ESTABLISHMENT OF THE TYPE AND INTENSITY OF THE RELATIONSHIP BETWEEN THE VARIABLES OF THE RISKS RELATED TO DIRECT PURCHASE CONDUCTED IN THE PUBLIC PROCUREMENT ELECTRONIC SYSTEM (SEAP) BY HOSPITAL UNITS

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ABSTRACT

The direct purchase made in SEAP is subjected to risks. These risks must be known and analysed by the staff of the public procurement department within the budgetary institutions. The analysis of the direct procurement risks in the SEAP is done in order to avoid the possible damage that could result from the risk manifestation.

KEY WORDS: *Electronic Public Procurement System (SEAP), budget institution, risks, statistic- mathematical probability, statistic-economic probability.*
JEL: *M41*

1. INTRODUCTION

The direct public procurement is a way of procurement, used by public institutions, usually in one of the following situations:

a. when one needs a product used rarely/accidentally by the public institution, for which reason it should not be included in a procurement procedure generating a frame agreement and a subsequent contract;

b. when the total value of the product purchased in a budgetary year is small enough so that it does not need to be entered in a tendering procedure;

c. when the value of the product is sufficiently low, so that participation in a possible procurement procedure for that product is not appealing enough (in terms of cost-effectiveness) for SEAP tenderers.

2. THE NEED TO ANALYSE THE RISKS OF DIRECT PURCHASES

Any organisation has, among its many secondary objectives subordinated to the central objective, that of avoiding unforeseen expenses. Regardless of the level of organisational and managerial culture and performance, these expenses cannot be definitively eliminated, because it is in the logic of things they occur, no matter how well organised, structured and programmed this type of spending is.

From the economic point of view, the additional costs that may occur in the public procurement process are economic risks and should be treated as such.

In DEX (Romanian language explanatory dictionary) the first definition of risk

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is "the possibility of put oneself in danger, having to face a difficult problem or to bear a loss, possible danger and in fact additional costs are included in this category: that of losses and damages".

The procedural system of public procurement (especially direct procurement) is subject to errors, mainly due to their low predictability.

Systematic or accidental errors cause damage, primarily due to extra costs, necessary and sometimes impossible to avoid, to correct the procurement process and restore it to the normal and legal parameters. Of all public procurement typologies, the direct purchase has a rather high level of error. In addition to systematic or human error, the system of public procurement - including the direct purchases - also involves fraud, with all its „techniques": „closed" tenders, retention form the offer, alternating offer, market division, discrepant offer, product substitution, manipulation of tenders, influence trafficking, non-declaration of conflict of interest, etc.

The direct procurement leads to a supply process in which, most of the times, the experience and correctness of the specialised staff of the public institutions are most often essential and useful in the process. In this type of purchase, besides the systematic or human error, fraud occurs with all its „techniques": „closed" tenders, retention form the offer, alternating offer, market division, discrepant offer, product substitution, manipulation of tenders, influence trafficking, non-declaration of conflict of interest, etc.

From an economic point of view, the additional expenses that may arise in the public procurement process are economic risks and should be treated as such.

If the direct purchase risks materialise, the result could be the extra costs burdening the budget, and thus they become a stringent management problem. For this reason, it is necessary to proceed to the following actions:
- the research of the emergence of a risk typology (i.e. calculating the statistic-mathematical probability of risk occurrence);
- investigation of the risk transformation in additional expenditure (i.e. calculating the statistical probability of economic risk);
- research into the relationship between the two types of probabilities.

The public manager must effectively manage public money in order to maximally satisfy the general social needs and to achieve the best possible performance, i.e. to ensure the efficient functioning of the system. That is why knowing the concepts of statistic-mathematical and economic probability - will be necessary for both the procurement departments and the management team in the public institution in order to be able to support a performance-based public management.

