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THE SUCCESS FACTORS OF GREEN PROCUREMENT
DEVELOPMENT OF A TOOLKIT AND METHODOLOGY FOR
IMPLEMENTING GREEN CRITERIA INTO THE HUNGARIAN
PROCUREMENT PRACTICE

Doctoral Dissertation

THESIS BOOKLET

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INTRODUCTION

The greatest challenge of the 21st century is to achieve sustainable production and consumption patterns. According to UNEP (2012) countries spend the 15-30% of their GDP on public procurement. This enormous purchasing power, if spent in a sustainable way, can contribute to sustainability goals, further the market of innovative and green goods, and help develop green economy. With green public procurement authorities can set example and achieve significant results in reaching environmental, economic and social goals. This statement is also valid in the business sector, for private organizations.

All actors of the economy have the responsibility to contribute to steps toward sustainable consumption. For this reason public- and private organizations can implement green aspects into their procurement and household consumption should be mentioned too.

In my dissertation I examined the green aspects of procurement, and defined *green procurement as a possibility for all actors of the economy to buy green*. Green procurement can be used as a policy tool to reach sustainability goals and on the organizational level as an environmental management tool. This is one of the results of my work, so the dissertation is not only limited to public procurement.

In the upcoming parts of this Booklet I will only include the parts of my dissertation that are the most crucial for understanding my theses and research results.

The aims and the advantages of green procurement

The aim of green procurement is to minimize the negative effects of purchasing on human health and the environment. There are several advantages of the concept. First of all, setting example should be highlighted. Public organizations and large private companies have a great role as choice editors, since green procurement can contribute to raising awareness about sustainability. Procurers could use their knowledge by their private purchases as well, and green products can draw the attention of the end users' to buying green. My fourth hypothesis is connected to this spillover effect. Communication has a significant role in information flow towards stakeholders within and outside of the organization. Economic advantages can also be substantial, despite the assumptions to the contrary. According to Blome et al, (2014) „...earlier studies express doubt that green measures could pay-off from an economic perspective (Porter and van der Linde 1995; Carter, Kale, and Grimm 2000) more recent studies suggest that they could result in improved performance (Melnik, Sroufe, and Calantone 2003; Pullman, Maloni, and Carter 2009)” (Blome et al, 2014).

The competitiveness of green products is based on quality and innovative solutions, so the products and services that meet the green criteria are produced with the most recent technologies and can have benefits like low energy consumption. Their life-cycle costs are lower in most of the cases than ordinary products'. By using life-cycle costing and using the techniques and methodologies described in the 6th chapter of my dissertation green procurement can be a tool for economic rationalization. Green procurement can have an effect on the market of green goods, by generating demand for innovative products and services it can be a driver of innovation as well (Testa et al, 2012). On the long run the demand reduces prices and the positive changes towards green economy can be generated (Blome et al, 2014). Green procurement can improve the environmental performance of the purchasing organization and other suppliers' environmental performance as well. (Simcoe-Toffel, 2014)

The implementation of green procurement can result in positive changes within the organization too – gives a chance for procurement development projects. For both public and private organizations image and publicity play a significant role. Green procurement is one of the most active and demonstrative ways of environmental protection. „Additionally, it can be seen as an inter-organizational routine that is deeply embedded and difficult to imitate” (Blome et al, 2014).

Green procurement as a policy tool –results from the European Union and Hungary

In the followings I will introduce the state-of-the-art of green procurement in the EU and Hungary. I find it important to have an overview of the situation in order to understand my results that are described in detail in Chapter 8 and 9 of my dissertation.

“The European Commission also had a number of studies (GPP Europe, Studies) focusing on the uptake of GPP in the EU. The most recent data is from 2012, which shows how the Member States implemented the concept. Figure 2. shows the implementation of National Action Plans based on the findings of the study titled “Strategic Use of Public Procurement in Europe” (Adelphi, 2011). In 2003 there was a communication on Integrated Product Policy which encouraged the Member States to develop their national GPP action plans by the end of 2006 (Diófási, 2012). As it can be seen from Figure 2. some of them are still missing. Germany has action plans on the federal level, implemented at different times, that is why no exact date is stated on the map. In November 2014. 22 of the 28 Member States had adopted a National Action Plan or an equivalent document (Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Ireland, Italy, Latvia, Lithuania, Malta, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, UK) (GPP Europe, NACs). 6 Member States still do not have accepted National Action Plans (Croatia, Estonia, Greece, Hungary, Luxembourg, and Romania) (GPP Europe, NACs). The reasons can be different, but another study titled “The uptake of green public procurement in the EU 27” (CEPS, 2012) (CEPS, 2012) highlighted the assumption that there is a correlation between the existence and adoption of national action plans and the uptake of GPP: “Many of the countries that lead in GPP uptake are also those where a NAP was adopted early on.”(CEPS, 2012)” (Diófási-Valkó, 2015)



