STUDY ON THE SUCCESS FACTORS FOR INNOVATIVE AGRICULTURE MACHINES OF SMALL ENTREPRENEURS

B.S.Ravikiran*

Dr.C.B.Vijaya Vittal**

ABSTRACT:

Small entrepreneurs play a vital role in economic development and provide economy with efficiency, innovation, competition and employment. They discover new ideas, business opportunities, bring together funds to establish a business, organize and manage its operations in order to provide goods and services. Entrepreneurs have strong convictions, self motivation, will to grow and prosper tremendously. Entrepreneurship is the risk taking ability of the individual coupled with correct decision making. In this research an attempt is made to explore the factors contributing to the success of the innovative products of small entrepreneurs statistically. Various statistical tools are used for the analysis. The data is collected from the users of innovative products of small entrepreneurs using questionnaire method. This paper provides guidelines for the success of the products for small entrepreneurs. This could help to improve the ability of small entrepreneurs to excel in an increasing competitive and complex world. A model has been developed to forecast the success or failure of the product which will be useful for small entrepreneurs before heavy investments are made.

***Keywords**:* Entrepreneur, success factors, forecasting model.

* Research Scholar, Dept of Mechanical Engg, SSIT, Tumkur, Karnataka

** Professor, Dept of Mechanical Engg, HMSIT, Tumkur, Karnataka

INTRODUCTION:

The end result of a manufacturing process is a product to be offered to the marketplace to satisfy a need or want. Thousands of new products are introduced to the market every year. Many small entrepreneurs developing new products and modification to the existing products have become a necessity and way of life. Discovering which factors or practices lead to business success and failure is a primary and yet unfilled purpose of business. Understanding user needs, external and internal communications, product advantages and marketing efforts have been found to be related to the product success of small entrepreneurs[1].The context was India, a developing nation bound in a multitude of traditions and inertia. In spite of the importance and magnitude of the monetary expense ,the area of new products is still fraught with failures, risks and difficulties [2].Entrepreneur are able to spot options and create new directions for an industry. Typically they deal with ambiguity and change and that is a prerequisite for success in today's fast paced business world. They can distinguish real from imaginary pitfalls and the brightest among them can turn error into opportunity[3].Entrepreneurs always operate at the edge of their competence , focusing more of their resources and attention on what they do not yet know(eg; investment in R&D) than on controlling what they already know. They measure themselves not by the standards of the past but by visions of the future. Innovation is an essential ingredient for today's social and economic growth. It improves the quality of life, raise standard of living and enables entrepreneur to grow and prosper. Innovation is creating and introducing new ways of doing things, better use of goods, more efficient services and systems. Innovation use knowledge and information. It is desirable to develop a model that enables accurate prediction of the outcome of a new product before heavy expenditures are incurred [4]. Though there are many models to predict the success of the products of big Entrepreneurs all existing models require large number of data to forecast and hence there is need to have model to visualize the products at the idea stage itself based on the innovators thinking and theirs capabilities with single set of data. An attempt has been made to predict the success of the products of small entrepreneur based on single data.

RESEARCH METHODOLOGY:

This research relied on primary data collected by the survey method. The data was collected from the users about the product of small entrepreneurs. The survey data were collected from users of Paddy Thresher. A set of 52 questionnaires was prepared. These questionnaires were grouped into eight factors viz; Consumer, Government Role, Economics of the product, Physical characteristics, Attributes of the product, marketing of the product, Entrepreneur's attribute, Environmental condition. Consumer factors refer to the consumer's purchasing capacity of the product. status of the consumer. Government role refers to certifications and support from the Government. Economics of the product refers to the cost resale value, fuel consumption savings in time. Physical characteristics refer to weight, compactness, space occupation, availability in different size and quantity. Attributes of the product refers to reliability, robustness, safety, efficacy, adaptability, repairability. Marketing of the product refers to after sales service, resale value, self repairable. Entrepreneur's attribute refers to the investment capacity of the Entrepreneur, his capability to take risk, his capability of involvement etc. Environmental condition refers to labor availability, Government policies. A five point Likert scale ranging from 1=Unsatisfactory to 5=excellent was used to measure the extent to which users respond to each variable. The users were from different locations, varying economic condition and rural background. The users were personally contacted and interviewed. They were given the set of questionnaire and asked to fill up the questionnaire and their opinion about the product. The factors are given below:

Sl No	Factors
G1	Consumer
G2	Government Role
G3	Economics of the product
G4	Physical Characteristics
G5	Attributes of the product
G6	Marketing of the product
G7	Entrepreneur's attribute
G8	Environment condition

Addresses of users of the products were obtained from the entrepreneurs who manufacture the product and market on their own. Paddy Thresher was taken for the research purpose. The survey was conducted in five taluks of Tumkur District in Karnataka State where paddy is a major

agriculture crop. The small entrepreneurs are KCN Industries,Coimbatore, Sri Balaji Agro Industries,Coimbatore, Kongu Engineering works,Coimbatore. These entrepreneur's machine are approved by Agriculture Department, Govt of Karnataka. They have produced innovative products namely Multi grain Thresher,Mini tipper.

