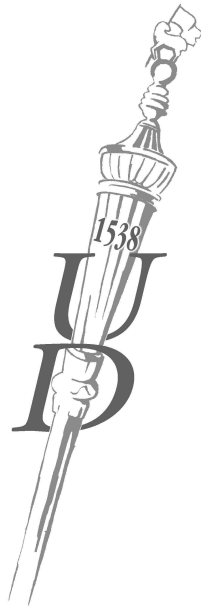


University doctoral (PhD) dissertation abstract

The examination of procurement management of the vegetable and fruit processing enterprises in the Northern Plain region

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1. THE BACKGROUND OF THE RESEARCH

The Institute of Management and Organization at the University of Debrecen started a research programme entitled „The functional research of management” and I started my research within the framework of this institute research programme in 2005. The programme includes the research of three big topics, organization management, human resource management and process management. Within the latter you find logistics management and I chose the procurement management of vegetable and fruit processing enterprises as a topic for my PhD work.

Procurement as a logistics function and the first defined unit of the supply chain has been documented and analyzed in several national and foreign studies. My research targeted the food industry enterprises and their procurement activities. The products were fast deteriorating horticultural products thus their procurement activity is strictly defined and regulated. The supplier activity appears most strongly in the processing industry that is why I chose to examine and introduce the procurement management of the vegetable and fruit processing enterprises and also to reveal the development possibilities of it. The significance of the research is that there are several studies about the units of procurement processes but a complex research from the food industry’s point of view is an area yet to be explored.

Although the different aspects of procurement management have been analysed by several national and foreign authors (inter alia Chikán 1995, 1996, 1997; Chopra-Meindl 2001; Dobler-Burt 1996; Halászné 1993, 1998; Knoll 1999, 2002; Prezenszki 2003, 2005; Szegedi 1999), as far as I know no research has been conducted so far to approach the topic from the horticultural and vegetable and fruit processors’ aspect. The significance of procurement in this context can be important in several aspects.

- The relation system of procurement (relation management of processors and suppliers, relations within and outside the corporations) is quite complex and the conscious handling of it is not easy;
- Procurement has a strategic role in the developed corporate practice as its effective and purposeful management can be the source of several advantages;
- It can influence the picture about the enterprise.

In my opinion, procurement means the input acquiring activity of the economic organisations in a way which suits the strategic aims of the enterprise. Its primary aim is the optimization of the procurement processes with strict regulations and the elaboration of the right strategy. The secondary aim is to ensure the necessary resources, data and information for the corporate activity, establish the right external sources for corporate aims create and maintain strategic partnership with the suppliers. I was searching for answers to all these questions, processes and correlations within the Northern Plain region vegetable and fruit processing enterprises. There are 60 enterprises in the Northern Plain region which deal with vegetable and fruit processing. They work as co-operatives, limited partnerships, ltd or plc and they produce canned and frozen products as well as making palinka or jam; a wide range of processing can be found. It is because the country's one of the biggest vegetable and fruit producing counties, Szabolcs-Szatmar-Bereg is situated in this region.

Procurement management is a "less – researched" topic in our country, the last procurement textbook was published more than 20 years ago. The position of procurement within the organization and its relationship to logistics is not really a topic of discussion. In the meantime the economic effect of the procurement activity is considered more and more important by the international specialized literature. The main reasons can be pointed at the increasing value of the time factor and the competition of the supply chains. It all proves that the research of the topic is timely, current even today and will be essential in the future as well.

2. TARGETS, DATA AND METHODS

During my research I aimed at analysing the following questions below.

1. How does the procurement activity happen at the enterprises examined, which are those steps that are dispensable and can be left out of the process?
2. What role does procurement occupy in the national vegetable and fruit processing enterprises' corporate practice?
3. Where is procurement situated in the corporate hierarchy?
4. What is the relationship with the suppliers? How relations are managed by the enterprises? What tools are used for the selection and qualification of those?

I wanted to learn in details the procurement activity of the vegetable and fruit processors in the Northern Plain region so I personally visited them to gather data and then I evaluated the received data with quantitative and qualitative methods. The necessary data for my research I collected with the help of a questionnaire I prepared. I structured the questionnaire so that the statistical evaluation will be simpler and more transparent. The data collection was fully successful among the targeted vegetable and fruit processors. For the quantitative evaluation I used four statistical analysing methods on three statistical levels. I evaluated the received data on the lower level with descriptive statistics, on the middle level with cross table analysis and on the higher level with correlation calculation, cluster analysis and the cross table analysis of the clusters. Besides that I have also made a flowchart to show the acquisition activity of the processing enterprises. To draw the final conclusions I used qualitative tools thus strengthening and widening my results and conclusions or giving a chance to discuss, maybe modify, correct and clarify the results. *Table 1.* gives a detailed description of the research preparations, the target group, the tools of data collection and the methods used for evaluation.

Table 1.: Data collection and the system of evaluation

Research target group	The fulfillment of finding the target group	Research and data collection tool	The applied methods of data evaluation	
The leaders of the Northern Plain region vegetable and fruit processing enterprises	Full scale	Questionnaire	1. Flow chart	
			2. Quantitative	1. Descriptive strategies 2. Independence research with the help of cross table 3. Hypothesis research a, with correlation calculation b, with cluster analysis
		The results of quantitative analysis	3. Qualitative	4. Deep interview

Resource: own editing, 2010

The questions of the professional questionnaire can be divided into the following three topics and seven smaller topic groups.