Figure 2. National Green Public Procurement Action Plans in the European Union, 2011; Source: Adelphi, 2011

“Figure 3. shows the level of implementation of GPP in the different Member States based on the number of green contracts compared to “non-green” contracts (from the years 2009-2010). The top four performers are Denmark, Sweden, Belgium and the Netherlands. 12 of the Member States perform a level of GPP uptake under the level of 20%.” (Diófási, 2015)

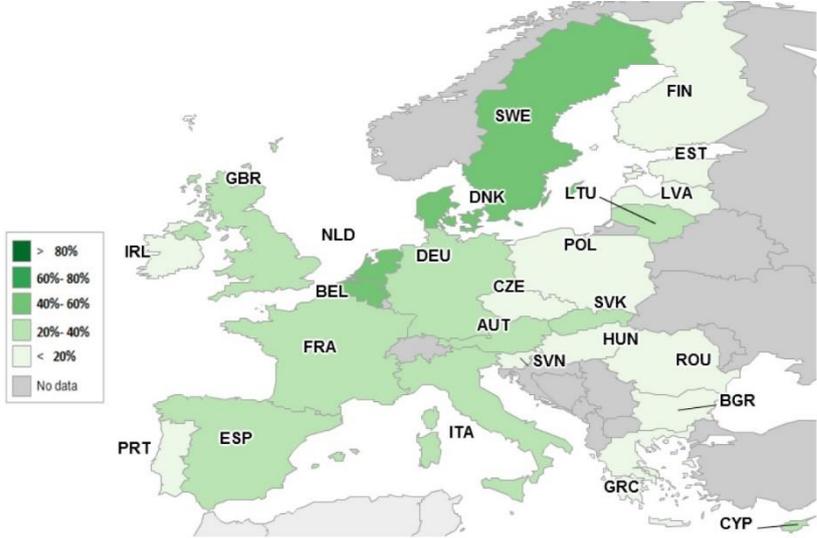


Figure 3. GPP in the European Union based on the number of green contracts compared to “non-green” contracts, 2012; Source: CEPS, 2012

As it can be seen from Figure 2. the Hungarian National Action Plan is still not ready and we are behind in implementing green procurement. In my dissertation Chapter 4. is about the Hungarian green procurement „history”. The latest data can be seen from Table 1. below. The dataset shows some development, but it still cannot be considered as significant.

Type of sustainability criteria in public procurement	2012	2013	2014	2012	2013	2014
	number (pcs)			value (billion Forint)		
Green public procurement	465	971	1164	42,3	96,2	143,2
Social public procurement	115	144	162	13,7	31,5	35,8

Table 1.: Type of sustainability criteria in Hungarian public procurement procedures 2012-2013, Source: own compilation based on the data from Hungarian Public Procurement Authority (HPPA 2012-2014)

Green procurement techniques and ecolabelling

It is possible to implement green criteria into the calls for tenders at the following stages:

- the subject of the procurement
- by defining the technical specifications
- the selection criteria
- the award criteria
- the performance clauses

In Chapter 6. of my dissertation the techniques and implementation possibilities are described in detail. I find it important to introduce the role of ecolabels, because it is strongly connected to my theses and results.

Ecolabels function as an official and trustworthy information source for consumers about the environmental performance of products and services. Ecolabels have a significant role in green procurement, but their use is limited, procurer's know-how and experience is needed.

According to 2014/24/EC and 2014/25/EC purchasers are allowed to „...refer to a specific label or eco-label when laying down the environmental characteristics of the works, goods or services they wish to purchase. Certain conditions must however be met:

- all the requirements that have to be met to obtain the concerned label must be linked to the specific works, goods or services to be purchased, i.e. they must characterize them. If the label includes requirements which relate to the enterprise itself or its policy in general, the label cannot be referred to by the public purchaser. In this case, reference can only be made to the specific requirements of the label which are linked to the purchased works, goods or services;
- labels must be laid down in a transparent procedure by independent bodies in which all relevant stakeholders, such as government bodies, consumers, manufacturers, distributors and non-governmental organizations, can participate;
- the label has to be based on objective and non-discriminatory criteria and available to all interested parties;
- if an enterprise has been unable to obtain the label on time, equivalent labels or other means of proof must be accepted by public purchasers.” (PPR FS 7, 2014)

