the market	Political reasons Tax implications
Beer producer 4	Reduce time to enter the market Improve productivity Environmental reasons	Political reasons Tax implications Increase customer satisfaction

The information suggests that Albanian beer producers focus more on the cost reduction aspect of supply chain management. According to them the main reasons to engage in supply chain management are: to increase profits, improve productivity, secure reliable suppliers and markets for the product, and increase customer satisfaction. The less important reasons mentioned by all are tax and political reasons. They argue that engaging in supply chain management for political reasons will destroy their reputations.

Beer producer 4, very differently from the others, argued that one of the main reasons for them to engage in supply chain management is environmental implications, while customer satisfaction is not an important reason. It is clear why they are in financial difficulties.

Supply chain partner selection

Table 3 summarizes the findings of what participants consider important when selecting a supply chain partner.

Table 3
Supply chain partner selection criteria

	What are the main reasons for selecting the supply chain partners?	
	The most important	*The less important*
Beer producer 1	Is reliable Has been reliable in the past with us Is committed to us Offers economic benefits Helps to reduce the production costs Helps to reduce the workforce cost	Offers political advantages Offers environmental advantages
Beer producer 2	Is reliable Has a high degree of integrity Has a good reputation Has been reliable in the past with us Offers economic benefits Improves our competitive position Helps to reduce the production costs	Offers political advantages Offers tax advantages Offers environmental advantages
Beer producer 3	Is reliable Offers economic benefits Offers tax advantages Offers environmental advantages Helps to reduce the production costs	Offers political advantages Has a high degree of integrity
Beer producer 4	Is reliable Has a high degree of integrity Synergy exists between us Offers environmental advantages Helps to improve the competitive position	Offers tax advantages Offers political advantages Offers economic benefits

All of the beer producers seek members that are reliable and help to reduce the production costs. They do not consider tax and political advantages as important criteria. Beer producer 4, very differently from the others, does not select the supply chain members based upon the economic advantages they offer.

Supply chain practices

The suppliers of many beer producers are unique and strategic; sometimes they have the same supplier, which is consistent with the findings from the previous part (the most important selection criteria for supply chain members is reliability). Having strategic suppliers requires building strong relationships with them, which in turn requires collaboration. But the beer producers are engaged very little in supply chain management. There is little collaboration, synergy and information sharing between the supply chain members.

Supply chain members do not possess software to exchange information in real time with suppliers and customers due to the high cost of implementing the software. Suppliers and special customers are not accustomed to use software and to provide information for inventory level, price etc., considered by them to be confidential and strategic, to the supply chain members. The Albanian beer producers are at the cooperation stage of supply chain management (see the literature review section), which is the starting stage of engagement in supply chain management.

Supply chain uncertainty

The sum of the evaluations given from the respondents for each type of uncertainty is presented Table 4.

Table 4
Ratings for supply chain uncertainty

Beer producers	**Supply uncertainty (out of 10)**	**Demand uncertainty (out of 25)**	**Technology uncertainty (out of 20)**
Beer producer 1	7	19	13
Beer producer 2	8	16	12
Beer producer 3	9	11	8
Beer producer 4	10	6	10

The data show that supply uncertainty is low for all the beer producers. The demand uncertainty is high for the first beer producer, at medium levels for the other two beer producers and low for the fourth beer producer. Lastly, technology uncertainty is at medium-low levels. The overall supply chain uncertainty is at high-medium levels for the first three producers and at low levels for the last producer.

Beer producer 1 has the highest level of supply chain uncertainty in comparison with the other beer producers, but its engagement in supply chain management is low. The first proposition and the literature argue that engagement in supply chain management is high when supply chain uncertainty is high. The research shows that this is not true in the case of Beer producer 1. Let us analyze the findings related with organizational culture and then analyze this contradicting result in more detail.

Organizational culture

The framework used to analyze the organizational culture is the competitive value framework of Cameron and Quinn (2011). After carefully analyzing each of the elements of the organizational culture for each producer, I concluded that Beer producer 1 has a clan culture, while the others have a hierarchical culture. The most important elements of the organizational culture for each beer producer are summarized in Table 5.

