# Innovation in public procurement for emergencies

Isabell Storsjö
Hanken School of Economics / HUMLOG Institute
isabell.storsjo@hanken.fi
Gyöngyi Kovács
Hanken School of Economics / HUMLOG Institute
Linda Forss
Hanken School of Economics / HUMLOG Institute
Ira Haavisto
Hanken School of Economics / HUMLOG Institute

**Abstract**
According to the European Commission, buying innovative products and services plays a key role in improving the efficiency and quality of public services while addressing major societal challenges. In this study, we investigate how Finnish agencies integrate the performance objective of innovation in public procurement processes while dealing with emergencies.

**Keywords:** public procurement, innovation, emergencies

## INTRODUCTION

Public procurement is highly regulated and therefore also considered rigid. Leenders and Fearon (2008) have summarized the typical performance objectives of public procurement to consist of the quality and price of the item or service being procured, but also included issues such as transparency, rigor, and ethics in the procurement process. More recently, procurement literature has embraced more and more non-traditional performance objectives such as sustainability, collaborative aspects (Zeng et al., 2007) and in fact, innovation. Innovation being an important factor for fostering economic development, in the EU, the new EU Procurement Directive has raised the question of how public procurement could be rigorous but nonetheless foster innovation (European Parliament, 2014).

Due to being such a highly regulated area, innovation in public procurement is also delimited by such regulation and rigor (Haavisto and Kovács, 2015). The most commonly used definition of innovation is the one by Rogers (1962: 13) who sees it as "an idea perceived as new by the individual". In business and industry, innovation has traditionally been linked to agile supply chains and flexible procurement practices (e.g. Fisher, 1997) where Donaldson (2001) claims within the framework of contingency theory that organizations which function in uncertain environments (e.g. industries characterized by innovation) should develop decentralized structures and flexible processes. On the reverse, organizations that function in environments with certain demand and high regulations have rigorous and standard processes which might not

foster innovation. Consequently, if the public sector is to foster innovation, contingency theory would point this out as a misalignment between the performance objective of innovation and the current rigid public procurement processes.

The traditional "lowest price" focus of public procurement has been criticized, and the new EU Procurement Directive (2014/24/EU) no longer specifies price as an award criterion. In order to encourage a greater quality orientation, the new directive emphasizes "best price-quality ratio" as a concept for determining the most economically advantageous tender. Contracting authorities should be encouraged to choose award criteria that allow them to obtain high-quality works, supplies and services that are optimally suited to their needs. Nonetheless, the question remains how public procurement can contribute to managing risks. In the case of national security and/or a crisis situation, exceptional circumstances justify different objectives such as security and speed for the sake of mitigating a potential risk.

Public health is one of the foremost sectors that public procurement regulations apply to. This study focuses on public health as a sector both in order to be able to investigate the fit between public procurement regulations and the performance objective of innovation, and also, to increase the understanding of the use of public procurement in the case of an emergency. The selected focal organization for the study is the Finnish National Emergency Supply Agency (NESA), which is both bound by public procurement regulations but also, manages large supply pools in different sectors that include numerous private companies. In the health sector, the supply pool extends to pharmaceutical companies, wholesalers and retailers alongside reaching out to the relevant public health providers (hospital districts, health care centers etc.). Their collaboration with private companies is interesting as it is not, as commercial collaboration would presuppose, following the logic of frequent economic transactions. Instead, such supplier relationships can be described as "dormant partnerships", though these have not yet been studied in detail (Samii, 2008).

This study aims to answer the following research questions:

RQ1. Which performance objectives are pursued in public procurement for health-related emergencies?

RQ2. How is innovation taken into account in public health procurement for health-related emergencies?

## INNOVATION IN PUBLIC PROCUREMENT

The rationale for public procurement as well as for it being so heavily regulated, is that it covers areas that support the population – but also, to ensure competition in such areas. Also, by and large, public procurement is paid for by taxes and levies. Baily et al. (2005: 342) put forward the following principles for public procurement:

- Procurement should be based on value for money
- Competition should be used to acquire goods and services
- Clear definition of roles and responsibilities (including segregation of duties).