1. The role of procurement examined within the corporate operation.
 - The first four questions (K1-K4) ask about the importance and change of corporate and production functions and the source of innovative ideas;
 - The next six questions (K5-K10) are directed at general logistics activities and roles;
2. The place of procurement within the corporate hierarchy.
 - K11 and K12 are about the place of procurement in the organisation;
 - K13 and K19 are about the professional and assured technical background;
 - Questions 14, 15 and 20 are pointing at the effectiveness and importance of procurement;
 - K 16, 17 and 18 are about the products need to be supplied;
3. The examination of supplier relationship management.
 - The last thirteen questions (K21-K33) are looking for answers in the most important areas of supplier relationship management, the selection, evaluation and classification of suppliers, the contracts and the information and cooperation relations.

3. THE RESULTS AND MAIN FINDINGS OF MY THESIS

By making a full research of all those enterprises in the Northern Plain region who deal with vegetable and fruit processing I can say that there were sixty of them in 2008. The highest number of those were canning plants in the region all together 18 of them. There were 10 refrigeration and marrow production plants, 6 acidifying plants, 5 parching plants, 4 palinka making plants who had trading rights, 3 jam making plants, 2 cleaning and slicing plants and 1-1 lyophilizer and dryer plant. On the basis of their operational forms we can say that out of the 60 enterprises 48 were ltd-s, 7 plc-s, 3 limited partnerships and 2 co-operatives. Four of them were in foreign ownership, three of them were in mixed foreign and national ownership and the majority of them were in Hungarian ownership.

In 2007 only ten of the region's vegetable and fruit processing enterprises preserved corns still making 48% (316,000 tons) meaning almost half of the total 654,803.4 tons of horticultural primaries were made up by corn. The second most dominant processing quantity was apple with

its 140,166 tons but which with its weight and its 21% ratio finished way below expectations. Pea has given 10% of the total processed quantity with the cooperation of 14 enterprises. When looking at the fruit processing we can experience that the scattering of processors is higher because 29 out of the 60 processed apple and 34 out of 60 processed cherry whose 80% went into marrow production.

With the help of the data and information I received during my interviews I have made a flow chart about the procurement activities of the vegetable and fruit processing enterprises. Then I evaluated them with the already mentioned statistical methods and used the results to build up around the important steps of the procurement process.

3. 1. THE PROCUREMENT PROCESS OF THE PROCESSING ENTERPRISES

I edited a flow chart about the procurement process of the processing enterprises which shows the steps of procurement management. The chart shows every step of the process and the documents which relate to it. I especially pointed out a few steps which are the emphatic and critical activities of the vegetable and fruit processing enterprises. It is emphatic because they pay the most attention to these points and critical because the room for errors is the most usual in these steps. Because of the content barriers I have no possibility to publish the flow chart here.

3. 2. THE ROLE OF PROCUREMENT IN THE LIFE OF THE ENTERPRISES EXAMINED

The first two questions of the professional data sheet refer to the judgement of the functions present in corporate activity and to their future change and development plans.

We can read from *Chart 1.* that the logistics function has a small role in the life of the corporations. Nonetheless procurement has been found more valuable by the corporations questioned although this factor together with the sales, production and management factors have been evaluated at a low figure (4.3). When they were asked about in which field and what measure of change they would find important to increase management efficiency; interestingly they found logistics and procurement as a very important field to be developed. The answers show that the enterprises examined do not put enough emphasis on the logistical corporate

functions but they realised that these fields need to be developed soon and at a fast pace in order to make the management operate efficiently.

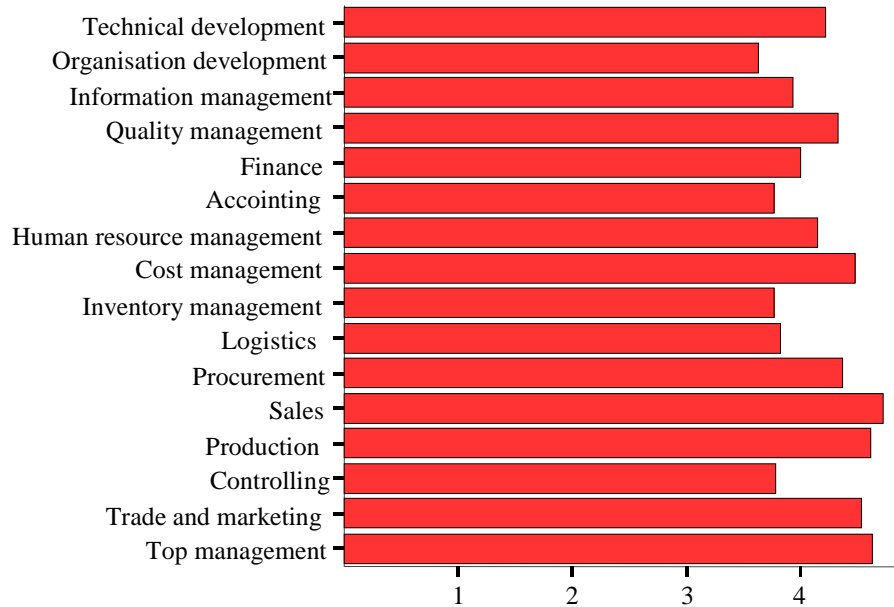


Figure 1.: The role of corporate functions in terms of efficiency

Source: own research, 2008

The judgement and role of procurement management in the corporate operation among the Northern Plain vegetable and fruit processors greatly depend on their annual turnover, staff number, operational form so all in all about the size of the organisation. The bigger the enterprise is the bigger role the procurement function receives. Its positive judgement is becoming to mean bigger success in organisational life. The explanation lies in the financial and economic position of the enterprises which means the costs they can use to form a strategy and organisation of human resource relating to it.

Those enterprises which operate with a lower processing capacity, turnover and staff number have not fully realised the importance of procurement yet. Out of the two examined co-operatives one apply procurement strategy but in the organisational structure it only appears at the level of ltd-s. Those plc-s who have a big turnover find the applied strategy of procurement and its position and value within corporate hierarchy indispensable.