RESULTS AND DISCUSSION:

1. Reliability of the data:

Using Reliability calculator the reliability and validity of the data was found. The Cronbach alpha was found out to be 0.987084958**.**This means that the data collected are reliable and valid.

2. Correlation Coefficient:

The correlation Coefficient analysis was carried out. The Correlation Coefficient matrix is given below:

Correlations: G1, G2, G3, G4, G5, G6, G7, G8

	G1	G2	G3	G4	G5	G6	G7
G2	-0.027						
	0.820						
G3	0.406	-0.097					
	0.000	0.416					
G4	0.106	0.181	0.275				
	0.374	0.125	0.019				
G5	0.453	-0.275	0.398	0.084			
	0.000	0.019	0.000	0.480			
G6	0.318	-0.010	0.114	-0.032	0.344		
	0.006	0.934	0.338	0.785	0.003		
G7	0.115	-0.066	0.003	0.092	0.314	0.039	

	0.334	0.580	0.981	0.439	0.007	0.741	
G8	0.246	-0.053	0.151	-0.022	0.354	0.385	0.361
	0.036	0.655	0.203	0.855	0.002	0.001	0.002

Cell Contents: Pearson correlation
P-Value

The Pearson Correlation Coefficient between the groups was obtained. It was found that G2 & G1, G6 & G2, G6 & G4, G7 &G3, G7&G6, G8&G4 are strongly correlated as the Pearson Coefficient is greater than 0.7 .

3. Regression Analysis:

The Regression analysis was done to predict the success of the product. Considering G7 (Entrepreneur's attribute) as dependent variable and other variables as independent variable a multiple regression model was obtained in the form of an equation:

The regression equation is

G7 = 3.46 + 0.0040 G1 - 0.0007 G2 - 0.0796 G3 + 0.0231 G4 + 0.0704 G5 - 0.167 G6 + 0.159 G8

Predictor	Coef	SE Coef	T	P
Constant	3.463	2.350	1.47	0.145
G1	0.00404	0.06036	0.07	0.947
G2	-0.00066	0.02851	-0.02	0.982
G3	-0.07964	0.05361	-1.49	0.142
G4	0.02312	0.02260	1.02	0.310
G5	0.07036	0.03143	2.24	0.029
G6	-0.1666	0.1153	-1.44	0.153
G8	0.15902	0.05591	2.84	0.006

S = 0.654429 R-Sq = 22.8% R-Sq(adj) = 14.5%

4. Hypothesis Testing:

The hypothesis testing was done among various factors. They are :

Sl No	Factors
G1	Consumer
G2	Government Role
G3	Economics of the product
G4	Physical Characteristics
G5	Attributes of the product
G6	Marketing of the product
G8	Environment condition

The hypothesis are:

H1: There is significant difference between consumer role and economics of the product

H2: There is significant difference between the Government role and physical characteristics of the product

H3: There is significant difference between marketing of the product and environment condition of the Entrepreneur

4.a Two-Sample T-Test and CI: G1, G3

Two-sample T for G1 vs G3

	N	Mean	StDev	SE Mean
G1	73	26.15	1.53	0.18
G3	73	30.64	1.69	0.20

Difference = mu (G1) - mu (G3)

Estimate for difference: -4.49315

95% CI for difference: (-5.02194, -3.96437)

T-Test of difference = 0 (vs not =): T-Value = -16.80 P-Value = 0.000 DF = 142

H1: There is significant difference between consumer role and economics of the product as the P –value is <0.1

4.b Two-Sample T-Test and CI: G2, G4

Two-sample T for G2 vs G4

	N	Mean	StDev	SE Mean
G2	73	7.79	2.92	0.34
G4	73	27.67	3.66	0.43

Difference = mu (G2) - mu (G4)

Estimate for difference: -19.8767

95% CI for difference: (-20.9588, -18.7946)

T-Test of difference = 0 (vs not =): T-Value = -36.32 P-Value = 0.000 DF =137

H2: There is significant difference between the Government role and physical characteristics of the product as P-value is <0.1

4.c Two-Sample T-Test and CI: G6, G8

Two-sample T for G6 vs G8

	N	Mean	StDev	SE Mean
G6	73	13.562	0.764	0.089
G8	73	20.71	1.55	0.18

Difference = mu (G6) - mu (G8)

Estimate for difference: -7.15068

95% CI for difference: (-7.55165, -6.74972)