Overall, demand is an important driver of innovation (Edler and Georghiou, 2007), which is also why policy-makers have started to focus on public procurement in order to foster innovation (Aschhoff and Sofka, 2009; Edquist et al., 2015). Of course, public procurement is not only concerned with innovation in e.g. the procurement of standard products, but standard products is not the only category of products and services public procurement is concerned with. First and foremost, the fostering of technological innovation has been propagated in public procurement,

amongst other reasons, in order to respond to sustainability policies and other social goals (Zeng et al., 2007; Aschhoff and Sofka, 2009; Uyarra and Flanagan, 2010). According to Edquist and Zabala-Iturriagagoitia (2012, p.1758), public procurement for innovation (PPI) occurs "when a public organization places an order for the fulfillment of certain functions within a reasonable period of time (through a new product)". This is a rather narrow definition of PPI as it sets the occurring of innovation for the time period after the tendering and bidding process, with public procurement itself "triggering" innovation (Edler and Yeow, 2016). However, even though the aim of the revision of public procurement acts to allow for innovation is to change these processes as well, this conflicts somewhat with the requirements of openness, transparency and rigidity (Leenders and Fearon, 2008).

Innovative procurement can, however, be understood in multiple ways. Haavisto and Kovács (2015), identified the following areas where innovation occurs in procurement:

- Procurement where close collaboration between actors is emphasized (e.g. Hoppe and Schmitz, 2013)
- Managing markets (procurement as power/ control for shaping products, services and markets) (e.g. Aschhoff and Sofka, 2009)
- Procurement taking in consideration the demand side (e.g. Kessler 1998; Edler and Georghiou, 2007)

This study follows the understanding of "innovative procurement" as: "a way of buying goods and services in a way that stimulates the supply chain to invest in developing better and more innovative solutions to meet the unmet needs of an organization" (Hérnandez Garvayo, 2013). This definition follows the European Commission's (2015) suggestion of understanding innovative procurement as means to shape markets.

As also Edquist and Zabala-Iturriagagoitia (2012) state, the targeted outcome of PPI is not necessarily a new product per se, but functions, e.g. product characteristics that address human needs and societal problems. The identification of such needs occurs at, or even before the actual start of any public procurement process, in public procurement and (private) purchasing alike. Also in purchasing, the first actual step in the purchasing process is the translation of requirements to specifications (van Weele, 2010), which is then followed by supplier selection, contracting, ordering, expediting, follow-up etc. (van Weele, 2010). PPI, on the other hand, follows it up with the tendering and bidding process (Edquist and Zabala-Iturriagagoitia, 2012). For PPI to actually lead to innovation, the specifications in the tendering process need to be result- rather than product-oriented (Edquist and Zabala-Iturriagagoitia, 2012).

Importantly, however, procurement agents may not necessarily buy products and services for their own use, but often buy these for other beneficiaries, i.e. for broader public use across a broad spectrum, to set up transport to energy infrastructure, support public health etc. They are thus "intermediators" between demand and supply, helping to articulate demand at the same time as aiding the diffusion and transfer of technologies (Edler and Yeow, 2016). Needs are also societal and can relate to "grand challenges" or even the sustainable development goals.

Contingency theory serves as the basis for the proposed framework for aligning public procurement processes with the performance objective of innovation. Contingency theory typically focuses on the fit between (a) the organizational structure and strategy with (b) the context of the organizational environment and (c) the performance objectives of the organization (Donaldson, 2001). Applied to public procurement, the procurement process constitutes the structure, procurement policy the strategy, principles and guidelines, and the industrial sector its

corresponding societal needs the context of the study, seeking alignment with the main performance objective of fostering innovation (see Figure 1).

