INSTITUTE OF DEVELOPMENT MANAGEMENT [BOTSWANA, LESOTHO AND SWAZILAND]

The successful and unsuccessful enterprise.

Institute of Development Management

THE SUCCESSFUL
AND
THE UNSUCCESSFUL
ENTERPRISE

An analysis of fifty small business enterprises supported by The Botswana Enterprises Development Unit.

Botswana
Lesotho
Swaziland

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for

The Director
Botswana Enterprises Devel
Ministry of Commerce and I
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EXPLANATORY NOTES - DIRECTOR OF BEDU

This report has been prepared by the Institute of Development Management at the request of BEDU. BEDU has carried out most of the field research work in cooperation with the Institute.

I wish to thank the Institute and in particular J. Hunter for the comprehensive and frank piece of work he has presented us with. Statistical analysis has been used for correlation and conclusions. This gives the document a scientific and professional outlook and as such should not be read out of context. To avoid misinterpretation and the concoction of conclusions out of thin air by readers some statements need to be carefully elaborated upon.

1. On page 7 of the report, the consultant writes "there is no indication that a high 'achievement motivation' is associated with success in the case of BEDU entrepreneurs. A 'high power motivation' is."

   This should not discourage entrepreneurs to be achievement motivated since the two serve the same purpose. It is a common phenomenon that people are normally motivated by desire to have status (owning house, car etc) and authority and control over others. As a mode of satisfying this desire, the entrepreneur will of necessity be 'achievement motivated' thus working hard to accomplish short-term gaols, such as production levels of the business, in order to generate the necessary revenue which will enable him to posses the status symbols referred to above.

2. On page 8, the consultant writes "the representation of various tribal groups among BEDU entrepreneurs is quite inconsistent with their representation in the national population". It is important to note that BEDU does not employ 'tribal affiliation' as a criterion for selection of entrepreneurs. BEDU serves any Motswana who needs the services of the programme as long as the required assistance is in line with the objectives of BEDU. If members of any one group are aggressive and come forward with project proposals and then satisfy the screening committee that they have the potential to carry out the projects, BEDU will endeavour to help them regardless of the tribe they represent.

   The geographical and not tribal coverage is and has been the programmes concern. This has been repeatedly brought up in Botswana's political circles. Due to the limited resources of the Government, BEDU has not been able to spread its services to a large percentage of the country.

3. On page 16 the consultant states "there is clear indication that older than average enterprises are less profitable than younger ones".

This should not be interpreted to mean that the longer the enterprise stays with BEDU the worse it becomes. What it reflects is the deficiency in the initial screening mechanism. In fact when the programme was launched, there was no thorough selection as the authorities did not know what pattern (negative or positive) the response would take and the programme had to be started anyway. When the programme devised screening procedures in the last half of 1976, entrepreneurs' performance improved. Some of the enterprises established after this year graduated even before the first batch, simply because BEDU managed, through the screening procedure, to select capable ones. Secondly most of the older enterprises with BEDU are in the Garments sector. This is a very difficult sector to succed in because of competition and continuous changes in fashion.

4. Table 3 on page 21 gives the comparative cost of creating jobs in the different sectors under the programme's umbrella. This reflects high cost per job created in the leather and woodworking sectors. Both leatherworks and woodworks require considerable training so that the workers can be precise in working with the raw materials to avoid waste, unlike metalworks where welding can be done in case a piece was wrongly cut or bent. Subsequently, it is advisable to train a few workers at a time to ensure communication and control. Hence the average of 3 and 5 employees per woodworking and leatherworking units respectively. In addition, machinery and equipment required for wood processing and furniture making tends to be sophisticated and costly. For this reason a lot of common workshop machinery and equipment was purchased by BEDU for the purpose of training the entrepreneurs and their workers before they embark on purchasing their own. This increased the cost of job creation for Government unlike metal working where entrepreneurs purchased their own machinery and equipment due to a relatively simple operational structure. The anticipated increase this year by 100% of the average employees in these sectors will undoubtedly reduce the cost.

I hope these observations will help the reader to comprehend what the report is conveying.

Thanking you for your comments and suggestions on how best we should conduct BEDU assisted operations.

MODIRI MBAAKANYE
DIRECTOR OF BEDU

THE SUCCESSFUL AND THE UNSUCCESSFUL ENTERPRISE

1

INTRODUCTION

The present report arises from the need for information on which to base policy and strategy decisions in respect to the indigenous small industry sector of Botswana. It has been undertaken by the Institute of Development Management at the request of the Director, Botswana Enterprises Development Unit (Ref.BEDU 3/1/78). The report grows out of the findings of another study "Things Fall Apart: An analysis of the problems of thirteen small Botswana enterprises", published by the IDM in May 1978. The scope of this report is considerably more extensive than the previous one in that it involves the activities of fifty 'BEDU' sponsored firms, engaged in a wide variety of endeavours. It is also considerably more objective, as it is based almost completely on quantified data.

The essential question the study intends to answer is, 'What conditions are necessary for a small indigenous industrial enterprise to prosper in Botswana?' An attempt is also made to resolve a number of subsidiary questions regarding the identification, capitalization, location and viability of present and future small enterprises. To this end, 1790 bits of information, gathered from fifty BEDU enterprises, have been analysed by a variety of statistical procedures. The results which fall out run the whole gamut - from obvious to surprising, disappointing to encouraging, enlightening to puzzling. In the aggregate, they provide a reasonably clear and comprehensive picture of past performance and a reasonably solid basis for future action.

The Model

Seventeen hundred and ninety bits of information tell us little unless we have a theoretical system to interpret them. The system used in the study is simple and not likely to offend common sense. The success of a small enterprise is conceived to be the result of three distinct sets of variables - each set interacting on the others. One set of variables describes the entrepreneur, one set - the enterprise, and one set - the environment in which the enterprise functions.

For the purposes of this enquiry, such a system is sufficient provided some acceptable means is used to determine the degree of success achieved by an enterprise. On this, the cornerstone of the study, there is considerable room for argument.

Success

The BEDU project has several objectives, any one of which might be used for measuring enterprise performance: amount of employment generated, value added, contribution to national self-sufficiency are three plausible possibilities. These, and other measures of success were discarded. At the risk of injecting an uncouth note into the study, 'profit', or more accurately, 'the rate at which capital has been generated' was selected as the sole criterion. The justification for this choice rests on the assumption that an enterprise is viable only to the extent it produces a surplus over costs on which it can sustain itself and support future growth. Put like this, the issue of which enterprises are more successful than others seems reasonably straightforward and uncontroversial. Some estate managers and advisers, however, may be disturbed to find that an enterprise employing a substantial work force, producing a large output of an important commodity, and run by 'one of our best entrepreneurs' is deemed, by this measure, to be less successful than some small and unambitious operation producing very little output of a rather frivolous commodity.

The profit criterion of success is complicated somewhat by the different profit-making opportunities which appear to exist among different industries. It is evidently much more difficult to make a Pula of profit in a BEDU enterprise that manufactures garments than it is in one that fabricates metal. In establishing the relative success of enterprises it has been necessary to take these opportunity differences into account as well as enterprise profits. The statistical process used to accomplish this adjustment is explained in statistical notes 1 and 2. The resulting success ratings are given in Table 1 on the following page.

