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ESTIMATION OF SMALL-SCALE INDUSTRIES PRODUCTION FUNCTIONS

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Abstract- This study aims to estimate the production function of the whole small-scale industry based on Y=ALαKβ of kaab Dogloss the property of which is its being a nonlinear Regression.
In order to find that what an industry we must set up in a village or on what kind of industry we must invest to obtain a maximum value added product and increase the employment there, we must know the characteristics of that industry, learn about the bearings or tolerances of the investment and employment and see how many employment, we can create by such and such investment.
Besides, we should obtain the profitability of each production factors (Labour & investment) to determine that we must invest on what type of industry to turn to our advantages.
For such purpose, what seems is that we should get the production function in an industry as required and then analyze it.
Keywords: kaab Dogloss, production function, small-scale industry, Y=ALαKβ

Introduction
A small-scale industry as an economic development parameter is well regarded as an efficient one in most world nation, in particular in those of developing [1].Small-scale industries play significant part in employment and production. They motivate the capitals and as a result they contribute to the income distribution of areas by raising the profits. A small-scale as a new machine to the rural development can play drastic roles in rural development [1].The main sectors are:
1. Unemployment in rural areas
2. Lower level incomes of rural people than those of urban populations
Therefore, we find from the accomplished consideration that an established and developed small-scale industry is a remedy to the situations of rural areas in the country. This study tries to make as understand what kind of industries shall we set up in a village to increase the earnings of rustic people. This requires us to estimate the production function of small-scale industry.Therefore, we use Y=ALαKβ, a non linear regression to estimate small-scale industries equatios, estimate the small-industries special to rural areas and identity their characters.

Research model
Y=ALαKβ production function is that of economic the use of which is limited to economic analyses. Its specifications are:

1. It is the most commonly applied function of production with wide ranges of application.
2. This Y=ALαKβ was used in many statistical studies concerning the relationship between the scale of production and values of production factors in an industry.
3. The properties of Y=ALαKβ are many the uses of which can be made for extensive discussions on industry.
4. This function is that which shows an economic production because its gradients of inclination of Y=ALαKβ are always negative; that is to say, it only acts in an economic area and that of production [6].No non-economic area means nothing to it and therefore this function is necessarily economic because its second phase and frontiers are desired ones from economic point of view. The applied value of variable's inputs must be positioned at this stage. If it is, however, supposed that a production takes place; the value of it is such that it must be at second stage.
5. In this function α,β are outputs of capital & labour. Because this function has the same property of homogenous nonlinear one and enjoys a degree 1. The specifications are combined with α+β=1 condition and coefficients of production. To prove this we note the following requirements; if
6. This function shows that the course of a geometric topography (location) of points is the minimum amount of cost for different sums of products. This course is of a curvature in its

general position and so we can get the least amount of cost.

7. Y=ALαKβ is a sample of replacement equation. In earlier equation this replacement is one production factor that is rsed for another production factor; that is to say, in production phases if there is a shortage in the number of production operators, one can use the least number of them instead of just the other way round.
8. The properties of this function are such that one may use them in economic planning. Once α,β has been estimated, one can use econometrical method α+β, specifies its output and uses it in economic planning.
9. This function is used in different countries one result of which is that it has been used in the industries of different countries.
10. Final profitability (MPPL) and (MPPK) can be obtained as functions of a production factor rate.
    MPPL=A(1-α)KαL-α=(1-α)A(-K/L)α
    MPPK=AαK α-1(1-α==αA(-K/L)α-1
11. This property is raised as EULERs theorem. This theorem says if we pay any factor the final size of profitability the same as of their final production, all products shall be divided between production factors without reduction. In other words: MPPL.L+MPPL.K=α

Methodology

The statistical community of this research study is the whole National Iranian small-scale industries.

Years of census taking are F.1996-F.2006 the senses of which are taken by the Iranian National statistics Center.

It consists the whole small-scale, industries country-wide

Data collection methods through questionnaire:

Recovery and classification of statistical data concerning small-scale data were made out of documents taken from the Iranian National statistics Center.

In this study, Y=ALαKβ model, a non-linear Regression model, has been used. This model is processed by means of spss l6 software and a non-linear rey regression Analysis and the model's coefficients are calculated.

Cobb-Douglas production function: Briefly speaking, the economic interpretation of a production mathematical function and a discussion on its coefficients are:

A. If α +βzl, the output is an ascending scale:
   It suggests that the double are labour, capital, more than double the production will be.
B. If α+β=1, it is on a fixed scale. It suggests that if we double labour and capital, the production will double.
C. If α+β <1, the output is on the descending scale: It suggests that itf we double both labour and capital, the production is cut down more than double.
D. The more is A the more advanced and more improved is the technology.

Given what was said above, we can investigate the behavior of that industry. The procedure introduced by as for the preparation of a mathematical model, can be applied for individual industry depending on how they are analyzed separately and individually.

Let us show a way by which we are able to choose industries for villages in order to provide opportunities for rural people to be prevented from moving from villages and also provide again value-added handicrafts for them.

Statistical review on research subject

This study aims to recognize the structure of small-scale industries in order to analyze the function of small-scale industry production to demonstrate in research theories how many production factors are combined together so that the degree of observation together with the obtained model may get the different combinations of work forces and production inputs the quantity of which are necessary bearing in mind the theory of research.

This study reviews the small-scale by means statistical data and makes regression model and appropriate mathematical equation for small-scale industry; that is to say, we want to prove the theory of research. To this aim, once the mathematical equation [5] for production has been provided, we determine which one of these equations is solved for different industries. This provokes us to determine which one of those industries can be established in the villages to bring the most bulky employments and profits.

Processing small-scale industries equations:

We use , in this study, Y=ALαKβ to estimate studied small-scale industries (handicrafts) in accordance with the literature on issues studied; that is to say, after collecting data and classifying them by using SPSSL6 software and according to Nonlinear.

Regression Analysis, we processed the model as mentioned above on data that have been obtained and calculated the coefficients of small-scale industries.

Table 1: Result taken from a statistical process by using Y=ALαKβ and both statistical methods of products values and outputs values for the whole handicrafts in national scale.

To compare the two models that have been obtained by using two output methods, given the table as stated above both models are very good because, Anova test model has shown them significant and also they enjoy R2 coefficient that is very good.

1. In general, the small-scale industries as included in the equation in the form of Y=ALαKβ is:
   Y=2.44L0.081K0.97
   α+β≤ 1

2. In general, the industries in an equation in the form of $Y=AL^{\alpha}K^{\beta}$ is
$Y=2.374L^{0.656}K^{0.974}$
$\alpha+\beta \leq 1$

Conclusion

It is evident from rural small-scale industries (handicrafts) that there is a wide range of relationship between worker and production.

If $\alpha+\beta=1$, the output is on a fixed scale; that is to say, if we double labour and capital, the production shall be doubled and if $\alpha+\beta<1$ and in case both labour and capital are doubled, the production shall reach a little less double as many as its real value

A is high and thus the technology applied is more improved and advanced

The findings from Cobb Douglas equations processing in small-scale industries lead us to the fact that handicrafts (small-scale industries) are good for national industries; that is to say, the development of such industries brigs about increased products and employment in national villages in cost effective way.

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Table 1.

Significant level of non-linear Regression model of $Y=AL^{\alpha}K^{\beta}$	**R2**	**N**	**Value β**	**Value α**	**Value A**	**Production Function Equation**
$Y=2.37L^{0.056}K^{0.974}$ Based on output value					good	
$Y=2.37L^{0.056}K^{0.974}$ Based on output value					good	