Table 5
Elements of the culture for each beer producer

Beer producers	Elements of the culture	Type of culture
Beer producer 1	Risk takers Teamwork Collaboration Low level of hierarchy	Clan culture
Beer producer 2	High level of hierarchy Formalized rules and procedures Risk takers High level of indulgence from work and society	Hierarchical culture
Beer producer 3	High level of hierarchy Individualism Formalized rules and procedures High level of indulgence from work and society	Hierarchical culture
Beer producer 4	High level of hierarchy High level of indulgence from work and society Formalized rules and procedures Individualism	Hierarchical culture

All four beer producers have organizational cultures with an internal orientation and their engagement in supply chain management is low. This finding does not contradict proposition 2.

The Albanian beer producers are facing high-medium supply chain uncertainty. To reduce it, they have to engage more in supply chain management. But this is not easy, as their culture imposes limits in the execution of supply chain management practices.

CONCLUSIONS

The Albanian beer producers are aware of the many benefits of supply chain management, but the cost of implementing the supply chain practices isnot justifiable, especially due to lack of customer education in this field. They focus more on the cost reduction aspect of supply chain management, so they seek supply chain partners that are reliable and help to reduce production costs.

The new business environment is facing more supply chain uncertainty, which can be attributed to three sources: supply uncertainty, demand uncertainty and technology uncertainty (Chen &Paulraj, 2003). The main source of uncertainty for the Albanian beer producer derives from demand, while uncertainty from the supply side is very low. Their suppliers always fulfill their requests and offer materials of consistent quality.

Albanian beer producers have cultures with an internal orientation, which imposes limits on the execution of supply chain management practices.

Contribution to theory and practice

This research has shown that a high level of supply chain uncertainty does not always lead to a high engagement in supply chain management, contradicting the literature. I found the reason for this contradicting result in the organizational culture, concluding that engagement in supply chain management cannot reduce supply chain uncertainty when organizational cultures are internally oriented.

As the research is focused just on four major Albanian beer producers, it is important to stress that the results must be handled carefully and not be generalized.

No study has been done before in Albania about supply chain management, and I think that the results of this research will be of high practical importance for Albanian beer producers. The next section provides some recommendations to help managers in dealing with supply chain management, taking into consideration their organizational culture and level of supply chain uncertainty.

Recommendations for managers

Based on the findings of the research my suggestions for the managers are the following:

Multiple sourcing versus single sourcing: We are living in an uncertain world, and it is better to have more than one supplier. Many companies keep one supplier to meet their normal demand of components and another supplier in case of a sudden increase in demand for components. Some companies rely on many suppliers, as they want to secure the flow of components. If something happens to one supplier, another supplier is available. But having many suppliers, means “destroying money and relationships”.Money is destroyed as you have to invest money to find and keep many suppliers. If you rely on many suppliers, you cannot build strong relationships with each of them. Before deciding to rely on one or more suppliers, analyze the competition to see if any of your competitors rely on the same supplier. If you share the same supplier with your competitors, it is necessary to create strong relationships with your supplier and to analyze the supplier market in case of any inconvenience by the supplier side.

Collaboration to detect the weakest link in the supply chain: Today many supply chains are global and complex, so it is difficult to monitor and manage them. If one part of the supply chain is weak, the whole supply chain will be weak. The best suggestion for quickly discovering the weakest link is collaboration and continuous information sharing with all the companies in the supply chain. By collaborating with all the members in the supply chain, you can help them to meet your objectives and also you will get to know them better. Companies need to collaborate in normal times and especially in difficult times. If you exchange real-time information about demand and supply with your members in the supply chain, you will notice immediately if something happens to them, and vice versa. A small problem can bring about big problems, so it is better to discover and solve problems immediately.

Understand your organizational culture: Companies have different cultures that sometimes help them to engage easily in supply chain management and sometimes impose limits. So it is suggested to understand the strengths and limits of your organizational culture. When you decide to engage in supply chain management, you have to consider these strengths and limits.

Engagement relative to the supply chain uncertainty: if suppliers become less predictable, demand will often change and the rate of process obsolescence will become high in the industry.It is time to think aboutinvesting in sophisticated mechanisms of supply chain management and to collaborate more with suppliers and customers.

