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Statistical Model for Sell and Trade Decision Making

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Abstract: ***In the present paper explore application of Operational Research introduce a statistical model for forecasting of product sales decision making .Optimization and Conclusion making model is an important tool for sell Decision Making. As a methodology, statistical theory incorporates imprecision and subjectivity into the model formulation and solution process. Statistical theory represents an attractive analytical tool to aid research in production management when the dynamics of the production environment limit the specification of model purposes, limitations and the exact measurement of model strictures. This paper provides a survey of the application of statistical theory in production management research.***
Keywords: Sampling, frequency cumulative frequency, random number etc.

I. INTRODUCTION

Decision Making is main activity of human being. The beginning of decision making as a subjects of study can be traced most probably late 18th Centaury when various studies were made in France regarding Method of Election and social choice .Since the Initial studies this is evolve in to proper field of study. Decision making i.e. the study how decision is actually made and how they can made better or more successful. Decision Making defined to include Social Science and Hard. Application of statistical tools plays important role in Decision Making ,which we have considered statistical analysis of the classical theories of Decision Making , while Decision Making is under the condition of Risk have been modulated by probabilistic ,decision is made under condition of certainty when the out come for each action can be determine and ordered precisely. The Decision is always made under risk condition on other hand when the knowledge concerning the out comes consists of their conditional probability distribution. Optimization Problem of maximizing the utility several classes of Decision Making problems were usually recognize and classified as their concerning a single as well as

Multiple decisions making. The primary objective is shared by operational Research and A.I. which provides various methods and indicates way for problem solving as well as Decision Making .The dual approach is common for objective fundamentally different but in complementary

way. Artificial Intelligence problem solving techniques tend to be inferential and to relay on Expert Knowledge. Operational Research use algorithms and mathematical based approach A.I. emphasize an qualities aspect of problems .A careful Integration of these two approach to problem solving shows a significant promise for improving the capability and notability. The role of A. I. in O.R. is given by Simen who suggest that A.I. is a tool kit can be used by O.R. practisnors. A.I. plays important role in research and practice in the various areas such as Management Science and O. R. provides various problem solving techniques such as Graphical, Simplex methods, Game theory, Transportation, Assignments problems PERT and CPM etc. R. A. Philip in "An overview of simulation with O.R." advocate combine data exploration technique and theoretic decision making techniques of statistics, the problem formulation and Optimization technique of O.R. and the Expert systems approach of A.I. makes a new powerful form of decision making. T. J. Grant in lesson of O.R. from A.I. he concludes that O.R. can be learning from A.I. and visa versa .The contribution of A. I. to O. R. in the area of soft knowledge and ways to represent it as a part of search process and the benefits of incremental development of prototyping .Link between O.R and Expert system proposed A.I and Expert System can contribute to O.R in three areas .Situation which required model base on heuristic delivering guidelines which derived from models and the choice and formulation of the appropriate model to use expert system technology. The review and the following study show that statistic become More or less the integer part of operational management functions.

A. Statistical Modeling

Statistics System is a rule based system that use logic, rather than Boolean logic . logic is a computational paradigm that provides a mathematical tool for presenting and manipulating facts .It is based on the assumption in contrast to Boolean logic a statement can be partially true (or false) and composed of imprecise concepts. The present paper concentrate on its use in rule-based systems

model is a system of postulates, data, and inferences presented as a mathematical description of a unit. The model designing of complex real-world systems and processes are essential in many fields of science and engineering. The developed models can be use to describe the behavior of a system to predict the system's future development. The traditional approach to develop models known as white box modeling assumes that everything about the system is known a priori expressed either mathematically .In another common approach black box modeling a model is constructed entirely from data using no additional priori knowledge. A third, intermediate approach called grey box modeling takes into account certain prior knowledge of the modeled system to provide the black box models with human interpretable. Means that the modeling process efficiently uses the available a prior knowledge and concentrates its efforts in estimating. . Modeling techniques namely the construction of Rule-based inference systems can be viewed as grey box modeling because they allow the modeler to extract and interpret the knowledge contained in the model as well as to permeate it with a priori knowledge. However, the construction
of statistical models of large and complex systems with a large number of intricately related input and output variables is a hard task demanding the identification of many parameters .In this paper we give an overview of Statistics modeling and the application of artificial evolution to the Statistics modeling problem and also discuss some aspects related to interpretability requirements and real-world problem.
The Statistics modeling problem. The parameters of Statistical system can be classified into the four categories Logical parameters, Structural parameters, Connective parameters and Operational parameters