Besides lowering procurement costs of primary materials the increase of quality and the improvement of partner relations are the most important future targets for the processing enterprises. These are basic elements to define the procurement-logistical effectiveness.

3.3. THE PLACE OF PROCUREMENT IN THE ORGANIZATION

The place of procurement it occupies in the organisation depends on the size and the activity profile of the enterprise as well as on the corporate importance of procurement. Next I analysed where the procurement organisation of the vegetable and fruit processing enterprises is situated within the corporate hierarchy, what their received position depends on and which factors determine the judgement of this function.

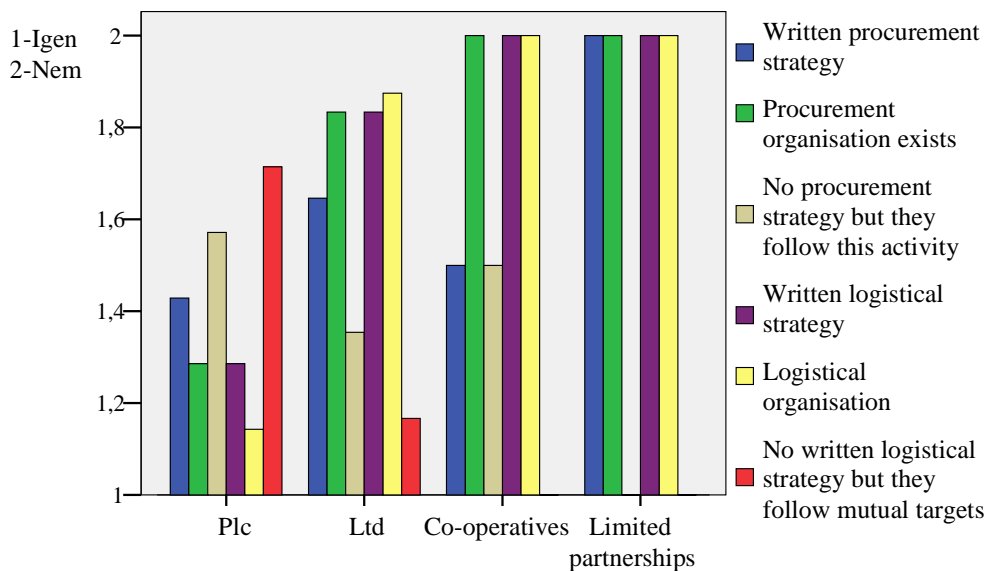


Figure 2.: The judgement of procurement and logistics in the success of enterprises on the basis of their forms of operation

Source: own examinations, 2008

On Figure 2. I illustrated the place of procurement within the corporate body but as a comparison I deliberately left the evaluation concerning logistics in it, too so that the difference in the judgement of the two functions is visible. On the basis of the figure we can say that the difference in the presence of procurement and logistics is not different only in the case of limited partnerships because neither procurement nor logistics is present in the organisation and success of the enterprise. In contrast, within the plc-s we can clearly detect the logistics and procurement

organisation and the written logistical and procurement strategy. At ltd-s logistics is less frequent but procurement and its strategy is more usual. The two co-operatives have no logistical strategy, logistical or procurement organisation but one of them has procurement strategy.

I also wanted to see on the basis of the change of turnovers the judgement of the role and strategy of procurement. *Figure 3.* shows the results of my examination. We can depict from the figure that as the turnover grows the judgement of procurement and the role of organisation grows although fluctuating a bit. The received data show that the majority of those enterprises with low turnover neglect procurement in the corporate hierarchy and only those large enterprises whose turnover is above 500 million HUF appreciate and enjoy the presence of the organisation. The bigger turnover there is the more probable to find this function.

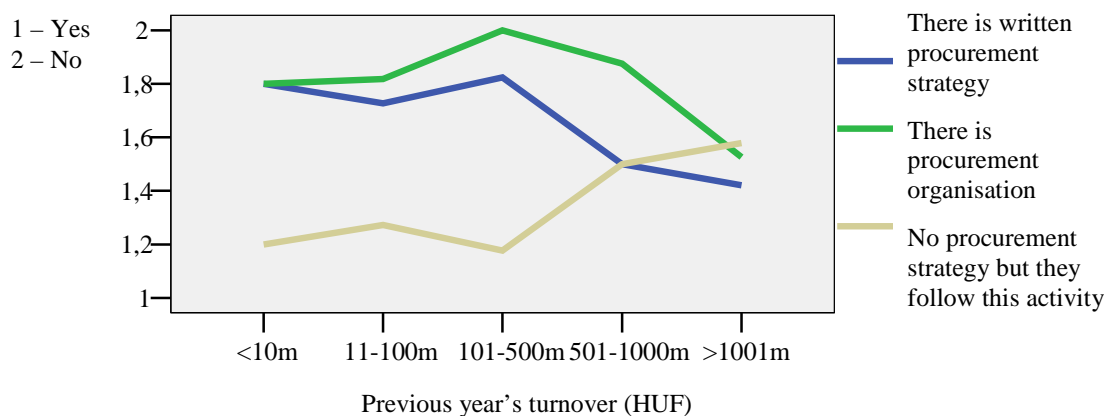


Figure 3.: The judgement of procurement and logistics in the success of enterprises on the basis of turnover

Source: own examinations, 2008

Next I wanted to find out what is the form of procurement within the organisational structure. Whether it is centralised, decentralised or the combination of the two in those 13 organisations which have it. During the evaluation I received the following results. None of the 13 organisations have a decentralised form of procurement. In most cases (8 organisations) it is centralised, in 5 cases it is mixed as a combination of the two.