TABLE 1

Success Percentiles of BEDU Enterprises

Percentile		Percentile	
99	Gaborone Printers	37	Pauls Wooden Products
96	Tumelo Engineering	37	Tshosa Construction
92	Tshipidi Knitters	34	Mastercraft Leather
91	E.H.and B. Construction	34	Sefakwe Metal Works
90	Molefe Furs	32	Roka Textiles
87	Mongwaketse Construction	32	Francistown Upholstery
85	Francistown Furniture	31	Thusangs Metal Works
83	Morwa Jerseys	30	Francistown Tin Smith
79	Motsupatsela Engineering	29	P.C. Upholstery
77	Ida Knit Wear	29	Bosele Construction
76	Leather Bags	29	E.M. & Sons Construction
75	Sunday Clothes	29	Botswana Traditional Art
69	Eddies Fashions	28	Mochudi Leather
66	Boswa Garments	27	Lion Curtains
65	Lebotse Linens	26	Botswana Leather
62	Big GameJewellery	25	Madisa Leather
60	Boiteko Dress Makers	23	J.M's Solar Heaters
59	Model Furniture	22	R and T. Metal Works
58	Boikago Engineering	18	Okavango Ornamental
57	Thusano Pottery	18	Boiteko Upholstery
45	Seralanyane Construction	17	Polokano Coffins
43	Kanana Tailor	16	Tswelelo Fashions
42	Euniliz Textiles	15	Boikanyo Construction
40	Themba Prints	6	Boithakga Hand Knits
39	Kalahari Gem Stones	4	Tswana Lily

see statistical note 2

Method

The general approach of the study has been to rank each enterprise according to the relative success it has achieved, then to correlate or compare these rankings with data variables. In each case, the simplest statistical procedure available, consistent with resolving the question posed, has been used. Although the procedures will be familiar to all who have made even the most modest venture into inferential statistics, to spare the disinterested, they and their exact results have been separated out and placed under 'statistical' notes. The three main sections of the report contain only the question posed, the statistical inference and, where required, an explanation, for each variable tested. Each main section is concluded by a number of comments. The comments are best described as 'the implications of the test results, as seen by the author of the report'. They are, it is well to remember, only opinions although they are often delivered in a style which suggests they are beyond dispute.

The report concludes with some summary statements intended for those who have neither the time nor inclination to wade through the entire presentation.

Acknowledgement

To the Director of BEDU who initiated this enquiry, to the BEDU staff and entrepreneurs who bent over backwards to provide the information on which it is based, a great deal of credit is due. There is something very encouraging and healthy (even courageous), about an organization that is willing to expose itself to the sort of scrutiny entailed in this type of investigation. The study is particularly indebted to Shandukane Mpoloka and to Max Obuszewski who both laboured hard and long to extract the base line data. The results of their efforts, coded, sorted and - in some cases - refined, are included as a final section. It is valuable stuff - a distillation of the wealth of experience acquired by BEDU over the first five years of the project. It deserves to be put to good use.

II

THE NATURE OF THE ENTREPRENEUR

Fifteen characteristics and aptitudes of entrepreneurs are investigated to determine those associated with the successful BEDU enterprises.

1a Mental Ability

Forty-five entrepreneurs were tested for general mental ability. The instrument used was the "Test of 'g' Culture Fair". It was administered in Setswana and is reputed to be unbiased in respect to cultural background, literacy and numeracy. Scores ranged from a low of 3 to a high of 32 indicating a wide variety of mental ability among BEDU entrepreneurs. Individual scores were correlated with entrepreneurial success. There is no indication that 'mental ability' is associated with success for BEDU entrepreneurs.

see statistical note 3.

1b Ability to Read English

Twenty-six of the entrepreneurs considered in this study had been tested for this ability by the Regional Testing Centre. The instrument used was the 'RDL Test'. There is no indication that 'ability to read English' contributes to success. There was some indication that it may, in fact, be a minus factor.

see statistical note 4.

1c Ability to Converse in English

Another test, SPK, was administered to twenty-six entrepreneurs by the R.T.C. There is no indication that an ability to converse in English is a factor in success.

see statistical note 5.

1d Ability to Tabulate Data

The TAB test was also administered by the R.T.C. to twenty-six of the entrepreneurs. There is no indication that an ability to tabulate data is a factor in success.

see statistical note 6.

1e Facility in Basic Arithmetic

Twenty-five of the entrepreneurs were given the NUMERACY test by the R.T.C. There is no indication that a facility in arithmetic is a factor in success.

see statistical note 7.

1f Planning Ability

Twenty-six of the entrepreneurs were given the PLAN test by the R.T.C. There is no indication that an ability to plan is a factor in success. In fact, the less successful entrepreneurs did better on this test than their more successful colleagues.

see statistical note 8.

1g Ability to Accurately Fill Out Forms

Twenty-four of the entrepreneurs were tested for FORM COMPLETION ability by the R.T.C. There is no indication that ability to complete forms is a factor in success. Once again the less successful group, on the average, performed better on this test than did the more successful group.

see statistical notes 9 and 10.

1h Work Motivation

An attempt was made to measure the achievement motivation of entrepreneurs using methods developed by David C.

McLelland and others[1]. Briefly the procedure was to test entrepreneurs by giving each the identical group of four photographs. Each photograph showed one or more Batswana engaged in a 'sufficiently ambiguous' activity[2]. Each entrepreneur was asked to write, in five minutes, a story about each picture which would tell what was happening: who the people were; what led up to the situation; what is being thought by the people; and what will happen next. The entrepreneurs were encouraged to write in the language they felt most comfortable or, if writing was difficult for them, to tell their stories to a rapporteur. To arrive at an achievement score, the number of achievement related thoughts or images, e.g. 'the man in front is pointing to the good crop of maize he has grown', were counted - then divided by the total number of thoughts or images related in the stories.

The theory, which has considerable support from research, holds that 'high achievement' motivation suits individuals for the entrepreneurial role[3]. That is, the behaviour of people who are likely to succeed as entrepreneurs is primarily motivated by a desire to accomplish things, achieve goals, get results. There is no indication that a high 'achievement motivation' is associated with success in the case of BEDU entrepreneurs. There is some indication that a high 'power motivation' is. This implies that successful BEDU entrepreneurs are likely to be strongly motivated by a desire to have authority, status, and control over others.

see statistical note 11.

1i Age

The ages of the entrepreneurs range from 20 to 59. The average age is 34. There is no evidence that either age or

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1 McLelland, D.C., The Achieving Society, MacMillan, New York, 1967.
2 ibid
3 ibid

youth confers any advantage on BEDU entrepreneurs. Nor is there any evidence that one particular age group, e.g. 25 to 35 years, is likely to be more successful than those in groups younger or older.

see statistical note 12.

1j Sex

Of the 56 entrepreneurs studied, 36 are men and 20 are women. There is no indication that one or other sex is more likely to be successful as an entrepreneur.

see statistical note 13.

1k Tribal Affiliation

All the Tswana tribal groups, with the exception of the smallest, Batlokwa, are represented in the 56 BEDU entrepreneurs studied. Fourteen of the 56 have non-Tswana tribal affiliations. There is no indication that non-Tswana make better (or worse) entrepreneurs than Tswana. Nor is there any indication that some Tswana tribal groups exhibit more entrepreneurial ability than others.

