

A Binary Choice Model For Optimum Entrepreneurial Development In An Economy Facing Environmental Constraints

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Abstract

This study describes a methodology for estimating a choice model for an optimum entrepreneurial development which allows the funding and other intervention policies to enhance the formation of small and medium enterprises to be used in developing national policy agenda. Five policy objectives are described for the Nigerian unique situation. But whatever national policy objectives are deemed relevant in any situation, we propose that such policy objectives be chosen and implemented in a transparent manner and supported by annual on-site monitoring and performance evaluation for a period deemed necessary to enable the goals to be realized.

Introduction

There are several strategies to bring about economic, social and cultural development. One of these is entrepreneurial development. Entrepreneurial development goes beyond starting a new business. Entrepreneurial development calls for sound management skills and the perseverance to endure frustrations, losses and other disappointing experiences and the desire to adapt to change. People decide to start their own business for numerous reasons even when they do not possess any of the skills that can make them successful business owners. A few others decide to go into business because they come from a family of business owners but fail to realize that they do not possess the attributes that made their ancestors successful. Many potential entrepreneurs who have no start-up capital believe that financial support is the most important thing they need to be successful business owners. Obviously it is important for prospective business owners to possess relevant skills; however since small business owners usually need one kind of governmental intervention or the other, it is important that governments have a clear idea why they are promoting entrepreneurial development.

Entrepreneurial development should be undertaken with specific goals in mind. In many instances, governments embark upon entrepreneurial development with the sole purpose of reducing poverty. In their meeting at the United Nations Summit in year 2000, several heads of state acknowledged that one of the ways to reduce poverty fast is to create a good investment climate to encourage firms, small and large to invest, create jobs and increase productivity, (Goldin et. al., 2000). Notwithstanding this declaration, many countries continue to rank their commitment to entrepreneurial development very low in the order of their national concerns. This study considers two aspects of entrepreneurial development, namely (1) governments should not only make unfulfilled declarations regarding entrepreneurial development as medium of job creation; (2) governments should use entrepreneurial development to formulate important national goals and objectives. Such national policy objectives should be used to determine what types of assistance are desirable, (Goldin et al., 2000).

A New Concept of Entrepreneurial Development.

There are two problems with entrepreneurial development as currently being implemented by many governments. The first is that many governments pay only a lip service to their policy of entrepreneurial development. They make many declarations but fail to follow up with a sustained effort towards implementation of such declarations, and cite several constraints, including budgetary constraints, which in many instances could run into several millions in local currency for their limited commitment to meaningful entrepreneurial development.

Entrepreneurial development should not be viewed only as an instrument for economic development. It should be viewed as instrument for economic, social, and cultural development. Governments should encourage the formation, empower, and nurture the growth of enterprises, which can in turn be used to foster strategic national goals and objectives.

The second is that they have a very limited notion of entrepreneurial development. It is important, therefore for governments wishing to embark upon a policy of entrepreneurial development, to be sure that such developments are driven by well-defined and measurable national policy objectives upon which accomplishments could be measured. Entrepreneurial development should be considered both as a means for solving existing problems, such as poverty reduction, and as an instrument by which national development goals and objectives can be designed and measured. We call this optimum entrepreneurial development. Optimum entrepreneurial development is defined as a process of empowerment, which includes both the promotion, encouragement and the facilitation of the ownership of small and medium enterprises, and the use of those enterprises in the development and realization of declared national goals and objectives. Building an optimum entrepreneurial development model can be done in two ways. The first is to build a model that depicts a set of measurable national goals and objectives; the second is to construct a model which describes the formation and empowerment of small and medium enterprises which, in turn are used as instruments for achieving the national goals and objectives relevant to the socio-cultural environment. The goals should be driven and reinforced by transparency in the selection of enterprises to be empowered and provided with funding, and the choice of other development and intervention measures. The choice of candidate enterprises should be done by objectively assessing the activities of such enterprises as appropriate, and the ranking of such activities to determine how they can conform to the achievement of the national goals and objectives. It is possible to view entrepreneurial development as a policy of encouraging the formation of as many enterprises as possible nationwide, but such a policy would not be optimum, unless the development is tied to some measurable national goal. Entrepreneurial development goals can be looked at as a dynamic concept, which can be assigned values capable of changing over time and over the course of political regimes.