T-Test of difference = 0 (vs not =): T-Value = -35.36 P-Value = 0.000 DF =105

H3: There is significant difference between marketing of the product and environment condition of the Entrepreneur as P-value is <0.1

5. Analysis of Variances (ANOVA): One way ANOVA analysis was done with respect to dependent variable G7 and an independent variable to determine which variable is closely related to G7. It was found that G7 is very closely related to G6 as P value is near to zero

5.a One-way ANOVA: G7 versus G6

Source	DF	SS	MS	F	P
G6	3	3.924	1.308	2.81	0.046
Error	69	32.158	0.466		
Total	72	36.082			

S = 0.6827 R-Sq = 10.88% R-Sq(adj) = 7.00%

But other variable G1,G2,G3 are not closely related to G7 as compared to G6 which is as shown below.

5.b One-way ANOVA: G7 versus G1

Source	DF	SS	MS	F	P
G1	7	3.539	0.506	1.01	0.433
Error	65	32.544	0.501		
Total	72	36.082			

S = 0.7076 R-Sq = 9.81% R-Sq(adj) = 0.09%

5.c One-way ANOVA: G7 versus G2

Source	DF	SS	MS	F	P
G2	4	2.500	0.625	1.27	0.292
Error	68	33.582	0.494		
Total	72	36.082			

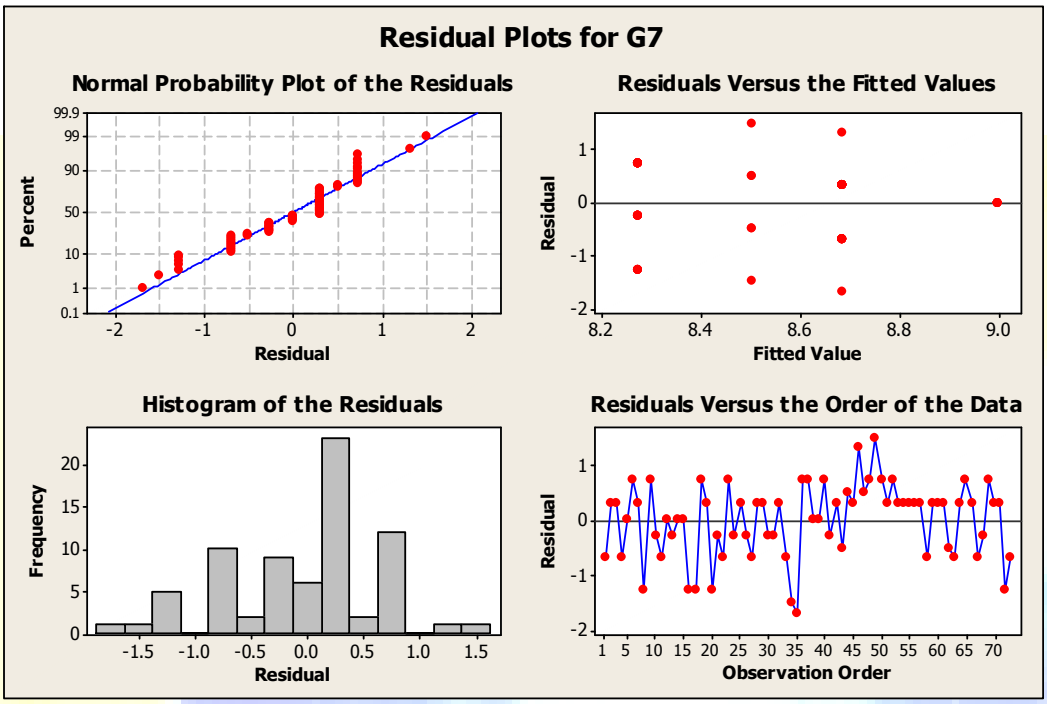
S = 0.7027 R-Sq = 6.93% R-Sq(adj) = 1.46%

5.d One-way ANOVA: G7 versus G3

Source	DF	SS	MS	F	P
G3	9	5.041	0.560	1.14	0.351
Error	63	31.041	0.493		
Total	72	36.082			

S = 0.7019 R-Sq = 13.97% R-Sq(adj) = 1.68%

The relevant graphs are as shown below:



CONCLUSION:

It is found that for the success of product Entrepreneur should concentrate on all eight factors. Each factor has an impact on the success of a product. Especially for a new Entrepreneur Government support is most important. An Entrepreneur should have sufficient resources to convert customer needs to customer demand. The products which have failed lacked in providing the perceived superior advantages or the entrepreneur failed to effectively communicate to the user superior advantages. Entrepreneur lacked the credibility, competence and financial resources. Each entrepreneur failed to anticipate the problems in the turnaround of money and the consequence with respect to the successful commercialization the product. It may be concluded that the entrepreneur should give equal importance to all factors. If he neglects one factor it will have cascading effect on other factors.

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