

T-18 Evaluation of the effectiveness of operation PVT

Obsah

Introduction

1. Operational efficiency
2. Application of new tools
3. Operational efficiency of fuel warehouses

Conclusion

1. OPERATIONAL EFFICIENCY

Efficiency is explained by a number of definitions.

Jablonský J. (2004) defines efficiency as the ratio of desired outputs, which produces review unit, and input that in this production consumes.

Each unit is thus characterized by a set of input and output of numerical characteristics. The term production unit case can generally understand that forms an output whose production consumes some inputs. It is a homogeneous unit, performing the same or similar activity.

1. OPERATIONAL EFFICIENCY

Tasks for exercise

- Determine the effectiveness of the production units as specified example.
- Present new trends in traffic monitoring and their possible applications to the ACR.
- From the production units (fuel depots determine) the effectiveness of their order.

1. OPERATIONAL EFFICIENCY

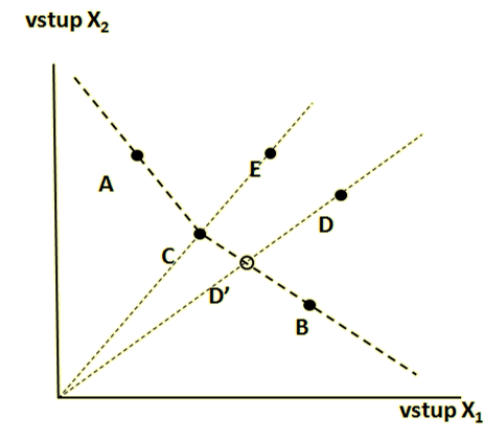
Task 1

The present set of production units determine their order on the basis of their operational effectiveness.

For the inefficient units propose measures to achieve an efficient state.

Create a graphical representation of the results.

sklad	vstupy	výstupy
	výdaje na personál [kč]	četnost výdejů PHM [výdej]
sklad 1	152 460	2 735
sklad 2	135 540	3 280
sklad 3	264 840	2 651
sklad 4	185 400	3 895
sklad 5	205 000	3 684
sklad 6	109 480	3 896



1. OPERATIONAL EFFICIENCY

Task 2

sklad	vstupy							výstupy			
	VAC [kč]	RTZS [kč]	VÚTZ [kč]	VPO [kč]	PP [ks]	VP [kč]	OS [m ³]	PV [výdej]	PAC [použití]	MSPHM [m ³]	PSZ [ks]
sklad 1	152 460	43 250	25 042	63 540	4	1 366 400	725	2 735	36	145	5
sklad 2	135 540	52 020	38 000	55 842	4	1 366 400	1 120	3 280	22	103	14
sklad 3	264 840	63 540	20 420	58 024	3	1 026 000	925	2 651	45	85	5
sklad 4	185 400	42 570	26 014	72 500	3	1 026 000	682	3 895	64	90	8
sklad 5	205 000	45 284	29 024	84 251	4	1 366 400	945	3 684	32	75	12
sklad 6	144 250	49 580	35 012	80 214	4	1 366 400	1 132	2 547	24	120	12
sklad 7	280 420	52 350	25 436	86 254	5	1 706 000	1 025	2 548	35	95	14
sklad 8	109 480	67 250	36 540	72 000	3	1 026 000	845	3 896	42	100	11

Annual expenditure

VAC = expenses for the operation of trucks (regular maintenance, inspections technological equipment vehicles, MOT, insurance)

RTZS = annual spending on revision of technological equipment store (dispensers, hydrocarbon emissions, static electricity)

VÚTZ = expenditure on maintenance of technological equipment warehouse

VPO = expenses for the operation of buildings (energy, water)

PP = number of staff

VP = expenditure on staff

OS = volume warehouse facilities

PV = number of dispensing PLO

PAC = frequency of use of road tankers

PSZ = Number of coiled shipments of PLO

MSPHM = the amount of stored fuel

2. APPLICATION OF NEW TOOLS

Writing of assessment model of production units



$$U_1 = \frac{u_1 y_{11} + u_2 y_{21} + \dots + u_n y_{n1}}{v_1 x_{11} + v_2 x_{12} + \dots + v_m x_{m1}} = \frac{\sum_{i=1}^n u_i y_{i1}}{\sum_{j=1}^m v_j x_{j1}}, \quad \leq 1$$

$$U_2 = \frac{u_1 y_{12} + u_2 y_{22} + \dots + u_n y_{n2}}{v_1 x_{12} + v_2 x_{22} + \dots + v_m x_{m2}} = \frac{\sum_{i=1}^n u_i y_{i2}}{\sum_{j=1}^m v_j x_{j2}}, \quad \leq 1$$

.....

$$U_k = \frac{u_1 y_{1k} + u_2 y_{2k} + \dots + u_n y_{nk}}{v_1 x_{1k} + v_2 x_{2k} + \dots + v_m x_{mk}} = \frac{\sum_{i=1}^n u_i y_{ik}}{\sum_{j=1}^m v_j x_{jk}}, \quad \leq 1$$

Kde:

u_{ik} a v_{jk} = jsou individuální váhy jednotlivých vstupů a výstupů pro hodnocené jednotky
 U = produkční jednotka.

3. OPERATIONAL EFFICIENCY OF FUEL WAREHOUSES

Economic order quantity shipments PLO (F-54)

When determining the strategy for the implementation of the order, the aim should be to minimize the sum of the cost of holding inventory and ordering costs called. Model economic order quantity (Economic Order Quantity, EOQ) is a concept which determines the optimal order quantities based on the ordering costs and maintenance supplies. The optimal order quantity occurs when ordering incremental cost is the incremental cost of maintaining inventory.

EOQ can be determined using the following equation

$$EOQ = \sqrt{\frac{2PD}{CV}}$$

3. OPERATIONAL EFFICIENCY OF FUEL WAREHOUSES

Task 3

- Determine the economic order quantity

druh výdajů	platnost	jednotek ročně	celková výše výdaje	výdaje ročně
revize protiexplozivních pojistek	5		5 600 Kč	1 120 Kč
revize elektro	1		2 500 Kč	2 500 Kč
kontrola emisí uhlovod.	5		5 000 Kč	1 000 Kč
přírozené úbytky paliva		1200	34 800 Kč	34 800 Kč
likvidace odkalené vody		40	100 Kč	100 Kč
čištění nádrží	5		7 000 Kč	1 400 Kč
technická údržba nádrží			300 Kč	300 Kč
elektrina el. signalizace			300 Kč	300 Kč
pracovní síla (hod)		20	2 000 Kč	2 000 Kč
C E L K E M				43 520 Kč

CONCLUSION

Evaluation of effectiveness of the operation in terms AČR
⇒ approaches correspond with civilian organizations.

Many management decisions are not in accordance with the principles of effective management of the limited resources.

Sophisticated systems provide relevant information for target-oriented analysis with consequent positive impact on operational efficiency. It is necessary to move beyond merely watching overconsumption traditional approach and adopt modern methods.

In the case of detection of aggressive driving or speeding is an important contribution to the prevention of accidents caused