The tribal affiliation data, however, reveals one anomaly. The representation of various tribal groups among BEDU entrepreneurs is quite inconsistent with their representation in the national population. The two largest groups, representing roughly 37 percent and 15 percent of the population[4], make up 6 percent and 4 percent respectively of the BEDU entrepreneurial cadre.

see statistical note 14.

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[4] Bechuanaland Protectorate - 1964 census.

1l Number of Years of Formal Education

The average BEDU entrepreneur has 7.5 years of formal schooling. The range is from 0 to 13 years. There is no indication that the amount of formal education acquired by an entrepreneur is a factor in his or her success[5].

see statistical note 15.

1m Related Work Experience

The number of years an entrepreneur had worked for some other firm or person in the same industry prior to starting his own firm was compared to his success ranking. This procedure produced a negative correlation. That is, it appears that the more related work experience a person has before becoming a BEDU entrepreneur, the less likely he is to be a success. By separating the entrepreneurs into three groups - those with 2 years or less work experience; those with 3 to 5 years; and those with 6 or more years - there was a clear indication that entrepreneurs with 3 to 5 years related work experience are more likely to be successful BEDU entrepreneurs than those with less than 3 or more than 6. Less significantly, those with less than 3 are likely to be more successful than those with over 6.

see statistical note 16.

1n Management Training

The number of weeks of formal management or business

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[5] As there is little research in the area, most of the results of this this study have to stand on their own, unsupported by evidence from other sources. 'Years of formal education' is an exception. "Studies from Kenya and Nigeria suggested a zero and a negative correlation exist, respectively, between formal schooling and successful entrepreneurship in the footwear manufacturing business. Kilby found there was no correlation for bakers in this respect in Nigeria." Neck, P.A.: A Review of Small Enterprise Development Schemes in a Selection of African Countries (ILO, Geneva, 1977.P.7).

training[6] received by an entrepreneur was compared to his success. There is a slight indication that such training improves chances for success.

see statistical note 17.

1o Energy, Initiative and Aggressiveness

The estate manager, or the technical adviser most familiar with the entrepreneur, was asked to evaluate each entrepreneur on these three qualities. A rating scale of none, low, fair, or high was used. These ratings were quantified, totalled and related to success rankings. Of the 15 entrepreneurial characteristics studied, this combination (referred to as 'hustle' in the data code) was the only one measured subjectively. Consequently, the result of the correlation should be regarded with some reservation. On the basis of the estimates made, however, there are grounds for concluding that there is a fairly significant association between the degree of energy, initiative and aggressiveness displayed by an individual and his or her success as an entrepreneur.

see statistical note 18.

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[6] Trade training was not included. The 1.1/2 hour Tuesday training sessions provided by BEDU at some estates were included. One year (forty hours) of such instruction was considered to be the equivalent of one week in a formal off-site course.

THE NATURE OF THE ENTREPRENEUR : SUMMARY

None of the tests currently administered to entrepreneur applicants appears to have any power to predict success. Mental ability, achievement motivation, age, sex, origin and the amount of schooling are evidently also irrelevant.

Of the factors measured, two alone seem to be significant determinants of success; the amount of previous work experience and the amount of inherent 'hustle'. In the case of the former, each additional year of related work experience beyond an optimum of four decreases the probability of success. In the case of the latter, the more energy, initiative and aggressiveness the greater the probability of success. These two factors combined appear to account for one third of the total variation in success experienced by BEDU entrepreneurs.

see statistical note 19.

THE NATURE OF THE ENTREPRENEUR : COMMENTS

1-1 Present Regional Testing Centre tests are not only ineffective at predicting but may, in some instances, be screening out potentially successful entrepreneurs.

There seems little point in continuing with the TAB, PLAN and FORM COMP. tests. The SPK (spoken English), RDL (reading English) and NUM (numeracy) tests should be retained but not used to discriminate against applicants. Their usefulness lies in identifying those who are most likely to profit from formal training. The test results can also indicate to advisers if deficiencies exist in an enterprise which need shoring up. Certainly, a building contractor will need someone in his organization with basic arithmetic skills if the enterprise is ever to stand on its own feet. The 'g' FACTOR culture free mental ability test might be useful as a 'knock-out' device as no-one scoring less than nine was making a profit or was in the top half of the success distribution. The age, sex, formal schooling and tribal identity of applicants should not influence screeners as none of these characteristics appear to have any bearing on success.

The evidence that some work experience - but not too much - confers advantage is sufficiently compelling to suggest screening procedures be biased in favour of applicants with two to five years related work experience.

Perhaps the R.T.C. has, or can locate, a personality test designed to detect energy, aggressiveness and initiative. If such a test does not exist then interview techniques should be structured to give some indication of the degree to which these qualities are possessed.

1-2 The casual observer cannot help but be impressed with how pleasant and hospitable is the average BEDU entrepreneur. The possibility exists that BEDU staff, when interviewing

applicants, are overly influenced by likeable personalities. They would do well to remember that individuals proven to be cast in the entrepreneurial mould have seldom been likeable. Successful businessmen are often egotistical, avaricious, hard-nosed and not in the least concerned with the sensibilities of others. Interviewers of entrepreneurial applicants should not be biased in favour of the nice guy.

1-3 The distribution of entrepreneurs by tribal affiliation strongly suggests that the BEDU recruitment and publicity effort is far too passive. It appears to be reaching only half the nation.

1-4 The results from the achievement motivation test indicate that the achievement motivated entrepreneur is a rare bird in the BEDU entrepreneurial cadre. There is also a significant indication that the BEDU entrepreneur who is strongly motivated by power, is likely to be more successful. These results are contrary to findings in the USA and India[7]. Possibly the results of this study are simply due to faulty administration of the test. A more likely explanation, however, is that the achievement motivated individual is not common in Botswana - and that the type of motivation is less important than its strength. In any event the apparent absence of achievement motivation amongst BEDU entrepreneurs is consistent with the findings of an extensive study conducted by the IDM[8], which indicate that the number of power motivated managers in Botswana, Lesotho and Swaziland outnumber the achievement motivated by a factor of ten.

This does not imply any innate deficiency in BLS managers, despite the faintly nasty connotation of the word 'power' and the faintly noble connotation of the word 'achievement'. (The

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[7] op.cit. The Achieving Society

[8] A.M. Beaton, S. Moapare: Work Motivation in BLS Countries. Draft 1978.

unpleasant characteristics of some successful businessmen, previously described, are those of the extreme achievement-motivated individual.) Power-motivated people are believed, by McLelland and others, to be successful in work situations where the results of their effort cannot, in the normal course of events, be seen or measured. Most managerial positions fall into this category including those in government, the military and the large enterprise. Positions where achievement motivation is a plus are few, but are thought to include the manager/owner of a small enterprise. If all this is true (there is always the possibility that McLelland's theories are nonsense), it raises two provocative questions. Is the present BEDU model designed for 'achievement-motivated' entrepreneurs? If so, should it not be re-designed to suit the type of entrepreneur it is likely to be serving? These questions should be answered before any attempt is made to formulate future BEDU strategy.