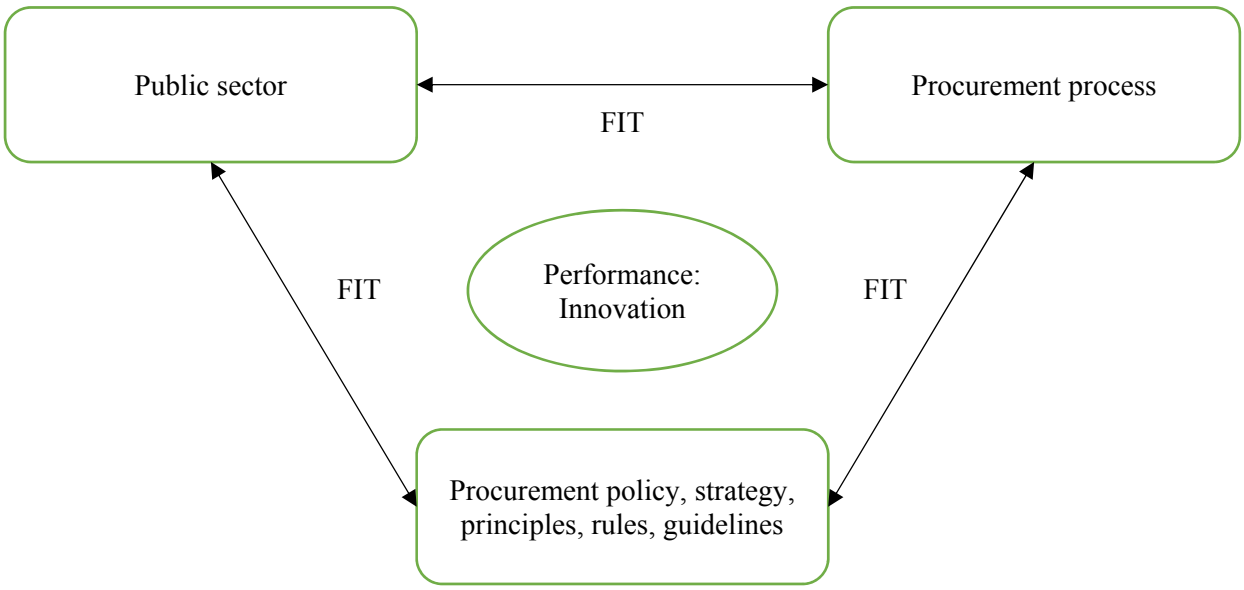


*Figure 1 – Applying contingency theory to innovation in public procurement*

There are, though, some major challenges to PPI. First and foremost, the impact of public procurement is somewhat limited, as public procurement agencies primarily reach out to companies within a certain geographical area, i.e. mostly to those that manufacture items in the same country (Aschhoff and Sofka, 2009). Second, the challenge of translating societal needs to tender specifications cannot be overstated (Edler and Yeow, 2016) – especially as, given the dimensions of such needs and challenges, Edquist et al. (2015) see PPI as the main source of innovation, with private companies "only" being able to trigger smaller-scale innovations. Third, PPI needs to overcome risk-averse policies and procedures through the establishment of PPI-supportive incentive structures for procurement professionals (Edler and Yeow, 2016), apart from the challenge of implementing the innovation itself. Of course, the bureaucracy and rigidity of the public procurement process itself is a challenge as well, as Edler and Yeow (2016) attested in their study of public health procurement at the NHS even in the case of procuring an already existing innovation. Public health is an interesting case of public procurement, not the least as it is characterized by a highly conservative procurement culture (Kautsch et al., 2015).