In terms of performance, the figure below shows the manner of partial overlapping of activities within the risk management phases:

The stages of the risk management process	
E1	Risk identification
E2	Risk analysis
E3	Establishing risk tolerance
E4	Risk response (risk management)
E5	Monitoring the risk management process

E2	Risk analysis	
	A1	Revealing the importance of identifying the causes and sources of risk
	A2	Risk evaluation
	A3	Establishment of the probability and impact scale
	A4	Identifying possible errors

E2	Risk analysis

E2	A3	The establishment of the rating scale of probabilities and sources of risk will be based on two reasoning :	
		R1	Ways to reduce subjectivity
		R2	Consequences of risk materialisation

Figure no. 1 – Steps, actions and reasoning of the risk management process
(Source: author's processing)

For all public institutions, we developed along time systems of performance indicators, on a value scale, to reach the most objective possible appreciation of the level of the level of performance and costs practised for reaching that level of performance. For these reasons, the assessment of the risks of producing extra costs in public procurement is a first step towards reducing or even eliminating these costs. The measurement and risk assessment will contribute to the increase of the of public organisation management performance.

3. THE MANNER OF CONDUCTING THE DIRECT PURCHASE IN THE HOSPITAL UNIT

The direct procurement or purchase is not considered a public procurement procedure, but only a way to buy products/services/works, and its threshold may be changed in Romanian legislation depending on the possible European specifications that may occur whenever the European Union deems it necessary.

Because the public procurement law in force does not expressly regulate the organisation of direct purchase, public authorities may issue their own rules of conduct in the form of work procedures.

From a different point of view, direct purchase is the kind of purchase favouring, according to the EU Treaty: the attraction of more tenderers, and in this way the contracting authority has more options to make effective use of public funds; the access of small and medium enterprises to the business environment; the choice of the best price/quality/ratio.

On the theoretical level, direct procurement is not classified as procedure in se, the stages generally addressed in its practice could be:

a) identifying the needs based on necessity reports;
b) estimating the value of that need;

c) one checks whether the product has been purchased or will be purchased further in order to be able to verify the estimated total amount for determining the possibility of including the needed item in the direct acquisition category;

d) the market for the respective product is studied and a supplier is selected for placing an order;

e) the direct purchase file containing the necessity report, the order and a copy of the invoice issued as a result of the purchase shall be prepared;

f) the product will be verified/received and the invoice will be forwarded to the accounting sector.

Empirically, direct procurement in SEAP completes the following stages dictated by the electronic platform configuration and the logic required by practice:

Step 1: Correct identification of the product from a technical/qualitative point of view on the e-commerce site;

Step 2: The study the market for the product you sought and search for an optimal ratio between price and product properties; possibly the request of additional information about its properties;

Step 4: The selection of the supplier;

Step 5: The initiation and publication of the direct purchase on the SEAP electronic platform;

Step 5: The acceptance of the purchase, after the supplier's sale acceptance in SEAP;

Step 6: The listing the direct purchase in hard copy to complete the direct procurement file;

Step 7: The notification in the SEAP of the purchase if it exceeds € 5,000.

Practice has shown that there are nuanced issues with related to the direct purchase of products specific to a hospital unit. First of all, given the multitude of products with very similar characteristics, emphasis should be placed on the contracting authority, both on the correct identification of the required product and on its quality requirements. That is why, on the European level, emphasis is placed on the quality-price ratio. It is worth mentioning that in SEAP there is a wide range of offers for the same product, with quality differences sometimes very difficult to detect for the economist conducting the direct purchase.

4. IDENTIFICATION OF THE DIRECT PROCUREMENT RISKS IN HOSPITAL UNITS

In general, on the level of a hospital unit, the risks regarding the direct procurement in SEAP that can be encountered in practice are the following:

1. confusions due to the lack of clear specification of the product properties in the necessity report;

2. incorrect or incomplete / insufficient description of the product displayed in SEAP by the supplier;

3. random choice of supplier selection criteria for tenderers with the same price for the same product, displayed in SEAP;

4. the possibility that the product does not actually exist in the stock of the company chosen as supplier from SEAP;

5. urgent emergency purchase without adequate SEAP market exploration and testing;

6. existence of companies without commercial activity, but displaying products in SEAP;

7. generation of additional transport costs in case of return of non-compliant products;

8. suppliers' refusals to deliver the selected product for economic reasons (low price of the product, too low quantities required, etc.).