Optimum Entrepreneurial Development Models:

Many of the factors that determine successful entrepreneurship are identifiable and measurable, but many more are not. These non-quantifiable factors affect entrepreneurial development and its success or failure in many uncertain and unpredictable ways. Some of the constraints facing entrepreneurial development in many developing economies include poor management experience, poor technological and other skills, cultural rigidity, and more importantly the absence of governmental commitment to genuine entrepreneurial development. Another serious constraint is the narrow interpretation of the meaning and scope of entrepreneurial development. Many governments tend to consider entrepreneurial development as an instrument for solving existing problem, such as poverty reduction.

We believe that through the appropriate funding of entrepreneurial development, many national goals and objectives can be formulated, measured and implemented. A few among many such goals are technology development, gender participation in social and economic affairs, and a culture to embrace ethics in business as well as produce and market good quality products. We can achieve these national goals by consciously providing funding to small and medium enterprises that demonstrate a commitment and ability to absorb intervention and to accomplish specified national goals and objectives. They may not have all the desired skills, but must demonstrate the will and the inclination to embrace change and learn the skills which they do not possess. Although five goals and objectives considered to be unique to the Nigerian environment are considered in this study, there are an infinite number of such goals and objectives, depending on the level of development and the culture of the country. In this study, we attempt to construct a choice model, which can be used as a development tool and as a tool for designing multipurpose national goals and objectives. The model is based on the existing skills and skills to be acquired, and the ability of the institutions to absorb and effectively use the governmental innovations. The model assumes that governments embrace strong commitments to remove any environmental and institutional constraints which pose serious problems to the realization of the goals. It assumes that there is a shared commitment between government and the private sector to be transparent and to persevere. The study is based on a sample of 190 small and medium sized enterprises in Nigeria drawn from a survey conducted during the summer of 2002.

The estimated model is a probabilistic choice model representing each of the 5 objective functions Y_m , described in the text:

$$Y_m = \text{Log}(\alpha_0) + \alpha_n \text{Log}(Z_n) + \alpha_j(X_{ja}) + \alpha_h(X_{ha}) + \alpha_k(X_{ka}) + \varepsilon_{xz} \tag{1}$$

Where Y_m represents 5 discrete choice objective variables associated with Z_n continuous measurement instrumental variables. There are three such variables in this study, representing gross sales, employment and start-up capital. X_j represents discrete entrepreneurial intervention development assistance dummy variables, X_k represents owner-specific characteristics capable of stimulating entrepreneurial development, and X_h is a vector of discrete environmental and institutional constraint variables. X_a represents a vector of discrete owners-specific and environmental and institutional variables, which are not consistent with entrepreneurial development initiatives. ε_{xz} is the white noise standard error assumed to be normally distributed with zero mean and standard deviation σ_{xz} . In order to construct the choice system, a set of owner-specific skills and institutional characteristics X_k , and a number of intervention assistance variables, X_j are considered necessary. X_h is a matrix of environmental and institutional constraint variables, and n is the number of continuous choice variables in the Z_n matrix considered to be relevant to the estimation of the choice system.

$$\partial y / \partial x_j > \partial y / \partial x_{ja} \text{ for all } x_j = 1, x_{ja} = 1 \tag{2}$$

$$\partial y / \partial x_k > \partial y / \partial x_{ka} \text{ for all } x_k = 1, x_{ka} = 1 \tag{3}$$

$$\partial y / \partial x_h < \partial y / \partial x_{ha} \text{ for all } x_h = 1, x_{ha} = 1 \tag{4}$$

This means that if the development intervention assistance is provided, or there is a favorable institutional environment, the value of the objective variable will be greater than when it is not. Similarly, whenever the owner or the management of an enterprise possesses the relevant skills, or the institutional environment surrounding the enterprises are congenial or flexible enough to enable the enterprise to absorb the development intervention assistance, the entrepreneurial development goals will more likely be realized than when such conditions do not exist. On the other hand, the value of the objective choice variable is bound to be lower in every situation where environmental constraints exist than when they do not.