At those organisations where there is procurement it never appears in a decentralised form. In most cases it has a centralised form, in the case of 5 plc-s it is a combination of the two. Procurement as a corporate function only appears sometimes at smaller enterprises and always in a centralised form and mostly within the framework of the logistical function. Where they

perceive the importance of procurement they put broader logistics and not procurement in the centre and it receives its function only within the framework of logistics.

The main aspects of defining corporate success are securing the uninterrupted operation of production and finding the right procurement sources. The least important factor is the substitutability of certain products which means that the procured products are difficult to substitute and can rarely be substituted with other products especially in the processing of vegetables and fruit. The leaders I asked consider procurement important as a corporate function mainly to reach the optimal quality and to minimize the whole cost. This means that with the rightly planned procurement the target is to achieve the best quality with the least cost.

The achievement of quality increase, the finding of the right supplier and the establishment of long term relations with them are also important even though there is no procurement in the organisation. The right supplier assures the requested quality so in that way both directly and indirectly the aim is to increase quality meaning the procurement of the appropriate quality primary materials. The difference is present in that where there is no procurement organisation yet they do not pay that much attention to the training and development of the person appointed to this task. The judgement of relations management, the development of the methodology of procurement and the training of procurement experts are more powerful and important in the life of those enterprises who have procurement organisations. None of the enterprises find the reduction of the number of suppliers important which means that the presence of the current partner relations are needed. The number of suppliers even without reduction is lower year by year which is due to the high overhead and the small turnover of the producers.

Table 2.: The examination of the correlation between the procurement organisation forms and the processors' turnover

Chi-square test	The significance of chi-square	
	Centralized procurement organization	Combined procurement organization
Pearson's chi-square	0.404	0.001
Likelihood Ratio	0.192	0.014
Cramer's V value	0.259	0.443
N (unit number, piece)	60	60

Source: own examinations, 2008

The relationship between two categorical variables can be examined with the help of the chi-square statistical test. With cross table analysis I researched if there was a correlation between the corporate types grouped according to the applied procurement organisation structures and the scope of activity (*Table 2.*).

We can see from the chart that in the case of combined or mixed procurement organisations where it is specialized both centrally and with subordinate fields of work on the procurement activity, a significant difference can be pointed out according to the turnover of the processors. It means that there is a difference in judging the importance of the procurement tasks among the enterprises with different turnovers. These differences are shown in *Table 3.*

Chart 3.: The cross table between the procurement organisation forms and the processors' turnover

		Combined (mixed) procurement organisation		Total
		Yes	No	
2007 turnover (HUF)	<10m	0	5	5
	11-100m	0	11	11
	101-500m	0	17	17
	501-1000m	0	8	8
	>1001m	5	14	19
Total (pieces)		5	55	60

Source: own examinations, 2008

Because the significance of the chi-square test is lower than 0.05 in the case of combined procurement organisation we reject the nil hypothesis of the chi-square test so there is a correlation between the variables. The Cramer's V value is 0.443 so between the examined variables there is a moderate correlation thus there is an emphasis on what kind of role is given to procurement in the corporate-organisation structure depending on the processors' turnover. At those bigger processors where the turnover is over 1 billion HUF procurement can be found in a combined form in the organisation structure. In contrast it can not be found in this form in the smaller companies. It can be explained by the fact that these big corporations work with more personnel and organisation part units which operate the other special functions. They put more emphasis on procurement and logistics as well.

3. 4. THE MANAGEMENT OF SUPPLIER RELATIONS

With the analysis of the next questions I want to find out what are the most important factors for the selection and classification of suppliers which define the decision. What kinds of methods are used for their evaluation, how the structure of supplier base is built up, what is the relation like between the processors and their suppliers. What factors influence the quality of the relations, whether they make a long term contract with them or not. During the course of my analysis I concluded that for the classification of the suppliers 10% of the questioned use the graphical representation, the personal judgement is preferred by 49 out of the 60 leaders. 50% of the questioned classify the suppliers on the basis of different parameters. Supplier audit that is the visiting of suppliers is done by 35% of the enterprises, cost modelling is done by less than 20%. For supplier classification the following 5 methods can be applied according to KÁLMÁN (2007). The categorical, the quality cost ratio, the delivery cost ratio, the service cost ratio and the scoring-weighting methods. From the evaluation of the received data we can say that the categorical method is applied by only 4 leaders, the quality cost ratio method is applied by 12, the delivery cost ratio by 1 and none of them used the service cost ratio. The scoring-weighting method seems to be the most popular method as 27 leaders find that the most effective classification process.

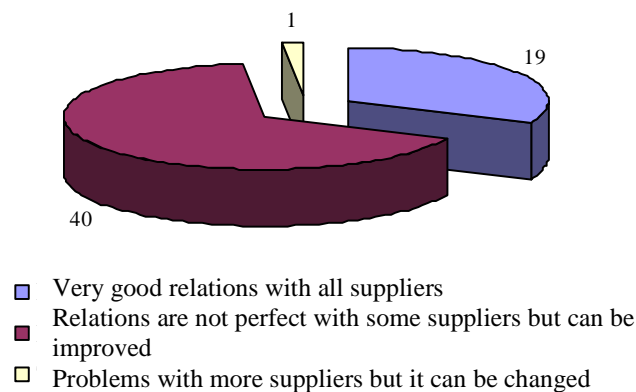


Figure 4.: The judgement of the quality of relations with the suppliers

Source: own examinations, 2008

Figure 4. shows that only 19 consider their relations strong and perfect, the majority experiences smaller errors and conflicts which can be improved and changed. There is only one

enterprise which has problems with more suppliers but these problems can be amended. None of the enterprises had such negative view of their suppliers to consider their relations expressly bad or not sustainable. What factors determine these relations? Reliability (4.8 points) is the most important factor which is followed by the ability to work together (4.55 points) but also the prices and costs (4.4 points) and flexibility (4.38 points) do not lag far behind. Know-how and consideration are the least significant factors with a 4 points average in the determination of the quality of relations.