1-5 Apparently it is not possible to predict in advance who will, or will not, be a successful BEDU entrepreneur. This suggests that the real screening process has to be done after the applicant has been established as an entrepreneur. This, in turn, suggests that BEDU must have rigorous and objective procedures for evaluating the performance of the entrepreneur during his tenure at the estate. This could be effectively done if a procedure similar to the following was carried out in the case of each and every entrepreneur.

a) Before the entrepreneur has been signed on, a series of realistic output, employment and profit targets, against which his performance can be measured over time, are worked out and set down. (This process could be done by a group consisting of the prospective entrepreneur, the appropriate technical adviser, a BEDU financial adviser and possibly the estate manager.)

b) The prospective entrepreneur is made clearly aware that his tenure at, and the support he receives from, BEDU are dependent on his reaching these targets - and reaching them in the time stipulated. This to be written into the agreement with BEDU and signed.

c) Every three months the performance of the enterprise, against the targets set, is officially reviewed by an off-estate BEDU officer.

d) As soon as it is obvious that the enterprise is failing to measure up - and in the absence of some extenuating circumstance - the entrepreneur's association with BEDU is quickly and cleanly cut - and the enterprise's debt absorbed by BEDU.

Such a procedure, as outlined above, would by necessity require that a good set of financial records be kept for, or by, each enterprise - and that each estate have, on staff, an adviser capable of regularly monitoring the activities of the enterprise and providing the consultative and management input necessary to keep the enterprise on track.

1-6 As previously noted, two characteristics of entrepreneurs, hustle and the possession of three to five years work experience, have considerable bearing on enterprise success. No such connection appears to exist between aptitude and success. In some cases the entrepreneur is so deficient, in certain skills, as to suggest that the technical adviser is the de facto entrepreneur and the entrepreneur is a straw boss. If such relationships do exist they should be discouraged as there is little hope that an enterprise operating under such conditions will ever attain self-sufficiency. In other cases, entrepreneurs with above average endowment are doing so poorly as to suggest they have been the victims of bad advice. The major implication, however, is that the entrepreneur is not the crucial ingredient in the BEDU enterprise; that either the structure of the enterprise or the kind of environment with which it contends or both are more important in determining success.

III

THE NATURE OF THE ENTERPRISE

The structural characteristics of firms are investigated to determine those associated with the successful BEDU enterprises.

2a Partnerships

Five of the fifty enterprises surveyed are partnerships. They were, on the average, quite a bit more successful than the single proprietorships. Although the group was too small to justify any positive conclusion, partnerships did include both the most successful enterprise (as defined by statistical distribution) as well as the firm with the highest profit in money terms. There is some indication then, that partnerships are more likely to be successful than single proprietorships.

see statistical note 20.

2b Age of Enterprise

The normal expectation is that firms will increase in profitability over time as entrepreneurs gain experience, employees become more skilled and customer goodwill is created. This is not true of BEDU enterprises. There is a clear indication that older than average enterprises are less profitable than younger ones, and this is true for all categories[9] with 'age of enterprise' differences.

see statistical note 21.

2c Number of Employees

The average BEDU enterprise employs 9.5 persons. Two firms have no employees. One has sixty-nine. The overall picture,

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[9] For analytical purposes enterprises were grouped into six industrial categories; Garment Manufacturing, Building Construction, Metal Fabrication, Wood Fabrication, Leather Work and Diverse.

see statistical note 2.

in the case of BEDU enterprises, is that firms with an above average number of employees are no more (or less) profitable than the remainder. There are, however, some distinct differences between industries in this respect. In the case of 'garment manufacturers' and 'building contractors', increased number of employees is associated with 'decreased profitability'. The reverse is true of the 'metal fabricators' where there is a strong positive correlation. (This does not necessarily imply scale efficiencies as this industry operates in an environment where higher unit costs may be tolerable, even profitable, provided output increases sufficiently. This is a matter for later attention; see Nature of the Environment, 3c.) The case is indeterminate for the other three industries. No 'leather work' or 'wood fabricating' enterprise hires more than four employees although it is worth noting that all are profitable. The 'diverse' category is too much of a mixture of unrelated pursuits to draw conclusions regarding scale advantage. (The top firm, in this group, employs eight people.)

see statistical note 22.

2d Number of Relatives Employed

Seventeen of the fifty enterprises surveyed employed one or more relatives of the entrepreneur. There is no indication that these nepotic firms are any less (or more) profitable than the remainder. Within the nepotic group, however, there was a negative correlation between number of relatives employed and success. Although the correlation was not strong, there is some indication that the employment of one or two relatives strengthens the enterprise, whereas more than one or two tends to weaken it.

see statistical note 23.

Capital Employment

To consider questions of capital employment by BEDU enterprises, it is helpful to distinguish among three dimensions of capital.

a) The total assets of the enterprise.

b) Other capital used, but not owned or controlled by the enterprise (including the value of rented space and a pro-rated portion of common facilities such as bulk stock, equipment, estate offices, showrooms and the like).

c) A pro-rated portion of the total accumulated recurrent expenditures made by BEDU, in order to launch and sustain the enterprises. (In the main, this represents the wages and salaries paid to BEDU staff since inception.)

In the table which immediately follows, (a) is referred to as Controlled Capital; (a) + (b) as Employed Capital and (a) + (b) + (c) as Invested Capital.

TABLE 2

Average Capital Resources - BEDU Enterprises

	CONTROLLED	EMPLOYED	INVESTED
ALL ENTERPRISES	11,058	25,586	64,586
ALL MANUFACTURING	9,706	25,568	64,568
CONSTRUCTION	19,364	25,701	64,701
GARMENT	10,364	23,216	62,216
METAL FABRICATION	17,832	49,646	88,646
DIVERSE	8,659	20,162	59,162
LEATHER WORK	3,221	10,471	49,471
WOOD FABRICATION	3,762	23,262	62,262

see statistical note 24.

2e Amount of Controlled Capital

For all industrial categories save one, controlling more capital is associated with greater profitability. The exception is the 'garment industry' where a strong negative correlation exists. In the case of the 'construction industry' the correlation, though positive, is weak. For all others it is quite significant.

see statistical note 25.

2f Amount of Employed Capital

Even when the estate owned capital used by the enterprise is taken into account there is, for the metal fabricators, leather workers and the diverse group, a strong association between more capital and profitability. The negative correlation still pertains in the garment industry and there is virtually no correlation, one way or the other, in the construction industry.

see statistical note 26.

The combination of 'more controlled capital' and 'good financial records' seems to be a particularly significant determinant of success. When these two factors together were correlated with success rankings of all enterprises, except those of the garment manufacturing group, they accounted for one third of the variation in success.

see statistical note 27.

2g Degree of Capital Intensity

The average enterprise employs (employed capital) P. 2,391 per worker (including the entrepreneur). The three most capital intensive categories were wood fabrication, metal working and diverse. There is no indication that capital intensity is associated with profitability for the group as a whole. Within industrial groupings, however, some differences show up. The 'more capital

intensive' firms are doing better in 'construction' and 'leather work'; the 'more labour intensive' in 'metal' and 'wood fabrication'.

see statistical note 28.