Entrepreneurial development goals in a developing economy like Nigeria could include: (1) nation-wide entrepreneurial development for the achievement of income and job growth. The multiplier effect of job creation through entrepreneurial development is far reaching; (2) The second is nation-wide technology development in selected sectors, which are able to absorb technological innovations; (3) The third is ethics in business and a commitment to embrace product quality improvement; (4) The fourth is planning skills development, which can be used to quantify, evaluate and used in developing appropriate strategy to eliminate environmental constraints; (5) The fifth is gender participation. The model presented in the next paragraph expresses the structural relationship of the various policy innovations, which may explain these objectives.

Estimation Procedure:

The first task was to select appropriate instrumental variables that can be used as proxy variables for each of the entrepreneurial development policy objectives. The next task was to undertake a careful data analysis to determine the nature and the degree of statistical relationship among the remaining variables in the system. For the models in which binary variables were used as the dependent variables, a binary two-limit probit model was used, but in the models in which continuous variables were used as dependent variables, the choice was between two-stage and the least squares methods. A two-stage method was first tried with very unsatisfactory results. In the majority of the cases, the least squares method yielded the expected signs and lower sum of squared residuals and was therefore selected as the choice estimation model.

Estimating Job Growth through a Nation-wide Entrepreneurial Development

The model is used to test the hypothesis that a nation-wide entrepreneurial development policy can be used for poverty reduction. Entrepreneurial development is a popular poverty alleviation policy embraced by many

developing countries and International Financial Institutions, such as the World Bank, the International Monetary Fund (IMF). They believed that entrepreneurial development can be used to create jobs and generate income. We consider that policies of entrepreneurial development and job creation are mutually complementary, and assume that the same set of innovation policies should be structurally relevant to the models that symbolize these policies. For these reasons, International Financial Institutions have been promoting job creation through their funding of entrepreneurial development worldwide. A sustained entrepreneurial development in a way that incorporates funding, monitoring of performance, and injection of modern management and technology development is a powerful instrument for achieving job growth and poverty reduction objectives.

Two methods are used to test this hypothesis. The first version of this model uses a binary dummy variable for small and medium sized enterprises as the dependent variable. Some of the independent variables include start-up capital, management skills, financial and technical assistance. Whether or not this can adequately be used to describe a suitable employment generating model depends on the management and technological orientation of the enterprises depicted in the system. The second version of the model uses the logarithm of the employment in the enterprises represented in the system as the dependent variable. Although the first version relies heavily on owner-specific characteristics, as against industry-specific characteristics used in the second version, both models seek to use the same set of independent variables. Some of these independent variables include sales growth, management, technological orientation, and a variable representing the industry in which the enterprises belong, (Meyanathan, Dhevan and Munter, 1994). Revenue and expenditure planning dummy variable, and a dummy variable for the use of professional advice and regular management training of employees are examples of management variables considered important in the models.