Ecolabels can be categorized as follows based on the environmental information they carry and their use within green procurement:

	Ecolabels		Environmental Claims	EPD - Environmental Product Declarations	Other green labels
	Type-1	Type-1-like	Type-2	Type-3	
	Is based on life-cycle analyses	x	-	-	x
Relates to more than one environmental aspect	x	-	?	x	?
Relates to only one environmental aspect	-	x	?	-	?
Voluntary system	x	x	Organization's own label	x	?
Third party certification	x	x	Recommended	x	-
Use in green procurement	☺	☺	☹	☺	☹
Examples				-	

Table 2.: Ecolabels and green procurement
Source: own compilation

Of course other labels also exist beyond this categorization. The topic of ecolabels is always introduced in detail at Green Store and Green Workplace Trainings and at the Green Procurement Training as well which is part of the *Green Procurement Toolkit for Hungary*. According to my experiences getting to know ecolabels brings sustainable consumption nearer to people, gives them a knowledge base for acting green, and so they become more enthusiastic about learning green procurement techniques.

Based on literature review I examined the barriers of green procurement (Chapter 5.), the readily available criteria sets and toolkits on the international level. There are 93 sustainable/green criteria sets and 176 toolkits supporting green/sustainable procurement listed on the www.sustainable-procurement.org website. It was surprising me that so much help and such amount of information is available for procurers and still there isn't a significant uptake of green procurement in Europe (Chapter 3.).

I compared the GPP Europe Toolkit, the UNEP SUN toolkit, the Procura+ Campaign and the BuySmart+ project. The first three are the most widely known and accepted tools and the BuySmart+ is introduced because I worked in that project. I analyzed the toolkits based on their fitness for use. In my opinion one of the success factors is that the toolkit intended to support implementation of green procurement should be easy to use, to integrate into everyday work routine and shouldn't result in extra paperwork.

As a summary of the research I prepared two models containing the success factors of green procurement.

Figure 4. shows the success factors of green procurement as a management tool on the organizational level.