2h Amount of Invested Capital

As the amount of 'invested capital' per enterprise, as shown in Table 2 is, in each case, simply 'employed capital' plus a flat P. 39,000 for each enterprise, the associations with profitability will be the same for both types of capital. 'Invested capital' does, however, represent the total investment made to create the enterprise and it provides some useful insight into the cost effectiveness of the BEDU project. The relative return on investment and the investment required to create one work place is illustrated in Table 3 for various industrial categories.

2i Distribution System

Regardless of their proficiency within industrial categories, enterprises which sell at least some of their product or service to government tend to make considerably more profit than those that do not. The average monthly profit of the first group is P. 557; of the second group it is P. 30. Of the manufacturing enterprises, only one uses a wholesaler to distribute his product. At time of writing he is the first entrepreneur to leave BEDU and continue to operate successfully. The normal distribution procedure for BEDU enterprises is to sell direct to government, institutions, retailers and/or consumers. No entrepreneur employs an agent for these purposes although BEDU technical advisers sometimes act in this capacity and have been instrumental in obtaining business for the construction and metal fabrication enterprises, the two most successful categories.

TABLE 3

Investment Profit and Jobs - BEDU Industries

	Average Investment per Enterprise (a)	Average Annual Profit per Enterprise	Profit Return per Investment (b)	Average Number of Jobs per Enterprise (c)	Cost per Job Created
All Enterprises	64,586	2,889	4.5	10.7	6,036
All Manufacturing Enterprises	64,568	2,110	3.3	7.2	8,968
Construction	64,701	7,670	11.9	32.3	2,003
Garment	62,216	- 396	- .6	9.1	6,837
Metal Fabrication	88,646	7,260	8.2	9.9	8,594
Diverse	59,162	2,640	4.5	5.9	10,010
Leather	49,471	720	1.2	4.2	11,779
Wood Fabrication	62,262	1,248	2.0	3.3	18,867

see statistical note 29.

2j Adequacy of Financial Records

Estate managers were asked to rate each of the enterprises located at their estate on the adequacy of their financial record system. The rating scale of none/poor/fair/good was quantified and correlated with their success ratings. The two variables are positively correlated but not to a statistically significant degree. The group keeping above average financial records was compared to the remainder. They tended to be more successful than the below average record keepers but not significantly so. When, however, the nine enterprises whose record keeping was given top rating by the estate managers were compared to the remainder there was a significant indication that they were more success prone.[10]

see statistical note 30.

2k Bespoke versus Speculation

Eighteen of the enterprises make goods or provide services only to order. Of the remainder, twenty-three make goods both to order and to inventory. The remaining ten produce to inventory only. The first (bespoke) group was compared to the remainder. The bespoke enterprises tended to be somewhat more successful than the other groups but not significantly so.

see statistical note 31.

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[10] It was previously noted (page 6) that no correlation exists between an entrepreneur's ability to perform basic arithmetical calculations and the success of his enterprise. The only explanation entirely consistent with both observations is that it is not important that the entrepreneur be a good book-keeper - but it is important that his enterprise keeps good books.

THE NATURE OF THE ENTERPRISE : SUMMARY

In the case of some of the variables tested, it is possible to generalize for all BEDU enterprises. Being a partnership, relatively new, having the government for a customer and maintaining good financial records, all tend to make an enterprise more successful. Having one or two relatives on the payroll appears to be a good idea; having more than two is not.

In the case of other variables tested, it is necessary to distinguish between industrial categories. Enterprises with relatively small work forces are doing better in both 'garment manufacturing' and 'building construction'. The reverse is true for the 'metal fabrication' group. Having more capital confers advantage in all industries except 'garment manufacturing' which, in general, is over-capitalized and 'building construction' where capitalization does not seem to be a factor in success.

'More capital' in conjunction with 'good financial records' confers significant advantage in the general case and could account for one third of the 'variation in success' for all enterprises except those in the garment manufacturing group.

THE NATURE OF THE ENTERPRISE : COMMENTS

2-1 Contrary to expectation, older BEDU enterprises, in general, are not doing as well as more recently established ones. The optimistic interpretation of this observation is that present BEDU selection procedures are an improvement on the past; the most pessimistic - that BEDU is failing, and failing badly to meet its objective of helping enterprises 'stand on their own feet'. Although the point has been sufficiently argued elsewhere (1-5), the finding serves to emphasize that the present policy of tolerating enterprises that are going nowhere should be changed.

2-2 The general conclusion 'that BEDU enterprises do not become more profitable as the work force increases' is discouraging. It means that BEDU enterprises have exhausted economies of scale at a remarkably low level of labour employment - an average of six for enterprises other than construction. The reasons may be several. Pilfering could be a major problem particularly in the garment and construction industries where declining labour productivity, at the margin, is most noticeable. Lack of supervisory ability, or simply lack of supervision, could be a big part of the problem as well. On the other hand, there seems to be little or no attempt, among BEDU manufacturers, to achieve economies through labour specialization. The production process in the garment industry, for instance, seems to remain precisely the same, regardless of whether a firm has a work force of three or twenty. Better stock control and better supervision are badly needed by most enterprises. These are matters which should receive much more attention from advisory staff than they do at present.

2-3 The whole question of capital and labour usage is quite clearly one which is important and closely related to the success of BEDU enterprises. It is also an area where it is both difficult and dangerous to make sweeping statements. What is true for one industry is not necessarily true for another, and this may hold for enterprises as well. Overall, it appears that BEDU entrepreneurs are better at managing

capital than they are at managing people. It is also clear that their ability to use capital effectively is greatly enhanced when good financial records are kept.

An examination of 'capital/labour' usage by industry is also revealing. The 'metal fabrication', 'wood fabrication', 'leather work' and 'diverse' firms are, on the average, too small; i.e. those using the most capital and labour are doing better than the others (see 2-4). The opposite is true for the 'garment' and 'building' groups. The profitable garment manufacturer is small, averaging P. 3,000 of controlled capital and only four employees[11]. Although the average work force is considerably larger in 'building construction' (31), the productivity of labour, at the margin, appears to decline after 20.

The fact that some firms and some industries could use more capital, some more labour and some both to good effect, and that others have too much of one or the other or both, emphasizes the need for more and closer monitoring of individual enterprises by BEDU staff (see 1-5).

2-4 The cost of creating a job at BEDU does not compare favourably with similar costs in the formal manufacturing sector. Evidently it requires approximately P. 11,110 to generate a job in a large capital intensive industry (B.M.C., Kgalagadi Breweries and Everest Mills).

The estimate for small formal sector (47 firms) is P. 4,000 per job[12]. The comparable figures at BEDU

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[11] cf op.cit. Things Fall Apart.

[12] The estimates used here have been abstracted from F.G.U. Kronberg, Industrialisation Study Botswana, Table 2, p.45. They are close to the investment-per-workplace figures estimated by Lipton. M. Lipton, More and Better Work for Higher Income, Interim Report 1978.

are: garment manufacturing P. 6,837; metal fabrication P. 8,594; diverse industries P. 10,010; leather work P. 11,799; wood fabrication P. 18,867. (Nor can much satisfaction be extracted from the figure of P. 2,003 for BEDU construction jobs as the investment in the 'construction' project creates the job in this sector; not investment in a particular contractor). It seems rather remarkable that it has taken more capital to provide employment for three women sitting about a table sewing handbags in Pilane than it has to create the jobs for three men manning the automated bottling equipment at the brewery. Such expenditures as have been made by BEDU can only be justified if the job generation process continues after the enterprise has left the estate. With one exception this process does not seem to be taking place (see 2-2). That it is not should be a matter of considerable concern to BEDU staff.