## RESEARCH DESIGN

This study started with mapping out critical products and suppliers in the health sector. Then, data was collected via interviews with different organizations in the health sector. First, interviews with the Finnish National Emergency Supply Agency were conducted; other interviewees were identified through snowballing. In the end, 21 interviews were conducted. Organizations represented include public health providers (hospital districts), other public agencies in the health sector (e.g. relevant ministries), pharmaceutical companies and medical devices component suppliers, wholesalers and retailers. The semi-structured interview guide focused on the questions of (a) challenges in public procurement, (b) emergencies, and (c) innovation in public procurement. None of these parameters were defined beforehand, leaving

room for respondents to apply their own understanding of innovation. All interviews were recorded and transcribed to ensure the dependability of the study. Furthermore, relevant legal texts and other documents were collected to support the confirmability of the study, and the analysis.

Template analysis was conducted on the data in order to be able to compare the view of actors with the same role in the supply chain, and to contrast the views of other supply chain members. Initial findings were presented and discussed at a seminar with NESA, further adding to the credibility and confirmability of the study.

## FINDINGS

The Finnish Act on Public Contracts (348/2007) applies to all contracts put to tender by state and municipal authorities where the value of the procured goods amounts to EUR 30,000. The aim of the legislation is to increase the efficiency of the use of public funds, promote high-quality procurement and safeguard equal opportunities for organizations bidding for public procurement. Both the Finnish legislation and the European equivalent directive contains rules on different types of procurement procedures, but they all have in common the following general activities: identifying need, setting requirements, announcing tender, assessing bids, selecting supplier or service provider, fulfilling contract.

The procurement process commences with the recognition of a need and setting of requirements for the goods or service to be procured. In this phase of the procurement process, the procurer is allowed to screen the market for possible solutions and product features, and interview data suggest that end users (i.e. health care personnel) can be consulted, and their preferences taken into consideration. Typical requirements mentioned by informants were patient safety, occupational safety, price and technical features (for example sizes and how easy it is to handle the product). The final requirements that are announced must however, according to the law, be formulated in a way that no single goods or service provider is favored. In the following stages of the procurement, communication between procurer and supplier is prohibited, except for specific variants of the procurement procedure.

### Procuring for Emergencies

The bulk of public health procurement is for regular health care activities around the year. Emergencies are, nonetheless, taken into account in two ways: (a) through preparedness activities, and (b) in a reactive manner if an unforeseen emergency actually takes place.

The term “emergency” was not predefined in the interviews, but left open for the informant and interviewer to discuss around. The context of study, a health-related emergency, can therefore range from an individual case or a regional outbreak of a decease, to a situation threatening the population of the nation, such as a nuclear power plant disaster, or even a global pandemic. Both the scope and length in time of the different potential emergency situations may vary, as will also the products needed for each type of emergency.

The national preparedness for health-related emergencies includes procuring for pre-positioned stock. In Finland, the Finnish Act on Mandatory Storage of Pharmaceuticals (979/2008) requires pre-positioning of pharmaceuticals in order to enable drug availability across the country. The Finnish Medicines Agency Fimea issues on a yearly basis a list specifying amounts, based on historical data on consumption over a certain time-period, for each

pharmaceutical substance that falls under the Mandatory Storage Act. These requirements result in manufacturers, wholesalers and health care providers having an obligation to ensure access to and availability of essential medicines, by which they either need to pre-position these, or see to it that they are pre-positioned in the required quantities. NESA compensates the actors obligated to store the goods for incurred additional costs. One can perceive such pre-positioning as a national "safety stock", though considerations for setting such stock do not only cover for order lead times but also historical usage patterns (including seasonality) as well as other forecasted disease outbreaks.

On the other hand, medical emergencies can also occur outside of forecasts. On the individual level, such emergencies are often small enough as to not exceed the threshold that would require the application of the entire public procurement process. It is only on the large scale (e.g. avian flu, Ebola) that public procurement would need to consider such emergencies. Traditionally, larger scale medical emergencies could be dealt with outside of public procurement regulations in the case a country had declared a state of emergency. However, countries avoid such declarations if only one sector has been affected by an emergency, resulting in the public health sector being bound to public procurement regulations also when facing a pandemic.

When it comes to medical devices and equipment, there are no regulation on safety storages equivalent to those set up by the Act on Mandatory Storage of Medicines.