B. Approaches and Techniques

The first Statistics modeling works were very similar to, and inspired by the knowledge engineering methods used in Expert Systems. The increasing availability of input/output data of the modeled processes which is not specifically used to determine he structure or the parameters of Statistics model in the direct approach, together with the inherent difficulty to collect expert's knowledge and semantic criteria describe asset of properties that the membership functions of a statistics variable should possess in order to interpretability considerations to facilitate the task of assigning linguistic terms.

C. Knowledge Based System

The users of several Statistics system in the same environment to form a network of intelligent entities .Developer of knowledge based system (KBS) taken view to the problem solving task after require the use of domain is specific rule or thumb or heuristics. They provide technique for representing and reasoning with knowledge in a varity of the scheme including production rule or most common representation and allow one to heuristic representative with is contained from the express the consequent hold when some incident is true.

D. Method of Replication

Replication process consists following eight rules

1) Identify and simplify problem.
2) Incline of objective of the problem.
3) Hypothesis to choose appropriate Statistical model for problem.
4) Confirm that model represent the near solution.
5) Make testing of the model is constructed.
6) Examination the replication activity.
7) If necessary then change in the samples.
8) Organize the various values of the Choice criteria for the best fit.

E. Generation of Random Numbers:

Replication Models includes some elements of vagueness. The Random number were generated by Mid Square ,Spinning arrow, Dice rolling and Spinning Dice methods were used for generation of Random Number.

F. Random Number Can Be Obtained In Following Steps

1) Collect the Data.
2) Construct the Frequency distribution with these data.
3) Construct related frequency distribution.

4) Assign the coding system to generate the Random number.
5) Select available method.
6) Match the Random Number to assign the events and organized the result.
7) Repeat step 6 until the desired number of replication runs has generated.

E. Case Study

By random sampling and collected data of 20 shops for random 200 days the following result of three top most running product of three companies products as A, B,C;

G. Product A

No. Of Items	Days	F	CF	Random interval
22	10	0.05	0.05	00-04
23	12	0.05	0.11	05-10
24	15	0.08	0.19	11-18
25	41	0.21	0.39	19-38
26	70	0.35	0.74	39-73
27	30	0.15	0.89	74-88
28	20	0.10	0.99	89-98
29	02	0.01	1.00	99-100

H. Product B

No. of Item	Days	F	CF	Random Interval
22	12	0.06	0.06	00-05
23	20	0.10	0.16	06-15
24	28	0.14	0.30	16-29
25	41	0.21	0.51	30-50
26	48	0.24	0.75	51-74
27	40	0.20	0.95	75-94
28	08	0.04	0.99	95-98
29	03	0.02	1.00	99-100

I. Product C

No. of Item	Days	F	CF	Random Interval
22	12	0.06	0.06	00-05
23	15	0.08	0.14	06-13
24	25	0.13	0.26	14-25
25	30	0.15	0.41	26-41
26	40	0.20	0.61	42-60
27	28	0.14	0.75	61-74
28	28	0.14	0.89	75-88
29	22	0.11	1.00	89-99

BASED ON THE AVERAGE SALES

No. of Item	A	B	C
22	10	12	12
23	12	15	20
24	15	25	28
25	41	30	41
26	70	40	48
27	30	28	40
28	20	28	8
29	2	22	3

Methodology: Analysis Test Mathematical And Compute Replication 10 Days Demand Model For (A,B,C):

Days	Random Number			Demand		
	A	B	C	A	B	C
1	10	26	88	23	25	27
2	86	05	03	27	22	22
3	50	99	41	26	29	25
4	78	33	22	27	25	24
5	08	10	98	23	23	28
6	70	57	11	26	26	23
7	54	26	19	26	25	24
8	43	50	17	26	26	24
9	94	48	96	28	26	28
10	39	74	60	26	27	26

J. Comparative .Feed Replication Model

Days	Daily Demand		
	A	B	C
1	23	25	27
2	27	22	22
3	26	29	25
4	27	25	24
5	23	23	28
6	26	26	23
7	26	25	24
8	26	26	24
9	28	26	28
10	26	27	26

II. CONCLUSION

The necessary outcome of the present day cheap and self-motivated selling situation is forcing the market involvement with this system in the source fetter management system which can be enable them meet the need is per request designed through statistics modeling skills. The studied model based on the past data can be directly drawn from the different shops and choosing appropriate statistical tool and sampling etc. Such practice can be taken place in the same of the super markets mega shopping malls.