Organize internally and then externally: the spirit of collaboration must exist first inside the company and then outside the company. If people in the company are not used to collaborating and working together as a team, it will be a waste of time trying to collaborate with other companies.

Customer satisfaction is the key driver of supply chain management: in this study Beer producer 4 would engage in supply chain management for reducing costs and for environmental reasons but not for increasing customer satisfaction. Satisfied customers buy more and may become loyal. This in turn will increase earnings that can be invested in supply chain management practices to reduce costs, increase profits and satisfy customers. There is a cycle that starts and end with customer satisfaction, the key driver of supply chain management.

Limitations and recommendations for future research

The results of this study are definitely relevant for Albanian beer producers. Further studies should expand the study in other industries.

Another limitation of the study is the focus on the focal company. Future research may focus on different companies in the supply chain, for example, the best case wouldbe to conduct a study on the aggregate supply chain.

The Albanian beer producer relies on one supplier for many products and they do not build strong and long-lasting relationship with them. Based on this finding, one interesting area for future research couldbe the problem of single sourcing versus multiple sourcing. The research will be useful in helping managers to understand if single sourcing or multiple-sourcing is the best option for their company.

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Appendix 1: Guide questionnaire

Part 1: SCM practices

A five point Likert scale, where 1= strongly disagree and 5= strongly agree; will be used to answer the questions.

Question 1: To what extent do you apply the following practices?

1. Tight linkages between customers and suppliers
2. Purchase order information tracking
3. Raw material cost, quality, and delivery tracking
4. Supplier/customer satisfaction measures
5. Finished goods visibility
6. Order entry and order-taking technology
7. Shipment tracking
8. Individual customers managed as accounts
9. Process control
10. Integrated quality information
11. Robotics
12. Sharing information about demand forecasts, promotions, price change, order status
13. Jointly making important decisions

Question 2: To what extent do the following reflect your reasons to engage in supply chain management?

1. Increased end-customer satisfaction
2. Improved profits
3. Secure reliable source/market for this item
4. Satisfy supplier/customer request
5. Reduce overall operating costs
6. Gain strategic market position
7. Reduce lead time
8. Price paid for item class
9. Improved productivity
10. Increase margins
11. Political
12. Regulations and tax implications
13. Environmental
14. Reduce product development costs
15. Local economy

Question 3: To what extent does this reflect your reasons for selecting a supply chain partner?

1. Is trustworthy
2. Has a high degree of integrity
3. Knows our business
4. Is reliable and consistent in dealing with us
5. Has a strong reputation
6. Supports the importance we give to customer service
7. Has potential synergy with us
8. Is committed to us
9. Improves our competitive market position
10. Offers us both economic benefit
11. Offers tax incentives
12. Offers environmental advantages
13. Provides political advantages
14. Reduces engineering changes
15. Helps us achieve workforce cost reductions

Question 4 (open question): What supply chain management practices do your company use in terms of:

- Collaboration with suppliers?
- Collaboration with customers?
- Information sharing?

Part 2: Environmental uncertainty measurement model

A five point Likert scale, where 1= strongly disagree and 5= strongly agree, will be used to answer the questions.

Supply uncertainty

1. The suppliers consistently meet our requirements
2. The suppliers produce materials with consistent quality.
3. We have extensive inspection of incoming critical materials from suppliers.
4. We have a high rejection rate of incoming critical materials from suppliers.

Demand uncertainity

1. Our master production schedule has a high percentage of variation in demand.
2. Our demand fluctuates drastically from week to week.
3. Our supply requirements vary drastically from week to week.
4. We keep weeks of inventory of the critical material to meet the changing demand.
5. The volume and/or composition of demand is difficult to predict.

Technology uncertainty

1. Our industry is characterized by rapidly changing technology.
2. If we don't keep up with changes in technology, it will be difficult for us to remain competitive.
3. The rate of process obsolescence is high in our industry.
4. The production technology changes frequently and sufficiently.

Part 3: Culture influence

Open questions

Please describe how the following items are present in the firm's culture:

1. Power distance
2. Innovation
3. Uncertainty avoidance
4. Individualism
5. Internal versus external orientation
6. Indulgence