Obviously, one cannot exclude the possibility that during the purchase, „black swan" events may occur, with very low probabilities of occurrence but with very serious consequences.

One aspect of risks analysis is their classification into one of the following categories:

- organisational risks caused by insufficient or untrained human resource, by the lack of documentation, of procedures, or by ambiguities and unclear elements in their performance;
- operational risks, generated by erroneous or incomplete accounting records, inadequately archived supporting documents, etc.;
- instability risks, based on changes in the system functionality, managerial structures, legislation, organisational charts, etc;
- financial (economic) risks.

The most tangible way of observing the risks that occurred on the level of a hospital is to consult the issue identification and analysis charts (FIAPs), which are prepared by auditors in the audit mission having as objective the direct procurement. FIAP is a tool characteristic for the audit work, specifying: the issue, the finding, the cause and the consequence.

4.1. Statistic-mathematical and statistic-economic probability, variables of direct procurement risk analysis

The statistic-mathematical probability, viewed from the point of view of direct procurement, can be expressed as a ratio between the number of occurrences of an economic risk cause and the total number of events observed.

The statistic-economic probability seen from the point of view of the direct procurement is the ratio between the total value of the economic consequences of the events having the same cause, and the consequences of the economic materialisation of all the risks (money losses).

In other words:
- the statistic-mathematical probability represents a probability of occurrence and manifestation of a certain risk category;
- the statistic-economic probability represents the probability of the occurrence and manifestation of the respective risk materialisation resulting in additional expenses.

In other words, the materialisation of direct acquisition costs into additional costs cannot occur without emergence and manifestation, so the statistic-economic probability is the consequence of the statistic-economic probability, but it does not condition it to a certain extent, but stochastically influences its level.

In practice, based on the FIAPs elaborated for direct procurement, the most common risks are:

1. Inscription of inaccurate data imprinting in the necessity report (R1);
2. Unreality of the stocks displayed in SEAP (R2);

3. Relatively small product price doubled by a small quantitative demand (R3);
4. Procurement conditioned on the purchase of an obligatory minimum quantity (R4).

For the hospital unit where the study was conducted, the two probabilities expressed in relation to each other are highlighted in the graphical plotting below:
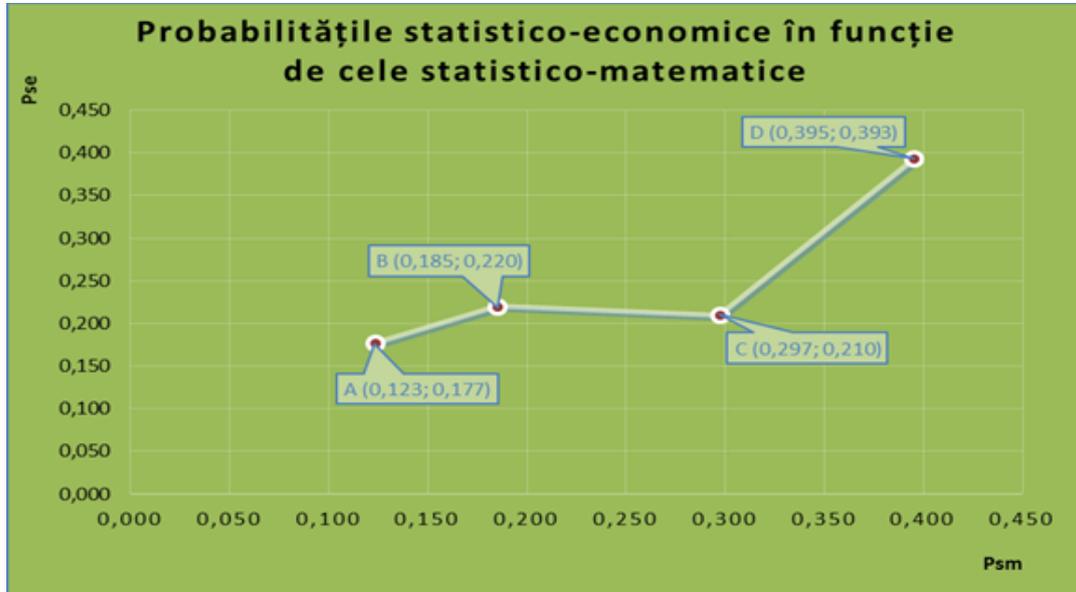