Estimating a Technology Development Choice Model

This choice model is used to estimate technology development policy. The relevance of this model is in its ability to capture the technological trend in the 21st Century global economy. With this in mind, it is important to develop a strategy to get the small and medium sized enterprises to be prepared to play an effective role in the national and global competitive arena, (Dahlman and Westphal, 1981), (Bhalla and James, 1991). Technological skills increase efficiency, and productivity. This is very beneficial in stimulating job growth. Daly (2002) proposes a variety of parameters to assess productivity growth, including productivity of enterprise, quality of goods and services produced by the enterprise, and the rate of innovation absorption, etc. Technological orientation is measured in this study by a proxy variable equal to 1, for the respondents who indicated first preference for technical assistance from the list of financial assistance; technical assistance; and counseling, monitoring and management assistance; and also gave the highest ranking to the use of government assistance to acquire technical capability. Industry, education, management orientation and age of enterprise are also among the important variables in the model.

Estimating Ethics in Business and Product Quality Improvement

This model seeks to explain a commitment to improved product quality and subscribe to high moral ethics in business. For more on the importance of product quality see (Daly, 2002). Unethical business practices are commonplace in Nigeria as in many countries around the world. These include adulteration of product quality, fony accounting practices, money laundering and a whole array of shady business practices. The model uses owner and industry characteristics because these are considered to be moral and ethical issues. Enterprise characteristics are used as proxies for business environments, and owner-specific characteristics are used as behavioral traits which describe unacceptable ethical business conducts among individual business owners and managers. Industry variables which significantly promote a commitment to embrace continuous product quality improvement are tenure, and gross sales. While enterprises with long tenure embrace a culture of product quality improvement, large enterprises do not. This means that public policy should be directed to encouraging small enterprises to continue to embrace corporate policy to produce and market good quality products. With regard to large enterprises which are yet to embrace this culture, persuasive means should first be used, before a resort to legal sanctions. Owner and management variables which are statistically significant are gender and the inclination to investigate customer complaints. To stamp out unethical business conduct, manufacturers should do everything to ensure that the

products that bear their trademark meet the highest quality standard before they are being distributed. The business community and trade associations should set in motion a policy to hold all the distributors and marketing outlets accountable for any defective products found in their distribution chain, which are not traceable to their manufacturing plants. The Nigerian Chamber of Commerce, Industry, Mines and Agriculture, and the federal government should be partners in the fight to stamp out all forms of bad business practice.

Estimating Expenditure and Revenue Planning Model

A policy to encourage expenditure and revenue planning is explained in the fourth model. Planning skills development is a management issue, but is considered a policy objective in its own right because planning can help the enterprise to focus on its mission and shape its vision in such a way that can easily contribute to its success. Planning that starts at the enterprise level may assume a national significance when a culture of paying attention to details and corporate mission comes into being and ultimately adopted nation-wide. With this model we can quantify the constraints in the economy, beginning at the enterprise to the national level, and design strategies for eliminating them. This model is explained mostly by management variables, which include annual budget variable, technology variable, management meeting variable, and employee job description variable. Gross sales and financial constraint variables are also strongly related to expenditure and revenue planning skills development, but with the wrong signs. Education and industry are clearly two very important institutional variables which play important role in helping to bring about a culture of expenditure and revenue planning, beginning at the enterprise and spreading right up to the national levels. The predictability of this model is rather weak, given that many of the key variables are statistically insignificant.

Estimating Gender Participation and Enhancement Model

Gender participation and enhancement is a socio-economic policy objective. The survey data reveals a paltry ratio of female participation in small and medium sized business ownership of only 23.1%. This needs to be drastically increased if the Nigerian government's policy of rural poverty eradication is to be successfully achieved. By integrating women into the work force, we are not only according women their constitutional right; we are also helping to eradicate poverty. Although Nigerian women are to be found in large numbers in the market retail trade, (Pagan and Sanchez, 1999), many of them are to be found in the beauty and salon business, and in the retail of pharmaceutical products. Many of the variables, such as age, education, management and technology variables are not statistically significant in the model rendering the predictive power of the model very weak. The study reveals that educated women are not sufficiently involved in entrepreneurial development in Nigeria. If the role of women in employment and income generation is appreciated, effective public policy must be directed into encouraging active participation of women, generally and educated women in particular in entrepreneurial development. There are many areas in which public policy should be directed to enhance gender participation. Some of these include financial assistance for business start-up, management skills development assistance, education and training and paying adequate attention to the selection of industries in which the most results could be realized. Gender participation can be most effective in industries in which female skills can be easily adapted for their optimum participation, (Hersch, 1991), (Gary, 1996), (Brown, Moon and Zoloth, 1980). The choice of industries varies from country to country, depending on the extent to which cultural and religious beliefs that influence the role of women may allow for the implementation of such policy.