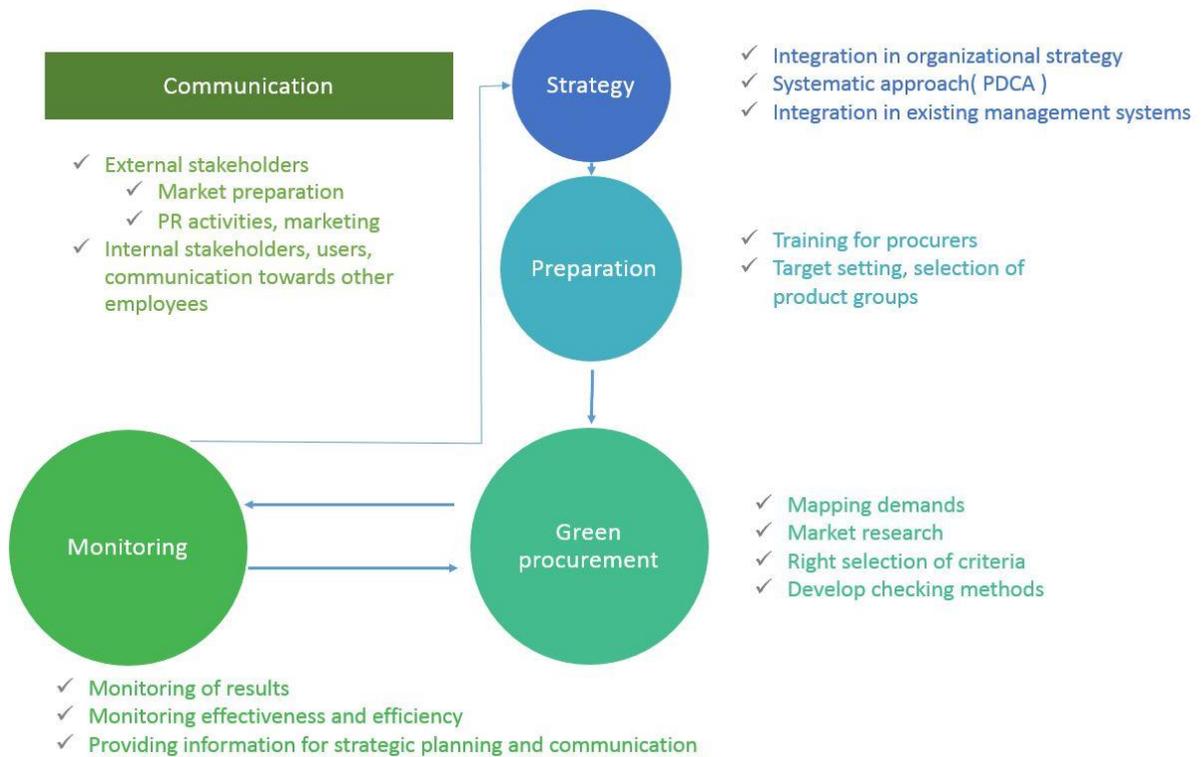


Figure 4: Success factors of green procurement (system level)
Source: own compilation

Figure 5. shows the optimal environment for green procurement as a policy tool. With these circumstances green procurement can be an effective, efficient and economically beneficial solution (Coggburn,2004).

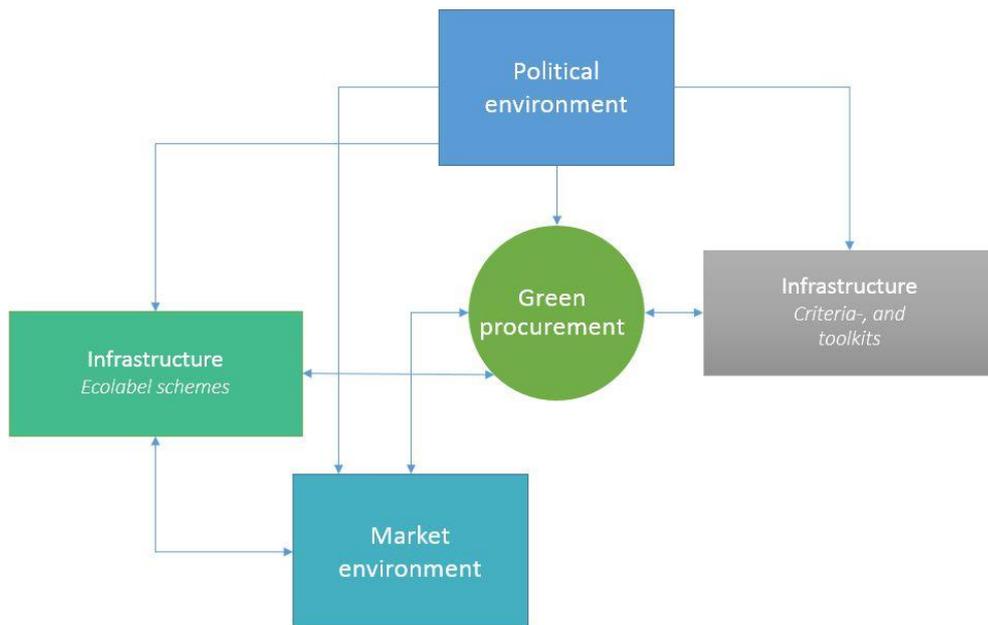


Figure 5: Optimal environment for green procurement- Success factors on policy level
Source: own compilation

AIMS AND METHODOLOGY

The goal of my work was to report on the history and framework of green procurement in the EU and in Hungary, to examine the success factors of implementation based on literature review and to examine what kind of actions contribute to the promotion and implementation of green procurement.

My aim was to work with quality information and research data that can show a complete picture of green procurement in practice and tried to draw attention to new ideas and concepts.

As the most important part of my dissertation I showed the result of the last years' work, the *Green Procurement Toolkit* designed to help the implementation of green aspects into Hungarian purchasing practice. The toolkit was designed and further developed based on practical experiences, which are described as pilot projects. The *Green Procurement Toolkit for Hungary* contains criteria, calculators, training solutions, monitoring system and a methodology for organization types, and procurement types.

With my work I intended to have results that can be easily implemented and used in practice.

In my dissertation I examined the environmental aspects of procurement, since the principles of green procurement can be implemented by all actors of the economy. I didn't intend to limit research to public procurement, mainly because in my opinion the success of green procurement doesn't depend on legal techniques, but on purchasing criteria. The organization types and procurement types are discussed in Chapter 1. which contains the limitations of my research as well.

THESES

Based on the research results and mainly on my experiences in practice I developed the *Green Procurement Toolkit* (Chapter 8.) which is suitable for public and private organizations and for all three procurement types (Chapter 1. and 8.). The toolkit also contains methodology for successful implementation. The significance of my work is that according to my knowledge the *Green Procurement Toolkit* is something new and unique in Hungary.