The high cost of creating jobs stems not so much from over-investment by BEDU as from under-utilization by the enterprises. No applicant should be considered as an entrepreneur at an estate, if his or her intent is to employ only two or three people and produce only P. 4,000 or so of output, while tying P. 10,000 to P. 20,000 of capital. Such firms should be accommodated off the estate.

There is also the possibility that the design of at least some estates (e.g. Pilane) discourages expansion of the work force. The factory shells are so small ($25m^2$) that three or four workers congest them. They are too cramped to make possible a production layout conducive to labour specialisation, smooth process flow and a work-like (as opposed to social) atmosphere. Yet the actual ($25m^2$) shell represents only five percent of the total investment underpinning the enterprise. The space occupied by enterprises also seems small relative to the space occupied by common facilities. It appears that, in designing estates, the wrong corners have been cut.

2-5 Although the cost of creating a job at BEDU suffers by comparison with costs in the private sector - it does not compare so unfavourably as to eliminate the BEDU concept as a feasible employment creation strategy. (Lipton estimates[13] that Botswana has at present a backlog of 168,000 jobs needed and predicts an additional 124,000 in the next ten years. Assuming that half of these would have to be of a producing nature, the total BEDU type investment required to create them would be P. 1,300,000,000 - the cost of a world-scale oil refinery.) Of much more importance is the value of the job created, i.e. how secure is it? how well compensated is the emplcyee? how much value does it add to national product?

The average wage paid to employees of BEDU enterprises (P. 53 per month)[14] probably is close to that paid in the small formal sector (but considerably less than that paid in the large formal). The value added per employee, though, as estimated from Fischer/Halbach data[15] (P.918 annually) is much lower than in the formal sector (P.2,726). Nevertheless the real worth of a job, both to the employee and the nation, depends on its permanence - and the permanence of a job position depends on the long-term viability of the enterprise that offers it. How many of the 47 BEDU non-construction enterprises are viable now or can be expected to become viable in the future? In March 1978, two BEDU financial officers classified all but ten manufacturing enterprises as failures, struggling or new[16]. There is little to indicate, in the data on which this study is based, that the situation is much changed today. Perhaps then,

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[13] ibid

[14] as reported by entrepreneurs.

[15] ibid

[16] R. Miller, M. Obuszewski, Evaluation of Enterprises, BEDU, March 31, 1978.

only a fraction of the jobs created[17] by BEDU enterprises represent secure positions. If this is the case the effective cost of generating a job at BEDU is considerably higher than the estimates previously given. Of much greater concern than the high investment cost of establishing the enterprises is their viability.

2-6 The study of enterprise variables has told much about the BEDU project. It has been less useful in explaining differences in enterprise performance. Like entrepreneurial aptitudes, no one variable, or combination of variables, appears crucial. There is a strong hint here then, that the significant determinants of success are to be found in the environment.

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[17] cf M. Lipton, Employment and Labour Use in Botswana, Govt. Printer, Gaborone, 1979. Professor Lipton is concerned to show that a new job is not created when it displaces a worker employed elsewhere. It is not clear that all the jobs generated by BEDU enterprises pass his test.

IV

THE NATURE OF THE ENVIRONMENT

Eight aspects of the industrial and estate environment are investigated to determine those associated with the successful BEDU enterprise.

3a Transfer Cost Advantage

The cost of transporting finished products from the industrial core of the Common Customs Area to markets in Botswana confers a competitive advantage on Batswana firms. On the other hand the cost of transporting the materials used in the production process confers a disadvantage. The difference between these two costs is the Transfer Cost Advantage. This varies considerably amongst BEDU enterprises, depending on industry and location. The Transfer Cost Advantage, expressed as a percentage of the selling price of the finished products, for BEDU enterprises[18] is shown in Table 4, along with the average monthly profit for the enterprises concerned.

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[18] The building construction industry was not included as it was assumed BEDU contractors are not competing against R.S.A. firms. The diverse group was also left out due to the technical difficulty in determining the several costs involved. The mean average monthly profit for BUILDING CONSTRUCTION (all locations) is P. 639. For the DIVERSE group, it is P. 220.

TABLE 4

Transfer Cost Advantage and Average Profit

Industry	Location	Transfer Cost Advantage	Mean Average Mthly. Profit in Pulas
Garment	Gaborone & South	0.05	- 36.0
Garment	Francistown	0.06	0.0
Wood Fabrication	Francistown	5.5	104.0
Metal Fabrication	Gaborone & South	2.8	802.0
Metal Fabrication	Francistown	3.7	277.0
Leather Work[19]	Mochudi	0.2	60.0

The statistical correlation between these two variables indicates that the greater the Transfer Cost Advantage a BEDU enterprise enjoys, the higher its Profit is likely to be. This factor could account for twelve percent of the variation in profit shown in Table 3.

see statistical note 32.

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[19] The leather work industry uses a local resource for materials. This, of course, increases the T.C. Advantage. If, however, the value/weight ratio of the product is high, the advantage will be low.

3b Domestic Competition

It is generally assumed that the more competition an enterprise faces, the lower its profit is likely to be. This expected association also holds true for BEDU entrepreneurs. The greater the local competition, the lower the profit. Competition could account for twenty percent of the variation in profit shown in Table 3.

see statistical note 33.

3c Wage Rate Differential

The average wage rate paid by BEDU (and other Botswana employers) is less than that paid by competing manufacturers in the R.S.A. The differential varies depending on the industry. As estimated by knowledgeable manufacturers in the formal sector, differentials are as shown in Table 5. (Botswana rates = 100).

TABLE 5

Wage Rate Differential - Botswana/R.S.A.

Industry	Wage Rate Differential
Garment	140
Wood Fabrication	200
Metal Fabrication	166
Leather Work	150

When these Wage Rate Differentials were correlated with the Monthly Profits of enterprises, they indicated that the industries enjoying the higher wage rate differentials tended to make the higher profits. This factor may account for up to eight percent of the variation in profit between enterprises.

see statistical note 34.

3d Availability of Trained Workers

Training workers consumes a considerable portion of the entrepreneur's time and the resources of the enterprise for all industries except Building Construction. Table 6 shows, by industry, the percentage of the work force which has been trained at the enterprise as reported by the entrepreneur.

TABLE 6

Percentage of Work Force Trained at Enterprise

Industry	%
Garment	79
Wood Fabrication	75
Metal Fabrication	86
Leather Work	100
Diverse	85
Construction	27

As all manufacturing enterprises at BEDU are more or less equally disadvantaged by the severe lack of trained workers in Botswana, this factor does not explain any of the variation in industry profitability shown in Table 3. Nor does the relative abundance of trained workers in the construction industry provide an explanation of their relatively high profits to BEDU contractors as the trained work force is available to whoever obtains the contract, BEDU or non-BEDU, Batswana or foreign. The shortage of trained workers likely affects the profitability of the garment manufacturers and wood fabricators as they are the most exposed to R.S.A. competition.

see 3h, Table 7.

see also statistical note 35.