Figure no. 2 – Graphic plotting of statistic-economic probabilities depending on the statistic-mathematical probabilities
(Source: author's conception and processing)

Where :
- Risk statistic-economic probability: R1=0.177, R2=0.393, R3=0.220, R4=0.210;
- Risk statistic-mathematical probability: R1=0.123, R2=0.395, R3=0.185, R4=0.297

In Figure no. 2, we remark that points A, B and D appear to be in an almost linear relationship, which will be further investigated using a relation of the type:

$$\frac{y_i - y_{i-1}}{x_i - x_{i-1}}$$

If these relations calculated with the above formula were fairly close, then the linear dependence of the two probabilities would be almost certain.

By applying the above formula for the segments in Figure no. 2, the following values are obtained:

- for segment A – B: $\dfrac{0{,}220 - 0{,}177}{0{,}185 - 0{,}123} = 0{,}693$

- for segment C – D: $\dfrac{0{,}393 - 0{,}210}{0{,}395 - 0{,}297} = 1{,}86$

- for segment B – D: $\dfrac{0{,}393 - 0{,}220}{0{,}395 - 0{,}185} = 0{,}823$

Given that the values of the above relations are quite different and that point C was anyway considered out of the collinearity, we may conclude that the respective segments are not collinear. In other words, the hypothesis of linear dependence between statistic-mathematical and statistic-economic probabilities is false.

5. CONCLUSIONS

1. According to FIAP, the most common risks in direct purchases in hospital units are: inscription of inaccurate data in the necessity report; unreality of stocks displayed in SEAP; relatively small price of the product doubled by a small quantitative demand; conditional purchase of a minimum amount imposed;

2. Statistic-mathematical and statistic-economic probabilities are variables in interdependence relation as regards the direct acquisition in SEAP;

3. The statistic-economic probabilities are strongly influenced by the statistic-mathematical ones that condition their existence and set their level to a certain extent.

4. The statistic-mathematical probability is the independent factor and the statistic-economic one is dependent on the former, i.e. there is no money loss in the direct acquisition unless a risk is manifested;

5. According to the calculations, the two probabilities are not in a linearity relation;

6. Given the scattering of the 4 points in the plot plane in Figure no. 2 (i.e. low density), we may conclude that there is no connection between the cause defined (statistic-mathematical probability) and the effect assumed (statistic-economic probability) - of economic consequences manifested by money losses. In other words, the links between the causes of the risks and the consequences of their materialisation are random, probabilistic.

REFERENCES

Biji, E.M. & Lilea, E. & Vătui, M. (2007) „Statistics compendium applied in economy (in original in Romanian)". Bucharest: Oscar Print Publishing House

Bostan, I. (2010) „External public audit (in original in Romanian)". Bucharest: Universul Juridic Publishing House

Cuculescu, I. (1998) „Theory of probability (in original in Romanian)". Bucharest: All Publishing House

Duguleana, L. (2012) „Basics of economic statistics (in original in Romanian)". Bucharest: CH Beck Publishing House

Jula, N. & Jula, D. (2010) „Econometric modelling: Econometric and optimisation models (in original in Romanian)". Bucharest: Mustang Publishing House

Mureşan, A. & Rap, I. & Cleciu, V. & Dăscălescu, M. & Mihoc, M. & Filip, A.D. & Roşca, A. (2004) „Elements of probability theory and mathematical statistics for economists (in original in Romanian)". Bucharest: Todesco Publishing House

Pecican, E.Ş. (2005) „Econometry for economists. Econometry - Theory and Applications, second edition (in original in Romanian)". Bucharest: Economic Publishing House

Săvoiu, G. (2011) „Econometry (in original in Romanian)". Buchaerst: University Publishing House

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