THE ADMINISTRATION OF REAL LIFE SITUATIONS OF TRANSPORTATION PROBLEMS IN RATNADEEP SUPERMARKET

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ABSTRACT : The purpose of the project is to determine if we can reduce the transportation costs. We chose Ratnadeep supermarket and we have selected 15 products of personal care section for several retailers in Hyderabad, Telangana.

INTRODUCTION : In this Research paper. We have used Modification Distribution Method (MODI) to attain a feasible solution. The MODI method or (u - v) method provides a minimum cost solution to the transportation problems. This model studies the minimization of the cost of transporting a commodity from a number of sources to several destinations. The supply at each source and the demand at each destination are known.

Objectives- The to demonstrate how to apply the Modification Distribution Method (MODI) approach in real-life circumstances and it is also to minimize the transportation costs of the supermarket (Ratnadeep).

OUR ANALYSIS : As we chose the personal care section of Ratnadeep we visited 4 of it's branches

- ➢ Kompally
- ➢ Kothapet
- ➢ Karmanghat
- ➢ Vanasthalipuram

to find out about the demand, supply and price of the products, to calculate the transportation costs. The products are delivered to these branches from 4 warehouses

Personal Care Products	Quantity (per unit)	Price (per unit)
Soaps	575	40
Moisturiser	155	225
Shampoos	310	260
Toothpaste	450	105
Sanitizer	240	45
Perfume	92	415
Facewash	205	175
Body Wash	328	259

Deodorant	269	199
Hand wash	235	49
Shaving Cream	120	105
Mouthwash	135	214
Hair Oil	110	222
Lip Balms	50	119

- ➢ Beauty product dealers
- ➢ Cold care logistics
- ➢ Zephyr warehouse
- ➢ Ratnadeep warehouse

The demand of the products in the branches of Rantnadeep :

Personal Care Products	Kothapet	Karmanghat	vanasthalipuram	Kompally
Soaps	128	200	140	107
Moisturiser	46	35	38	36
Shampoos	90	75	73	72
Toothpaste	136	102	103	109
Sanitizer	74	55	53	58
Perfume	19	27	22	24
Facewash	48	53	52	52
Body Wash	79	82	84	83
Deodorant	69	65	68	67
Hand wash	70	54	56	55
Shaving Cream	35	29	26	30
Mouthwash	39	35	30	31
Hair Oil	34	24	25	27
Lip Balms	12	12	10	16

We have allotted different category of products to different trucks

A - Soaps, Shampoos, Body Wash, Hair Oil

B- Moisturizer, Shaving cream, Lip balm

C -Toothpaste, Facewash, Handwash. Mouthwash.

D - Sanitizer, Perfume, Deodrant.

SOLUTION :   **A :**

Column1	D1	D2	D3	D4	SUPPLY
S1	12	18	22	28	**93**
S2	18	15	14	11	**76**
S3	23	15	19	9	**78**
S4	9	25	17	13	**78**
DEMAND	**112**	**79**	**70**	**64**	

Column1	D1	D2	D3	D4	LHS	RELATION	SUPPLY
S1	34	59	0	0	**93**	=	**93**
S2	0	6	70	0	**76**	=	**76**
S3	0	14	0	64	**78**	=	**78**
S4	78	0	0	0	**78**	=	**78**
LHS	**112**	**79**	**70**	**64**			
RELATION	=	=	=	=			
DEMAND	**112**	**79**	**70**	**64**			

Total Min Cost = 4028

B :

Column1	D1	D2	D3	D4	SUPPLY
S1	12	18	22	28	396
S2	18	15	14	11	308
S3	23	15	19	9	307
S4	9	25	17	13	312
DEMAND	427	267	352	277	

Column1	D1	D2	D3	D4	LHS	RELATION	SUPPLY

S1	159	237	0	0	396	=	396
S2	0	0	308	0	308	=	308
S3	0	30	0	277	307	=	307
S4	268	0	44	0	312	=	312
LHS	427	267	352	277			
RELATION	=	=	=	=			
DEMAND	427	267	352	277			

Total Min Cost   16589

C:

Column1	D1	D2	D3	D4	SUPPLY
S1	12	18	22	28	185
S2	18	15	14	11	139
S3	23	15	19	9	135
S4	9	25	17	13	142
DEMAND	166	124	162	149	

Column1	D1	D2	D3	D4	LHS	RELATION	SUPPLY
S1	61	124	0	0	185	=	185
S2	0	0	139	0	139	=	139
S3	0	0	0	135	135	=	135
S4	105	0	23	14	142	=	142
LHS	166	124	162	149			
RELATION	=	=	=	=			
DEMAND	166	124	162	149			

Total Min Cost   7643

D:

Column1	D1	D2	D3	D4	SUPPLY
S1	12	18	22	28	310
S2	18	15	14	11	227
S3	23	15	19	9	247
S4	9	25	17	13	241
DEMAND	293	191	286	255	

Column1	D1	D2	D3	D4	LHS	RELATION	SUPPLY
S1	119	191	0	0	310	=	310
S2	0	0	227	0	227	=	227
S3	0	0	0	247	247	=	247
S4	174	0	59	8	241	=	241
LHS	293	191	286	255			
RELATION	=	=	=	=			
DEMAND	293	191	286	255			

Total Min Cost   12940

Conclusion-Thus we conclude that excel solver takes less time and is very easy to understand and apply.

We solved the transportation problem and optimized transportation costs of Ratnadeep super market with ease. Decision makers who deal with logistics and supply chain problems can make use of this method to optimize transportation costs.

We tried to analyze the market situation by considering the demand hypothetically and it's supply so that we could optimize the transportation costs as taken in the question.

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