3e Amount of Management and Technical Assistance Available

There is a substantial variation in the amount of Management and Technical expertise available to enterprises depending on their industry and location. The ratio, Adviser per Enterprise, is lowest in the Garment Industry at Gaborone (0.25) and highest in Metal Fabrication also at Gaborone (0.57). There is a high positive correlation between the available expertise per enterprise and the profitability of the industry situated there. This factor could account for 30 percent of the variation in profit between industries shown in Table 3.

see statistical note 36.

3f Relative Amount of Management and Technical Assistance Provided

Estate Managers and Technical Advisers were asked to rate the amount of assistance provided to the individual enterprises under their wing on the basis of none/below average/average/above average[20]. The success percentiles of the group receiving 'above average' assistance were compared to the remainder; the 'below average' to the remainder; and the 'below average' to the 'above average'. In all three cases there was a strong indication that the enterprises receiving the most assistance tend to belong to the least successful group.

see statistical note 37.

3g Amount of Protection Provided

For the most part the enterprises compete directly with established firms in the R.S.A. under the terms of the Southern Africa Customs Union Agreement. Some protection is afforded Botswana-located producers when bidding for government contracts through the Central Tender Board or direct to government agencies. Due to the nature of their output only some BEDU enterprises have been able to benefit from this policy. In these cases the

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[20] These differences 'in assistance provided' are within enterprises grouped at a particular estate. They would not apply between groups. Thus, it is quite possible that an 'above-average-assistance' garment manufacturer would be receiving less total assistance than a 'below-average-assistance' metal fabricator.

preference amounts to 10 percent plus 12.1/2 percent (24 percent). In the case of the Metal Fabrication group, five of the eight firms have been producing for government almost exclusively, and enjoying the 24 percent protection. The other three make products not in demand by government and, in effect, have received no protection. The mean average monthly profit of the protected group is P. 884, of the non-protected group it is P. 140. Within the 'Wood Fabrication' group, only one enterprise reports selling 'school furniture to government' and presumably receives the 24 percent preference. The average monthly profit of this firm is P. 187, for the remainder of his group the mean is P. 76. The 'Building Construction' group builds almost exclusively for government agencies and is entitled to the ten percent preferential treatment. The mean average monthly profit for this group is P. 639 as opposed to P. 241 for all enterprises. Although the information is sketchy, there seems little doubt that enterprises afforded protection are likely to be more successful than those who are not.

3h Size of Market

The approximate domestic consumption of the type of product made by a particular BEDU industrial category is compared to the mean average monthly profit of that category.

TABLE 7

Market Size and Profits - BEDU Industries

BEDU Industry	Mean Average Monthly Profit	Approximate Botswana Consumption 1976
Garment	- 33.0	13,795,000
Leather	60.0	4,029,000
Wood Fabrication	104.0	1,377,000
Metal Fabrication	605.0	1,539,000

There is a clear indication that market size is not a predictor of industry profitability insofar as BEDU is concerned.

see statistical note 38.

THE NATURE OF THE ENVIRONMENT : SUMMARY

Of the environmental factors which together make for a 'success prone' BEDU enterprise, the most important appears to be the amount of managerial and technical expertise available to it at the estate. Next in importance is the degree of competition in the industry, followed by the transfer cost and wage rate differential enjoyed over competing R.S.A. firms. Although difficult to quantify, preferential treatment by government purchasing agencies undoubtedly contributes to success. An environmental disadvantage, equally difficult to quantify, is the shortage of trained workers in all industries except 'building construction'. This handicap most likely falls hardest on 'garment manufacturing' and 'wood fabrication.

There is an inverse relationship between the overall domestic demand for the products an enterprise makes and its profitability. An inverse relationship also exists between the amount of available expertise assistance provided an enterprise and its relative success at the estate.

THE NATURE OF THE ENVIRONMENT : COMMENTS

3-1 The top 'metal fabricator' at BEDU enjoys a profit ten times that of the top 'wood fabricator'; fifteen times that of the top 'leather work' firm; and 23 times that of the top 'garment manufacturer'. The reasonable conclusion to reach, when such large differences are observed, is that metal fabrication in itself has advantages denied, in varying degrees, to other industries. The environmental factors which confer advantage or disadvantage on a particular enterprise are not controllable by the BEDU entrepreneur. The environment is determined, almost entirely, by the BEDU organization when it makes three key decisions; what form of enterprise activity will be engaged in; where will that activity be located; what type and amount of support will be provided to the activity. The evidence is quite persuasive that these three decisions have a great deal of bearing on whether or not an enterprise will succeed. Consequently they should be made with a commensurate amount of care.

3-2 A number of factors, related to the type of activity in which the enterprise is engaged, affect profitability. The most important appears to be the number of firms competing for the same business. This, in itself, is not surprising. What is surprising is that the inverse relationship, profits to number of competitors, holds regardless of market size. The lesson to be learned is, when making enterprise activity decisions, be deterred by a large number of competitors even though there appears to be more than enough business for all.

The tendency to enter an industry already crowded is further exaggerated by the functional nature of BEDU estates. As the Fischer/Halbach report notes; 'An estate that concentrates on leather working can only produce leather goods manufacturers.... the present situation leads to the danger of ruinous competition not only between ex-BEDU entrepreneurs but also between BEDU-trained entrepreneurs and non-BEDU enterprises.'[21]

3-3 The götterdämmerung scenario envisioned by Fischer/Halbach undoubtedly overstates the 'domestic competition' problem. For now, and in the foreseeable future, the most serious competition which BEDU manufacturers have to face is from producers in the R.S.A. This would be true even if Botswana were not part of the Common Customs Area.

There is a well remarked tendency for manufacturing industries to concentrate in a central core. In the core they enjoy advantages denied to industries in the periphery. The advantages are several but the most important revolve around the supporting facilities available - financial, marketing, transportation and supply (of materials, components, equipment, labour, skills, etc.). The primary core, insofar as Botswana is concerned, is the Southern Transvaal which accounts for roughly fifty percent of Common Customs Area industrial output.[22] Within Botswana a secondary core is

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[21] op.cit. Industrialisation Study Botswana, p. 75.

[22] cf. Percy Selwyn, Industries in the Southern Africa Periphery, Croon Helm, London, 1975.

developing in and around Gaborone where over one third of the nation's manufacturing[23] takes place. If a manufacturing industry, established in Botswana, is to succeed, it must have some compensating advantage over its competitors in the Transvaal. By the same token an industry established in Botswana, but not in Gaborone, must have some locational advantage over present or future competitors in Gaborone. To establish and locate an industry for reasons other than those of economic advantage (e.g. to provide employment for people in rural areas) is to invite failure.

The locational advantages available to Batswana manufacturers evidently differ in relative importance.

Wage Rate Differential: Of the three advantages considered this seems to be the least significant. Nonetheless it is reasonably important now and is likely to be more important in the future, as the skill and efficiency of the local labour force increases.

Transfer Cost Advantage: At present this is more important than Wage Rate Differential but does not have the same potential for future increase. In fact, the advent of infrastructure is inimical to this advantage. The competitive position of, say, a cement block plant in Kanye or an egg producer in Maun, deteriorates drastically when tarred roads and telephone lines arrive.