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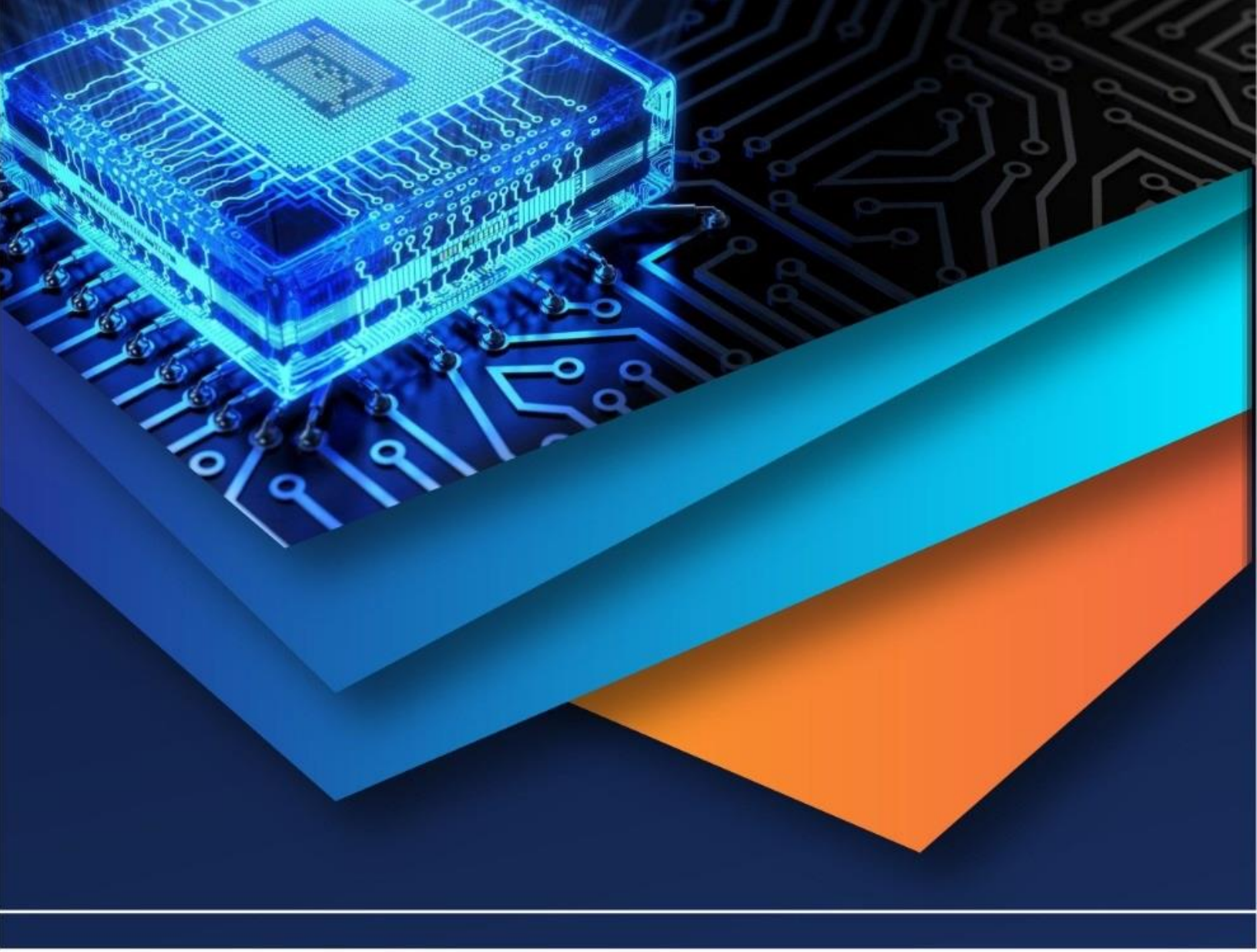

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