The last question of the questionnaire I used to find out what are the information relations with the suppliers like that is what kind of data and information the processors share with their suppliers and also how important for the enterprises to manage relations with the suppliers. What kind of differences can be detected in the answers in the case if there is a separate procurement organisation at the enterprise or there is not.

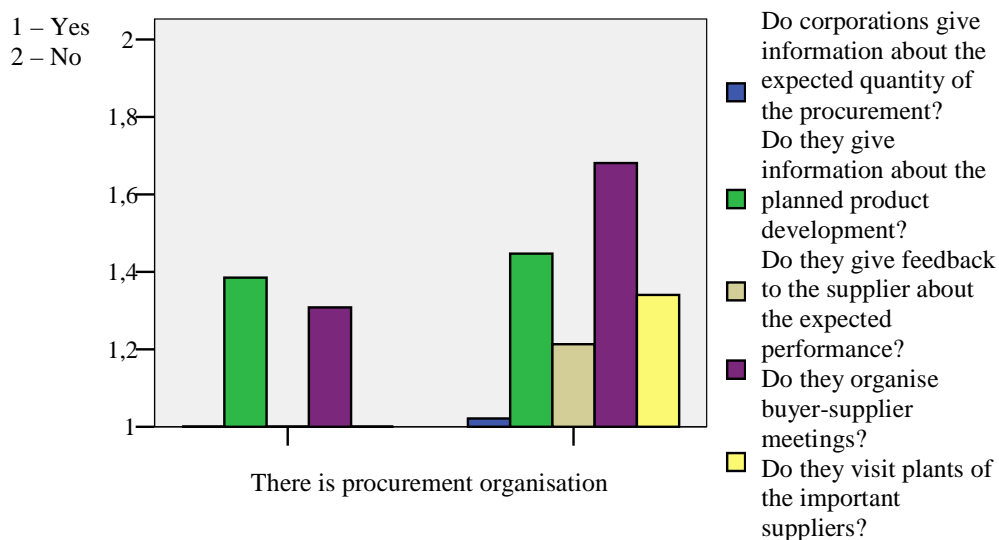


Figure 5.: The judgement of information relations if there is procurement organisation and if there is not

Source: own examinations, 2008

Figure 5. shows the difference in judging the information relations whether there is a procurement organisation or not. If procurement is present in the organisation all 60 enterprises give information to their suppliers about the expected quantity, they give feedback about the performance and every once in a while they visit corporations. In spite of that the majority discuss the planned product development and they organise buyer-supplier meetings. Where there

is no separate procurement organisation they pay less attention to all information possibilities. It is not typical that they maintain relations with their suppliers, they do not organise buyer-supplier meetings, do not talk about development possibilities, at least not to the extent as those enterprises which have a separate management group.

For the canning and refrigeration plants, the palinka and fryer making enterprises it is much more important to make long-term contracts with their suppliers than the established lasting relations from the procurement side. Those processors who decide in the favour of long-term supplier contracts make this decision because of the reliable primary supply and because of the trusted and known quality of the product. The cooperation between suppliers and processors to establish a common strategy or to represent common values to gain advantage over the competitors is not among the aims of these enterprises. They take great care in choosing the right supplier because in the horticulture sector there are fast deteriorating and short shelf life primaries which have to meet the highest expectations in quality.

Only four leaders use the categorical method to classify suppliers, the cost ratio on the basis of delivery and quality is used by 13 and none of them use service cost ratio. The scoring-weighting method seems to be the most popular because 27 leaders consider this the most effective supplier classification. There is a strong correlation between certain classification methods and the processors' scope of activity. The scoring-weighting is used by canning and refrigerating plants, palinka makers and the only lyophilizer to choose their suppliers.

3.5. THE DETAILED EXAMINATIONS OF THE RESULTS

The procedure with which the statisticians analyse the data to decide if there is enough evidence to confirm the suspected hypothesis is called hypothesis examination. Certain questions have arisen in me on the basis of my results. I need the answers so that the processes can be fully apparent, the deficiencies in them, the reasons of these deficiencies and the possibilities to change. I was looking for these answers by hierarchical cluster analysis and the cross table analysis of the groups received during clustering.

The charts were made on the basis of the dendograms made by hierarchical clustering by SPSS so that they can be easily transparent. I numbered the clusters 1 to 5 and in parenthesis I wrote how many enterprises make one cluster. The enterprises belonging to one cluster were marked by a colour. With these in hand we can read from the chart that Cluster 1. is made up by

those enterprises, whose turnover is above 1 billion HUF, who have a separate logistical unit in their organisation. The cluster is made up by 12 enterprises and I marked them with orange colour. Cluster 3. is made up by those small enterprises, whose turnover is below 100 million HUF, who have no separate logistical unit. Two enterprises belong to this cluster and I marked them with blue. In *Table 4.* I show the received clusters in contraction, from one side – the first two lines – according to the presence of logistical units and from the other side – the last two lines – according to the presence of procurement organisations. I needed this to see the difference in the enterprise leaders’ opinion in terms of clusters.