Empirical Results

Equation (1) is estimated to test a number of null hypotheses for the five national entrepreneurial development policy objectives under the assumptions indicated in (2) to (4). The empirical results are reported in the Appendix. The empirical results reveal that owner characteristics are not generally statistically significant in many of the models. On the other hand, institutional characteristics, such as start-up capital, tenure of the enterprise, industry variable, management and technological orientation, as well as expenditure and revenue budget planning variables, are statistically significant in many of the choice models. Employee code of conduct, employee job description and expenditure budget dummy variables, are statistically significant at 10% level of significance, and hence judged marginally consistent with modern management orientation model. Interestingly, higher education

variable is statistically insignificant only in the technology development policy objective. Characteristic of most cross section-based data models, most of the variances in the models estimated are unexplained. One plausible reason for this may be on the difficulty of choosing suitable proxy variables for the dependent and the innovation variables. In some cases, we have failed to obtain the right sign for the variables considered to be critical for the choice model. One reason for this is that the Nigerian data do not conform to standard economic theory due in part, to institutional rigidity, poor quality of infrastructure, and other environmental constraints facing most of the enterprises.

Conclusions and Policy Recommendations

This study describes a methodology for estimating a probabilistic choice model for an optimum entrepreneurial development, which incorporates encouragement of formation, empowerment and providing of funding of small and medium enterprises into the development of clearly defined and measurable national policy objectives. A multilevel development strategy is explored in this study in which we use five national objectives considered to be relevant to the Nigerian situation. At the enterprise level, we explore the effect of environmental and institutional characteristics, such as sound modern management and technological orientation among others, on entrepreneurial development. At the government level we stress the importance of transparent and a sustained intervention to allow small and medium enterprises to be used in bringing about an effective national policy objectives. The significance of this methodology is in using entrepreneurial development as an instrument for developing national economic, social and cultural policy objectives.

It is evident from these results that unique owner-specific skills and institutional arrangements are required for the formation and empowerment of enterprises, which can be used to formulate national goals and objectives. Among the most significant owner-specific skills are perseverance and the inclination to absorb intervention and adapt to change. Others are planning skills, management and technological orientations. One of the important institutional arrangements is transparency. The choice of the objectives should be driven by objectivity and the cultural and developmental needs of the country. It is not necessary that all the enterprises considered strategic in the implementation of the national goals possess all the skills before they are selected for empowerment. It is however, necessary that the activities of those enterprises are consistent with the national goals and objectives. We recommend that governments pursue optimum entrepreneurial development, which requires that financial and other entrepreneurial development intervention be given, if the programs of the enterprises are consistent with declared national goals and objectives. Although only five such goals are considered in this study, an infinite number of such goals exist for any country to choose from in accordance with its socio-cultural and economic philosophy and level of development.

Entrepreneurial development is often funded if their owners have considerable financial investments (Biggs, 1999). While this may be very necessary, especially to ensure meaningful commitment on the part of the owners, where a critical national policy objective is concerned, financial contribution may either be waived, or the share of contribution by the owner considerably reduced. For those who do not possess the required start-up capital, a start-up training could be provided to enable them acquire the necessary management and technical skills prior to funding. Skills Acquisition Centers Initiative being funded by UNDP in many States in Nigeria serves as a necessary step in this direction. However, we propose that on-site monitoring, counseling and progress reporting by independent consultants be made an integral component of this initiative.