Several informants expressed their concerns that the Finnish regulation in the fields of public procurement and health care are too strict in general, and that the safety stock requirements that comes on top of the rigid procurement and marketing authorization practices are difficult for suppliers to understand, especially when the Finnish market is small compared to other markets.

## Aligning Procurement Process, Regulation and Emergencies, with Innovation

As described above, contingency theory focuses on the fit between the organizational structure and strategy with the context of the organizational environment and the performance objectives of the organization (Donaldson, 2001). Applied to public procurement for emergencies, the procurement process constitutes the structure, procurement policy the strategy, principles and guidelines, and health-related emergencies with its corresponding societal needs the context of the study, seeking alignment with the main performance objective of fostering innovation (see figure 2). During the interviews, the term "innovation" was kept as open as possible for informants to define and discuss from their particular standing point.

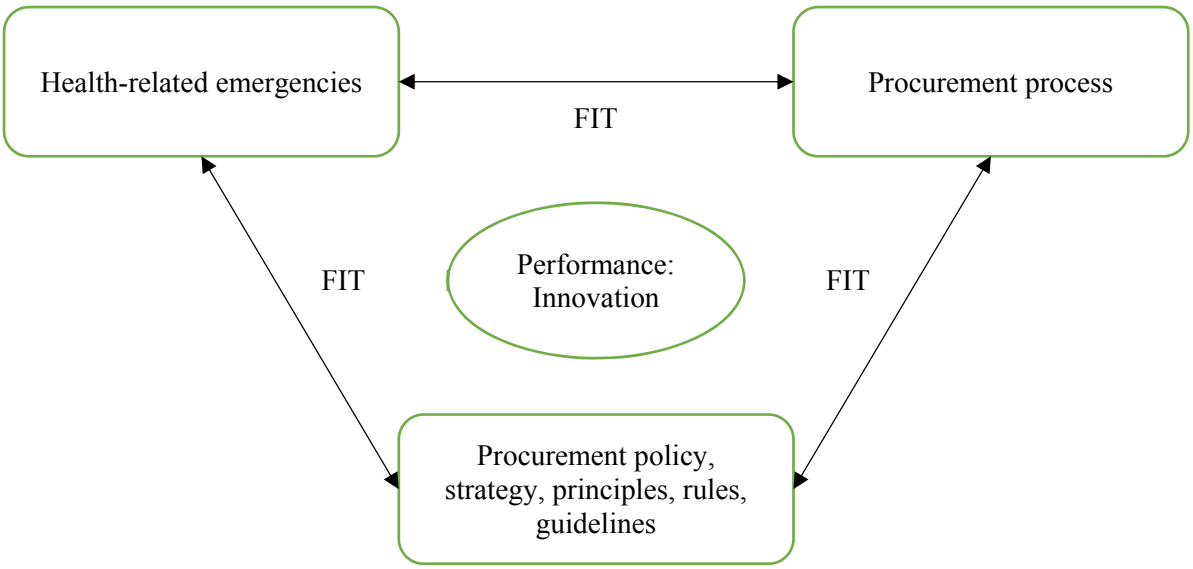


*Figure 2 – Applying contingency theory to innovation in public procurement for emergencies*

When it comes to preparedness for emergencies, The Act on Mandatory Storage of Medicines and Fimea dictates what medicines need to be procured in what quantities, and procurers and suppliers are focused on fulfilling the requirements set out in those instructions. Contrasting this with emergency response, an unpredicted and unfamiliar situation might require the procurement of a product that has not been stored in accordance with the Act on Mandatory Storage of Medicines – such products are procured in parallel with mandatory medicines, but the situation can also require that a completely new product is used on the patient. Such a product might in certain circumstances be allowed for usage although it has not yet passed through all clinical trials and marketing authorization procedures normally required. Also medical technology can be used in certain emergency situations although they have not yet passed through the proper evaluation process to ensure its "safety, suitability for intended use, performance and reliability" (see Valvira, 2015). The determining factors in such situations are then the need and urgency to save life, which is compared with the anticipated risks and benefits, not the desire to promote innovation per se.