Table 4.: Clusters in terms of processors’ turnover and the presence of logistical and procurement organisations

Turnover	< 10 m HUF	11-100 m HUF	101-500 mHUF	501-1000 m HF	> 1001 m HUF
Logistical unit present	Cluster 3. (2 enterprises)	Cluster 3. (2 enterprises)			Cluster 1. (11 enterprises)
No logistical unit	Cluster 4. (14 enterprises)	Cluster 4. (14 enterprises)	Cluster 5. (17 enterprises)	Cluster 2. (16 enterprises)	Cluster 2. (16 enterprises)
Procurement organisation present	Cluster 4. (14 enterprises)	Cluster 4. (14 enterprises)			Cluster 1. (11 enterprises)
No procurement organisation	Cluster 3. (2 enterprises)	Cluster 3. (2 enterprises)	Cluster 5. (17 enterprises)	Cluster 2. (16 enterprises)	Cluster 2. (16 enterprises)

Source: own examinations, 2008

Next I analysed how those enterprises view their relation with their suppliers who have logistical and procurement function in their organisation. Does the quality of the relation depend on the presence of these two functions.

Table 5.: The clusters’ disagreements over the relations with their suppliers

	Very good relations with all suppliers		Total	The relation is not perfect with some suppliers but can be amended		Total	
	Yes	No		Yes	No		
Clusters	1	1	9	10	9	1	10
	2	7	10	17	9	8	17
	3	8	5	13	5	8	13
	4	1	2	3	2	1	3
	5	2	15	17	15	2	17
Total		19	41	60	40	20	60

Source: own examinations, 2008

We can see from the chart that those enterprises whose turnover is above 1 billion HUF (cluster 1.) do not have a perfect relation with their suppliers but they find it amendable. It is interesting that those 13 enterprises think their relation best with the suppliers who produce the least turnover and who do not have procurement as a separate unit in their organisation (cluster 3.). The opinions of cluster 2. members are divided. Their turnover is above 500 million HUF but they do not have a procurement organisation. Seven processors believe that they have a perfect relation with their suppliers but 10 enterprises are dissatisfied with them. *Table 6.* shows the correlations between the clusters' opinion.

Table 6.: Correlation examination between the clusters and the relation with the suppliers

Chi-square test	Very good relation with all suppliers		The relation is not perfect with certain suppliers but can be amended	
	Value	Significance	Value	Significance
Pearson's chi square	20,424	,003	12,104	,001
Likelihood ratio	22,158	,018	12,914	,012
N (piece number)	60		60	
Cramer's V value	,435	,023	,449	,017

Source: own examinations, 2008

From the significance level of the Pearson's chi-square test we can see in both cases that they do not reach 0.05. On the basis of that we can say that there is a relationship and correlation in the judgement of supplier relation if I take the presence of procurement organisation and the turnover of the enterprises as a reference point. As the Cramer's V value in both cases is close to 0.5 the strength of relations among the variables can be considered medium.

From the evaluation methods of the suppliers – graphic representation, personal judgement, ranking of suppliers, supplier audit, cost modelling – supplier audit which means the visiting of suppliers showed significant difference in opinions. From the classification methods – categorical, cost ratio, quality cost ratio, delivery cost ratio, service cost ratio, scoring-weighting – there were differences in opinions about scoring-weighting method among the clusters. Cluster 1. and 4. use delivery audit as a method of evaluation. The members of these clusters are those enterprises where procurement organisation can be found. We can experience the same with the

judgement of the scoring-weighting method. At both clusters there is a separate function and organisation for procurement contrary to the other three clusters. During the interviews I found out that the two methods have spread and become popular as a requirement of ISO quality management system and to meet those requirements.

Out of the 60 leaders questioned only 19 consider their relations with their suppliers strong and perfect, they are the representatives of those enterprises which have the least turnover and have no procurement organisations. The majority experiences deficiencies which can be amended and changed. This majority contains those processors whose annual turnover is over 1 billion HUF and they have separate procurement in their organisation. The quality and strength of the relations are primarily defined by reliability, the ability to cooperate, then prices and costs and last flexibility.

For the canning factories with bigger personnel the managing of relations with their suppliers is important. It is only them who organise buyer-supplier meetings or supplier corporation visits.

The results also showed that those vegetable and fruit processing enterprises which produce bigger turnover, have a bigger personnel and have separate procurement organisation take special care of the procurement management. The outline of procurement strategy from the planning to the execution, the management of relations with the suppliers, the search for common development possibilities and all tools of procurement management are taken very seriously. They pay attention to develop a well-organised procurement group and organising further trainings for them. On account of what the leaders said the relation with the suppliers is not perfect in every case still despite to this they do everything to reach the mutual interests. They inform each other about the external and internal problems, they make suggestions for the elaboration of a new strategy which can bring result and success for both parties in the future. In contrast those processing enterprises which have lower turnover and personnel and have no procurement organisations do not put enough emphasis on the elaboration of procurement strategy. They do not have a unit specialised in procurement and neglect the evaluation and relation management of their suppliers so probably they will not be able to stay competitive in the long term.

3. 6. THE RESULTS OF THE IN-DEPTH INTERVIEWS

After the quantitative evaluation I again visited four enterprise leaders, chosen on various aspects (on the basis of turnover, staff, activity, place of procurement in the organisation) to strengthen or contradict my findings and conducted a 1.5-2-hour interview with them.

For the first interview I chose a canning plant which has a big capacity and a well-known end product. The annual turnover of the processor is over 1 billion HUF, the staff is medium-sized 11-50 people and procurement as a separate organisation cannot be found in its corporate hierarchy. They outsource procurement activities to other enterprises, one or two bigger suppliers. In this case the processing enterprise makes a strategy about procurement but the execution is not done by itself but by the hired supplier. The supplier is authorized to procure the quantity of the primary defined in the contract also to check its quality and to evaluate and classify the producer as a supplier. The processor itself only evaluates and classifies the authorized supplier but not the producers organised by the supplier. On this basis it is in contact with only a few suppliers but with those the relation is lasting and reliable for many years.