With setting the hypotheses my aim was to analyze those fields of green procurement that are the most significant success factors in practice on the organizational level. Small details that should be emphasized more.

The *Green Procurement Toolkit* helps the successful and efficient implementation of green procurement in practice. I examine the correctness of the hypotheses in the light of the toolkit, using green procurement as a management tool.

HYPOTHESIS 1

The availability of supporting toolkits help the implementation of green procurement in practice, but only under certain circumstances in terms of the toolkit's fitness for use.

Publications: 1, 2

Acceptable, to be completed with additional sub-thesis.

Based on the results of the toolkit analyses in Chapter 7. and on literature review (Testa et al, 2012, Testa et al, 2014, Swanson et al, 2005, Walker-Brammer, 2009) it is foreseeable that for the implementation of green procurement information and good practice examples are needed. It is because it is a relatively new field of research and exact literature is just developing (Johnsen et al, 2012).

To my knowledge there are no results published about the comparative analyses of green procurement toolkits, so the selection of fitness for use criteria is based on my experiences in practice. Taking into consideration the results of Chapter 7. and the evolution of the *Green Procurement Toolkit for Hungary* (Chapter 8.) the most supportive toolkits can be described as follows: user friendly, concentrates on the goals of the organization, flexible, not dependent on organization types. The evolution of the *Green Procurement Toolkit* is shown on Figure 6.

Version	Target group	Product groups	Description	Parts of the toolkit			
				Training	Performance sheets	Calculation tool	Evaluation methods
1	Public and private organizations	Electric oven, refrigerators, washing machines, drying machines, dishwashers, PCs, notebooks, monitors, printers, MFDs, in-door lighting	Initial version	Basic, about green procurement management	Data, in form of tables, useful for the technical specifications based on ecolabel criteria and EcoDesign Directives	Detailed calculations for each product group	Partly present because of ecolabel criteria
2	Public and private organizations	Smart phones, taxi/courier services, paper and printing service, notebooks	Fixed parts are the performance sheets and calculators, "flexi" parts are personalized upon the request	Basic, about green procurement management+ comprehensive about green criteria and ecolabels	Text, recommendations for all 5 stages of call for tenders/ core and comprehensive criteria	For demonstration of LCC	Exact evaluation method for each criteria
3.a	Public organizations	Smart phones, taxi/courier services, long term car rental services, paper and printing service, notebooks, PCs, street lighting, facility management, cleaning services	Procurement process based separation, not the type of organization matters: public procurement	GPP management, legal framework, comprehensive explanation of environmental criteria	Text, recommendations for all 5 stages of call for tenders / core and comprehensive criteria/ e.g.: recycled paper	For demonstration of LCC	Ecolabel or if ecolabel criteria used external help / e.g.: EU Ecolabel or equivalent proof
3.b	Public and private organizations	Smart phones, taxi/courier services, long term car rental services, paper and printing service, notebooks, PCs, street lighting, facility management, cleaning products/services, sanitary paper products, in-door lighting	Procurement process based separation, not the type of organization matters: below threshold or private tendering	Green procurement management, ecolabels	Text, recommendations for all 5 stages of call for tenders/ core and comprehensive criteria+ available ecolabels/ e.g.: EU Ecolabel certified paper	For demonstration of LCC	Ecolabels or exact evaluation method if the product group does not have ecolabel criteria
3.c	Public and private organizations	Anything that has ecolabel criteria, and available product, but mainly small scale purchases: paper, cleaning or sanitary products	Procurement process based separation, not the type of organization matters: ad-hoc purchases	Ecolabels, exact meanings- environmental criteria, sustainable consumption	Mainly a list of ecolabels and product groups, the possible differences highlighted (ISO Type I or Type I-like labels)	For demonstration of LCC	Ecolabels

Figure 6: The evolution of the Green Procurement Toolkit

Source: own compilation

According to my experiences the separation based on procurement types and modifying the support strategy accordingly is the most successful method for implementing green procurement. This result gives the base for Sub-thesis 1.1.

1. THESIS

The availability of supporting toolkits help the implementation of green procurement in practice, but only under certain circumstances in terms of fitness for use.

1.1 Sub-thesis

It is more effective to support the implementation of green procurement with a toolkit designed for procurement processes instead of organization types.

HYPOTHESIS 2

The use of ecolabels facilitates the work of procurers during green procurement processes.