Both the European and the Finnish legislation would allow public procurers to use the procedure of competitive dialogue, where the authority conducts a dialogue with candidates with the aim of developing suitable alternatives capable of meeting the requirements. The use of such a procedure in the preparation for or response to emergencies, seem though to be uncommon for procurement of medical equipment and pharmaceuticals. The development of a new medicine or medical device takes a long time and require large investments. After a new product has been developed, it must further pass through a marketing authorization or evaluation process. The long lead-time for new medical products seem to inhibit the use of procurement procedures where the procurer to at least some extent drives innovation by discussing the needs and potential solutions with suppliers. What is more, interviewees indicate that the Finnish market, with only 5.5 million customers, would be too small for international actors being willing to invest in product development that is specific to Finland.

The interview data suggest that public procurement in Finland does not seem to have direct impact on the innovation process for pharmaceutical companies and equipment manufacturers, neither in preparation for nor in response to emergencies. The Finnish health agencies may take

part in the research process for new medicines, i.e. in clinical trials, and can in that way be considered to have and impact in the product development process, but interviewees' accounts suggest that this activity is not connected with public procurement. The interviews with the supplier side further indicate that innovation takes place in operations and services provided by distributors to parties further up the supply chain, but that such innovation takes place after the procurement agreements (which are usually for a two to three years for pharmaceuticals) have been concluded and is not driven directly by the procurement, but instead of the desire to add value to the services offered to pharmaceutical companies.

## CONCLUSIONS

In this study, the framework of contingency theory (Donaldson, 2001) was used as a tool to point out a fit (or misalignment) between processes and regulations, and the performance objective of innovation, in public procurement for health-related emergencies in Finland. The aim was to find out which performance objective are pursued in public procurement for health-related emergencies, and how innovation is taken into account in public procurement for health-related emergencies.

The analysis of the interview data and review of legal documents showed that health care is a highly regulated area with long lead-times for new products. Demand for products can to a certain extent be forecasted, which has in Finland translated into a practice of requiring suppliers to keep safety stock of certain pharmaceuticals for emergencies. While such buffers can hedge for disruptions in supply, they are based on historical data and do not reduce the risk of lacking treatment and other necessary medical products when an unanticipated emergency occur, no matter the scope or cause of the emergency situation. In such situations, some steps in the regular marketing authorization and evaluation procedures can be ignored if needed to save life. For such situations however, the public procurement procedure might not even be applicable if the value of the product to be procured is too low, or if the situation is such that authorities are allowed to set aside the procurement regulation anyway.

These findings indicate that the performance objectives pursued, in preparing for emergencies, are those that are set out in the regulation on mandatory storage of pharmaceuticals, i.e. to ensure access and availability of pharmaceuticals, together with price. In response to emergencies however, protection of life has highest priority. The complexity of the public health and emergency context, the rigidity and extent of regulation on medical products and emergency preparedness, and the unattractive size of the Finnish market, make suppliers unwilling to innovate for Finnish emergencies, and does not create an environment where procurement staff would pursue a result- rather than product-oriented tendering process that would lead to innovation (Edquist and Zabala-Iturriagagoitia, 2012). Thus, public procurement processes and regulation are not aligned with the performance objective of innovation in the context of health-related emergencies. Finnish agencies can contribute to innovation in heath care – however outside the procurement process for emergencies, for example by allowing clinical trials and indirectly motivating distributors to innovate in services due to the fixed pricing on pharmaceuticals.

The complexity of the health care network in Finland and the applicable regulation and processes entail some limitations to this study. Although interviews were carried out with several actors in different echelons of the supply chain and in different agencies, there are still relevant

viewpoints missing from the study. Further research should therefore strive to include more relevant actors in order to achieve even more precise results.

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