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Empirical Results: Appendix A

Dependent Variable	Model 1(a) Log(ID)	Model 1(b) Log(Empt)	Model 2 Htek1
Independent Variables	Coefficient	Coefficient	Coefficient
Log(Age)	-	-	0.133 (1.13)
Age1	0.475 (1.75)	-	-
Age	20.322 (1.50)	-	-
Gnd	-	-0.328* (2.16)	-
Gndm	0.439* (2.68)	-	-
Hedu	-0.053 (0.36)	-0.180 (1.23)	0.787* (2.52)
Log(Statcap)	0.096 * (3.18)	-0.018 (0.41)	-
Suscip	-0.043 (0.46)	-	-
Log(Grsale)	-	0.237* (6.11)	-
Loan1	0.296 (1.27)	-	-0.174 (0.40)
Pul1	-0.054 (0.20)	-	0.720 (1.46)
Ps1	-0.149 (0.97)	0.264 (1.69)	-
Rgas1	-0.425* (3.51)	-	0.572* (2.25)
Rgas2	0.096 (0.98)	-	-1.242* (4.47)
Ugas1	3.328* (8.29)	-	-

Ugas2	4.253* (9.64)	-	-
Piq1	-0.152 (0.90)	-0.003 (0.02)	-0.625 (1.72)
Mtek1	4.022* (8.94)	-0.253 (1.65)	-
Mtek2	-	-	-1.011* (2.37)
Htek1	0.139 (0.71)	-0.238 (1.26)	-
Fincost	0.154 (0.63)	-	-
Log(Ind)	-0.019* (1.78)	0.038* (2.13)	0.069* (2.39)
Emp	-	-	-0.065 (0.44)
Log(empt)	-	-	-
Log(Statcap)	-	-	-
Log(Tn)	-	-0.098 (1.88)	0.634* (4.61)
		0.470* (2.80)	0.395 (0.91)
Ab1	-	-	0.048 (0.07)
Mgt1	-	0.403* (2.43)	-
Mgtm1	-	0.047 (0.24)	-
Ecc1	-	-	-
Icc1	-	-0.587* (3.47)	-
Mdp1	-	0.569 (1.34)	-
Lform	-	0.259* (3.08)	-
R ²	0.19	0.53	0.53
Log Likelihood	-237.74	-198.20	-54.29
Sum Squared Resid.	138.06	100.91	18.19
AIC	2.72	2.50	0.71

Appendix B: Empirical Results

Dependent Variable	Model 3(a) Piq1	Model 3(b) Ecc1	Model 4 Apr1	Model 5 Gndf
Independent Variables				
Log(Grsale)	-0.266* (3.78)	-0.006 (0.74)	-0.105 (1.52)	0.112* (2.15)
Log(Statcap)	-	0.116 (1.39)	-	-0.083 (1.06)
Emp	0.211 (1.43)	-	-	-