Publication: 4

Acceptable, to be completed with a sub-thesis.

The practical experiences (Chapter 7. and 8.) and legal circumstances (Chapter 2.) also support the statement that ecolabels are necessary tools for implementing green procurement. Ecolabels can be used as a source of criteria and for the evaluation of fulfillment of criteria as well. For this reason the resource efficiency of green procurement becomes better: no additional resources are needed to create criteria, to test and qualify products (Chapter 6.2).

“The use of ecolabels are crucial, but not unlimited in all types of procurement processes. According to GPP Europe: ‘Ecolabels are one of the key tools used to implement GPP – both to develop specifications or criteria and to verify the compliance of products and services with these standards. They can be used in a number of ways in procurement – although it is not allowed to require products or services to carry a particular ecolabel’ - due to legislation (discrimination issues). To sum up ecolabels are vital for setting official and correct criteria, for describing what makes a product or service environmentally friendly and also help furthering innovation with green procurement (Diófási, 2013). Nonetheless as it can be seen from Figure 6. the practice shows that the use of ecolabel criteria can be limited, or at least has to be applied carefully in case of public procurement processes. This is because of the evaluation methods. If ecolabel criteria is used in the technical specifications ecolabel can be a proof for compliance, but any other equivalent proof also has to be accepted. In case any of the bidders decide to verify their compliance without an ecolabel very complex and interdisciplinary tasks can occur by the evaluation. For this reason an external expert might have to be involved in the process, making it more complex. The other potential source of risk is the substitutability of ecolabels. If a bidder decides to verify their compliance with another ecolabel the evaluation, the comparison of criteria also needs additional resources and can act as a risk source.” (Diófási-Valkó, 2016 – to be published)

This aspect can be avoided with careful preparations, market research and the know-how of the procurers.

2. THESIS

The use of ecolabels facilitates the work of procurers during green procurement processes.

2.1. Sub-thesis

In public procurement -due to the current legal framework- the use of ecolabels is limited, using it as a proof of compliance can be a potential risk due to the substitutability and the interdisciplinary nature of ecolabel criteria.

HYPOTHESIS 3

For a greater up-take of green procurement the cognitive abilities and know-how of procurers should be developed.

Publications: 2, 3

Acceptable.

Implementing green procurement brings changes to the organization on management and attitudinal level as well. These changes can be achieved and maintained on the long term with the changes of attitudes and increase of knowledge of the procurers and the management as well. The lack of knowledge is the second main barrier of green procurement based on literature review (Chapter 5.). Based on the experiences in Hungary I think that the knowledge is an even more important success factor. The know-how, the confident expertise of the procurers is one of the most important success factors of green procurement on the policy (Chapter 2,3,5,9.) and organizational (Chapter 8,9) level as well.

3. THESIS

For a greater up-take of green procurement the cognitive abilities and know-how of procurers should be developed.

HYPOTHESIS 4

The concept of green procurement can be used effectively and efficiently by all actors of the economy, so the implementation of green procurement on the organizational level results in attitudinal changes, furthers eco-conscious behavior (among the employees of the organization and their direct surroundings).

Publications: 5, 6

Partially acceptable.

The commitment and knowledge of the procurers is a crucial success factor of green procurement. This can be seen from the case studies in Chapter 8.1 as well. The knowledge needed to procure green contains information that can be useful in the everyday life as well. The information heard at the trainings, used in green procurement has an effect on the procurers' lives as well and creates a spillover effect of eco-consciousness.

According to my present knowledge it had not been published and proved that green procurement on the organizational level effects the procurement of employees on the individual level. Based on experiences this statement seems to be right, but should be supported by further research (e.g. surveying the participants of the green procurement training, environmental psychology etc.).

FURTHER UTILIZATION OF THE RESULTS

I created models summing up the success factors and the optimal environment of green procurement, which can be useful for designing implementation measures to policy-makers.

As the most important part of my dissertation I showed the result of the last years' work, the *Green Procurement Toolkit* designed to help the implementation of green aspects into Hungarian purchasing practice. The toolkit was designed and further developed based on practical experiences, which are described as pilot projects. The *Green Procurement Toolkit for Hungary* contains criteria, calculators, training solutions, monitoring system and a methodology for organization types, and procurement types.

With my work I intended to have results that can be easily implemented and used in practice. My research results can be beneficial to other experts, policy-makers and on the European level by designing and evaluating funding mechanisms. In my opinion with careful coordination of the demand and supply side efforts green economic solutions can be reached.

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