The second in-depth interview was done with the procurement manager of the biggest marrow production enterprise of the region which has three sites. This processing enterprise has over 1 billion HUF turnover, the staff is over 100 and procurement is present in its organisation as a dual combination of centralised and decentralised forms. These enterprises put special emphasis on defining and elaborating the procurement strategy. They use different information and communication channels between the separate corporate functions to achieve precise and up-to-date data and information flow. They train those experts responsible for acquisition, monitor the changes in agriculture, search for development opportunities and in some cases they start innovation and R&D projects to increase corporate efficiency and competitiveness. They look for development opportunities together with their suppliers, they come up with cooperation strategies with which they can follow the efficient and successful foreign examples.

My third interviewee represented an enterprise which deals with palinka making and trading. Nowadays the palinka sector has become the success sector. There is no procurement organisation, the number of suppliers is between 30-40 and this enterprise also has a good relation with its suppliers. The supplier means in most cases the producer itself so because there is no procurement organisation procurement activity is not outsourced either. Because of the

small staff number no establishment of separate procurement group is possible within this organisation. This kind of possibility did not even occur. Its procurement strategy is taking shape and under constant development. Its suppliers are usually the same suppliers. After supplying the primaries these suppliers are evaluated and classified every year with scoring-weighting method and ranking. They consider the relation with the suppliers adequate although they have some problems sometimes but in their opinion these can be easily amended. It is not typical for this enterprise to manage its relations or to elaborate common strategies or development possibilities. Because of this they do not attend corporation visits.

The fourth in-depth interview was done with the leader of a pickles maker limited partnership. The turnover of the enterprise does not reach 100 million HUF and only 4 people help the seasonal work. The leader takes care of the procurement tasks together with all other tasks. They conduct primary purchase on an ad hoc basis which means that they do not deal with making contracts with suppliers, fixing prices, procurement strategy and planning. Its relations are considered good with the suppliers. There is no cooperation or organisation between them. They leave to chance the procurement of primary and their sale is also uncertain. The work is fragmented, its costs are high and the turnover is uncertain and low.

With the separation of the four types I highlighted the differences between the processors and their problems. If all my statements are true the only question is what is going to happen to the producer in the current economic situation (2010) if some of the processors do not realise how important it would be to have a more active and conscious sale activity as well as procurement and supplier relation management activities. The producers end up in such a vulnerable position partly due to these processors. As long as they do not receive the necessary information and are not informed about the daily events they stay in this vulnerable and hopeless position. In business life being known, keeping contact and the nurturing of existing contacts are essential. It is necessary to discuss the results of previous years, the short and long term notions. At meetings it is also worth informing the suppliers what kind of primaries were needed whose procurement had to be secured from a different source. They should suggest their suppliers to consider the possibility if they can provide new primaries in the future. We know from the suppliers' feedback that they consider meetings important and by learning the short and long term notions of the processors they can plan in advance with which they can adapt to the needs and expectations.

4. THE NEW AND MODERN RESULTS OF THE THESIS

1. I consider a novel result of my thesis that I introduced procurement management from the horticultural, vegetable and fruit processing point of view using a practical aspect. As well as outlining solution possibilities to questions occurring during procurement problems.
2. I composed a new definition for procurement.
3. I developed a new questionnaire with the help of which I revealed the role of procurement given by the processing enterprises, its place and system in the organisational hierarchy. I also showed those factors which determine relations with the suppliers and also the background information and correlations, logistical connections and causalities.
4. I created a flow chart to show the procurement activity of the processing enterprises which besides the steps of procurement also introduces the connecting documents.
5. On the basis of the experiences of the questionnaire survey and the interviews I assessed that those processing enterprises operating in the horticultural sector can only take full advantage of procurement management if they will have a more organised structure, a change of approach, strategic and functional changes and a safe supplier background.
6. I consider a new achievement that I analysed procurement management not only with quantitative but with qualitative methods as well. For the statistical evaluation of the quantitative data I used different tools from descriptive statistics to top level methods. I examined correlations and connections not just between the variables but between certain groups of the variables. This complex approach of the examination made it possible that the vegetable and fruit processing enterprises can be analysed as a whole, taking into account the logistical and economic interconnectedness of certain elements and the relationships between them.
7. It is a novel and also more efficient information analysing method in which the qualitative examinations are built on the quantitative results. This alternative method based on information is used by only a few though it should not be underestimated because the most useful and most valuable conclusions and suggestions were made with its help.
8. I explored and pointed out the deficiencies of procurement process. If enterprises do not pay special attention to procurement, to elaborate the right strategy in time, if they do not create a separate organisation for the execution of the composed tasks and if they do not

spend enough time and energy on the management and development of supplier relations then they will not be able to stay competitive with those processors who move into this direction and then they will not be able to establish and maintain market.

9. I have made suggestions to solve these problems which means that on the hand processors need to put procurement in the right place and rank within the organisational hierarchy and on the other hand to target long term, contractual cooperations with their suppliers. The high level management and application of procurement strategy, the definition of the stressed role of procurement and its place within the organisation, the maintenance and management of continuous and innovative relations between the supplier and the processor are all indispensable to achieve the required performance.

5. THE PRACTICAL USEFULNESS OF THE RESULTS

The thesis examined the procurement management of the Northern Plain region vegetable and fruit processing enterprises as well as the role of logistics and procurement in corporate life. It explored the place of procurement it occupies in the organisational hierarchy, it drew attention to the often neglected role of procurement and the wrong organisation of its position in the organisational structure. It pointed out the deficiencies of the relation management with the suppliers which together with the lack of proper communication led to the deterioration of their relations.