Log(Age)	-0.187 (1.66)	-	-	-0.129 (1.29)
Hedu	0.534 (1.77)	-	-0.487 (1.30)	-0.31 (0.12)
Log(Tn)	0.221* (2.04)	-	-	-
Ps1	-0.153 (0.56)	-	-	0.025 (0.08)
Log(Ind)	0.048* (2.13)	-0.006 (0.20)	0.031 (1.15)	0.003 (0.15)
Gnd	0.766* (2.61)	0.879* (2.05)	-	-
Mgt1	0.252 (0.73)	0.547 (1.18)	0.136 (1.36)	0.147 (0.48)
Mgtm1	1.465* (3.48)	0.970 (1.24)	0.623 (1.41)	-0.070 (0.20)
Apr1	-0.896* (2.43)	-	-	-
Htek1	-0.887* (2.83)	0.099 (0.24)	0.668 (1.62)	-0.081 (0.31)
Mtek1	-0.113 (0.35)	-0.923* (2.18)	1.015* (2.63)	0.088 (0.34)
Icc1	0.815 (1.87)	2.093* (5.49)	-	-0.002 (0.005)
Ecc1	-0.85 (1.79)	-	-	0.667 (1.62)
Piq1	-	-0.642 (1.41)	-0.470 (1.13)	-
Mdp1	-0.407 (0.66)	-3.201* (3.00)	-2.434* (3.59)	0.801 (1.58)
Lform	-0.049 (0.25)	-0.099 (0.42)	-	-0.181 (1.07)
Finconst	1.210* (2.67)	1.770* (3.92)	-	-
Ejd1	-1.665 (1.53)	0.072 (0.16)	0.882* (2.03)	0.025 (0.07)
Ab1	-	2.715* (6.77)	-	-
Loan1	-1.665* (2.46)	-	-	-
Pul1	1.782* (2.51)	-	-	-
R ²	0.54	0.51	0.55	0.50
Sum Squared Resid.	23.36	12.07	11.76	29.19
Log Likelihood	-72.17	-39.21	-41.96	-89.74
AIC	0.97	0.56	0.58	1.13

Numbers in parenthesis are the t-Statistic for relevant independent variables.

*The numbers with asterisk indicate statistical significance at 95% level or better.

Appendix C: List and Definition of Variables Used

Age	Age of owner in years
Age1	Dummy variable for age Under 30 Years = 1
Age2	Dummy variable for age 30-40 years = 1
Age3	Dummy variable for age 41 and older =1

Gnd	Dummy variable for gender = 1
Gndm	Dummy variable for male gender = 1
Edu	Education of owner of owner in years
Hedu	Dummy variable for education if education of owner beyond High School = 1
Grosale	Annual Gross sales of the enterprise in local currency
Startcap	Start-up capital in local currency
Suscap	Dummy variable for source of capital = 1
Emp	Dummy variable for employment = 1
Empt	Number of employees
Tn	Tenure of enterprise in years of existence
Id	Serial number of the enterprises in the sample
Pull1	Dummy variable if there is a plan to use the loan = 1
Ps1	Dummy variable for professional service used = 1
Rgas1	Dummy variable if government financial assistance is ranked highest = 1
Rgas2	Dummy variable if government technical assistance is ranked highest = 1
Ugas1	Dummy variable if financial assistance from government is most preferred = 1
Ugas2	Dummy variable if technical assistance from government is most preferred = 1
Piq1	Dummy variable if there is plan to improve product quality = 1
Mtek1	Dummy variable for enterprises which select or rank counseling, management or monitoring as their most desirable government assistance = 1
Mtek2	Dummy variable for enterprises which select or rank training of management and other employees as their most desirable use of government assistance = 1
Htek1	Dummy variable for enterprises which rank acquiring improved technology on the top of their concern and would first use government assistance to pay for this initiative = 1
Finconst	Dummy variable for financial constraint = 1
Apr1	Dummy variable for planning of revenue and expenditure = 1
Ab1	Dummy variable for annual budgeting = 1
Mgt1	Dummy variable for regular management training = 1
Mgtm1	Dummy variable for regular management meetings to review previous weeks' work and plan for subsequent week's activities = 1
Ecc1	Dummy variable for employee code of conduct = 1
Icc1	Dummy variable for investigation of customer complaints = 1
Erc1	Dummy variable for enforcement of rules on reporting, closing, and lunch time = 1
Mdp1	Dummy variable if there is established market demand for product or service = 1
Lform	Dummy variable for legal form of enterprise = 1
Ejd1	Dummy variable for employee job description = 1
Dor1	Dummy variable for delegation of responsibility = 1
Dqe1	Dummy variable if responsibility was delegated to most qualified employee as against inexperienced relative etc = 1
Loan1	Dummy variable if enterprise applied for a loan = 1
Pull	Dummy variable if enterprise had a plan to use loan capital = 1