My research results can be used in practice in many ways. The research of specialised literature shows that if procurement receives the attention of top management it is enough for the enterprise to reach its goals and remain competitive and successful. My examinations did not prove that. During my research I experienced that in a lot of cases procurement and the activities connected to it were led by a top manager. Though this was not the manager's only task just a small part of his/her work. The person who arranged procurement was the managing director himself or another leader. There is a need to establish the right number of logistical organisations so that every step of procurement receives enough attention.

The research points at some of the problems of the national practice which can also help the general analysing of corporate operation efficiency. With the separation of the four types of processing enterprises (from a procurement management point of view) I showed the differences

between them and the problems, too as well as showing that performance level of procurement affects all details of the organisation where workflow can be measured directly in terms of gain and loss. To operate this function successfully the organisation has to reach a successful corporate level centralisation, establish a constructive relation with their suppliers where cooperation and the possibility of development are mutual interests for both parties.

For those small enterprises in danger the procurement management of the big ones can serve as a benchmark. The primary aspect is to make a written strategy on procurement every year when the season starts. Organise the connecting tasks foreseeable and choose their suppliers consciously, have serious expectations about them and put down their primary procurement intentions in a contract. I showed several examples that it can work and the enterprise can be marketable and competitive. Those processors who still do not realise the importance of procurement and do not make a contract with their suppliers and do not plan ahead with a precisely composed procurement strategy will have to face further difficulties in the future.

The survival of the processing plants and their future effective operation are influenced by the next two things. On the one hand they should put procurement to its right place and rank. On the other hand they must collaborate and work together and overcome difficulties which are only possible if there is a continuous and innovative relation between the producer and the processor. Long term cooperation with the suppliers, high level management and application of procurement strategy, the definition of the stressed role and position of procurement in the organisation are all indispensable to stay alive.

The suggestions I have made cannot be considered as radical changes still I believe that by introducing them we can make the procurement process of the enterprise more optimal. In my opinion, my suggestions can help the processors not just in short or medium term but in long term, as well. By realising these aims would not be survival only but an optimal, ideal system would be created with which competitiveness and income generation can be achieved. To introduce changes and reach the right results it is indispensable to reorganise top management and realise the essential role of procurement.

The results of my research can be used both from a theoretical and practical aspect. The research points at some of the problems of the national practice which can also help the general analysing of corporate operation efficiency.

6. PUBLICATIONS IN THE TOPIC OF THE THESIS

Learned journal

KPÉ

Hungarian:

1. *Villányi Réka* (2007): A beszerzés mint vállalati funkció zöldség-gyümölcs feldolgozó vállalkozásoknál. Agrártudományi Közlemények, 2007/26. különszám, Debrecen. 22.p. **0,2**
2. *Villányi Réka – Pakurár Miklós* (2009): Beszerzés az Észak-Alföld régió zöldség és gyümölcs feldolgozó vállalatának gyakorlatában. Logisztikai évkönyv 2009. Magyar Logisztikai Egyesület. Budapest. 47-54.p. **0,1**

Fully conference theme

Hungarian:

1. *Villányi Réka* (2006): A beszerzésmenedzsment jelentősége a vállalati gazdálkodásban. III. Nemzetközi Konferencia, Mosonmagyaróvár, 40.p. **0,1**
2. *Villányi Réka* (2006): A beszerzés helye egyes élelmiszer-feldolgozó vállalatok szervezetében. LXVIII. Georgikon Napok, Keszthely. 62.p. **0,1**
3. *Villányi Réka* (2006): A beszállítók értékelésének alkalmazási lehetőségei élelmiszer-feldolgozó vállalatoknál. LXVIII. Georgikon Napok, Keszthely. 32.p. **0,1**
4. *Réka Villányi* (2007): Beszállítói kapcsolatmenedzsment vizsgálat a zöldség-gyümölcs feldolgozóiparban. XXVIII. OTDK Közgazdaságtudományi Szekciója DOKTORANDUSZOK KONFERENCIÁJA, Miskolc. **0,05**
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Foreign language:

6. *Réka Villányi – Miklós Pakurár* (2005): Procurement management in Hungarian literature. Integrated Systems for Agri-Food Production. Timisoara, 297-300.p **0,15**
7. *Réka Villányi – Miklós Pakurár* (2006): Location of procurement in the organization. "Natural resources and sustainable development", Nagyvárad. **0,15**
8. *Réka Villányi – Miklós Pakurár* (2007): Evaluation of suppliers in vegetable and fruit processing industry. Green Week Scientific Conference "Modern

- Agriculture in Central and Eastern Europe”, Berlin. 64.p. **0,15**
9. *Villányi Réka* (2008): A magyar tartósítóiipar múltja, jelene és jövőbeli kilátásai. (Past, present and possibilities in the future of the hungarian canning industry.) International Conference on Applied Economics 2008. Kastoria, Greece. 55.p. **0,3**
10. *Réka Villányi* (2006): Importance of e-procurement in the enterprise management. Summer University on Information Technology in Agriculture and Rural, Debrecen. 76.p. **0,15**

Abstract

Hungarian:

1. *Villányi Réka – Munkácsi Szabolcs* (2006): Elektronikus beszerzés a vállalati életben. III. Nemzetközi Konferencia, Mosonmagyaróvár, 82.o.
2. *Villányi Réka – Munkácsi Szabolcs* (2006): Logisztikai hálótervezés a vállalati stratégiában. III. Nemzetközi Konferencia, Mosonmagyaróvár, 78.o.
3. *Villányi Réka* (2007): A beszerzés mint vállalati funkció zöldség-gyümölcs feldolgozó vállalatoknál. „A Jövő Tudósai , a Vidék Jövője” Ph.D. konferencia, Debrecen.
4. *Villányi Réka* (2007): Az almatermesztés érték- és költségviszonyainak összehasonlítása német és magyar adatbázison. AVA3 konferencia, Debrecen.

Total KPÉ: **1,65**