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[23] op.cit. Industrialisation Study Botswana

Tariffs, Subsidies, Quotas and other forms of Preferential Treatment: There is little doubt that government commercial policy can and, where it has been used, does provide a particular industry or producer with a competitive advantage. It also seems that the Botswana Government has not begun to exhaust the possibilities for industry protection available to it under SACUA[24]. Such devices though are not without social cost.

3-4 It is worthwhile noting that the top ranked BEDU enterprise[25] is not engaged in manufacturing, in the proper sense, but is rather, providing a service. Services have some unique merits. Their transfer cost advantage is usually very high if not absolute. (Going to Johannesburg to have one's hair cut is expensive, to have the lawn cut - impossible). In addition, they are often supportive of other industry (see 3-3). BEDU, in pursuit of its import substitution goal, appears to have overlooked a number of enterprise opportunities of a service nature, many of which have been picked off by expatriates. (e.g. home movie rental, hairdressing, secretarial and duplicating service, security guards, tyre recapping and repair, bicycle repair and sales, dry-cleaning, accounting and book-keeping, business equipment repair and maintenance, sign painting, contract ploughing, weeding, fertilizing and land clearing, equipment rental, photo developing, truck hawking of ice cream, frozen foods, paraffin, wood, coal, ice, clothing, furniture, hardware to rural areas; and this list is by no means exhaustive). Most

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[24] cf. M. Lipton, More and Better Work for Higher Income, draft report, 1978.

[25] Gaborone Printers

services require much less capital and management expertise than does most small-scale manufacturing. It is also well to remember that, for the first thirty years of his career, Henry Ford operated a bicycle repair shop.

3-5 Head-on confrontation with R.S.A. producers could be avoided in many cases if BEDU would encourage manufacturers to pursue specific, small, preferably local markets. A leather work manufacturer in Pilane might be better advised to produce harness for oxen and donkeys than to take on the BATA Shoe Company. (The BAMB venture into the milling of decorticised sorghum is an example of just how profitable this approach can be.)

3-6 The only enterprise[26] to report that the output of the firm was distributed through a wholesaler is the only firm to date which has left the shelter of the BEDU umbrella and continues to operate successfully. It is hard to imagine that enterprises who depend on over-the-counter sales or sales direct to small retailers will ever achieve volume production. Given the difficulty, for small Batswana producers, of breaking into the R.S.A. controlled wholesale distribution system (although a little moral suasion by the M.C.I. might prove helpful), BEDU should not abandon the idea of establishing a marketing company.[27]

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[26] Big Game Jewellery.

[27] The proposed Botswana Trading Association Company.

3-7 Perhaps the most gratifying result (at least for estate managers and technical advisers) of the statistical analysis is the strong indication that enterprises tend to prosper in direct proportion to the amount of technical and managerial advice available; the least gratifying, that the enterprises receiving the most managerial assistance from the staff of the estate tend to be the least successful. No doubt the latter observation reflects a natural inclination to give the halt and the lame more attention than the reasonably healthy. As understandable as this tendency may be, it represents inefficient use of staff resources. The bigger pay-off lies with the healthy firms.

V

SUMMARY AND CONCLUSIONS

- In broad strokes the profile of a successful BEDU enterprise looks something like this:

  - It is operated by an entrepreneur who had two to five years related work experience before coming to BEDU and who displays above average energy, initiative and aggressiveness.
  - The enterprise is adequately capitalized while it maintains good financial records.
  - It operates in an environment where there is less than average amount of competition and at an estate where an above average amount of adviser assistance is available.

- As it is presently operating BEDU is a prohibitively expensive route to job generation, industrial self-sufficiency and providing nationals with a stake in industry.

- The present practice of tolerating firms that are failing, or going nowhere, must be abandoned. Unless this issue is squarely faced BEDU will not long survive.

- The difficulties of predicting in advance whether or not an individual is capable of successfully managing a business are probably insurmountable. This means that the real screening has to occur after an applicant is established as an entrepreneur and has been given a fair chance to demonstrate his or her ability. BEDU policy must accommodate itself to this reality.

- It appears possible to predict in advance the type of endeavour most likely to survive and prosper in Botswana and to determine its optimum location. The correct approach in establishing a new enterprise may well be to decide first on the type of endeavour, then on the location, then on size and capitalization and then to look for the right individual to be the entrepreneur.

- As long as Botswana belongs to the Common Customs Area, it is unrealistic to expect a small manufacturing entity to survive in an industry which faces strong and aggressive R.S.A. competition. Where such situations exist, it is quite possible that a number of small production units - each a proprietorship, making to order for and meeting the design and quality specifications of a BEDU owned and operated marketing company - would be a successful strategy.

- Establishing manufacturing industry in rural areas is a strategy that is unworkable unless the industry enjoys substantial transfer cost advantage. Establishing service industries in rural areas is workable, provided the industry and the timing are right.

- In general, BEDU entrepreneurs are better able to manage capital than they are labour. The wage rate differentials which exist at present between BEDU industries and their foreign competitors are evidently insufficient to offset this inclination. Therefore choice of BEDU activity and production process should not be biased in favour of labour intensity.

- A fundamental defect exists in the functional estate approach. Countries much more populated than Botswana do not contain fourteen garment

manufacturing firms. Yet BEDU, at least in theory if not in practice, intends to turn fourteen such firms loose every two years - and furthermore expects that they all will grow and prosper. This approach is at odds with reality and a sharp change in direction is called for.

- There is a tendency for BEDU advisers to play an overly active role in the day-to-day operations of the enterprises under their wing. This approach produces firms that are profitable now - but unable ever to stand on their own feet. A shift in emphasis is required - away from short-term success and towards long-term viability.

- During the past five years BEDU has acquired a wealth of experience in enterprise development. Much will depend on its ability to put this experience to good purpose. There is now a clear indication of what works - and what does not. The first order of business is to stop expending energies and resources on what does not work. Experience has, as well, provided the facts needed to make sound decisions. The second order of business then, is to make studied and rational use of this information to develop new and effective strategies.

V

STATISTICAL NOTES

1. The sample consists of fifty enterprises and fifty-six entrepreneurs, the excess of entrepreneurs over enterprises explained by partnerships. This represents all but six of the enterprises under the BEDU umbrella at the time the study was conducted (1.8.78 - 30.11.78). The six firms were not included for one of two reasons. Either they had been too recently established for conclusions to be drawn as to their profitability or no financial information was obtainable.

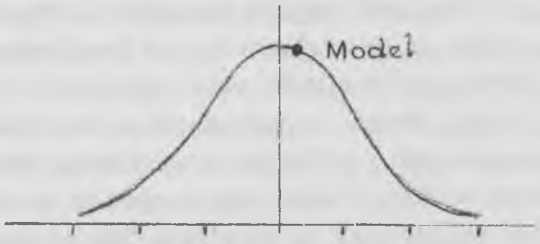
The validity of the test results reported in the study hinge to a large extent on the reliability of the financial reports provided. Although this data was subjected to a second (and sometimes third) check, when obvious inconsistencies were noticed, there are still grounds for doubting the accuracy of some of the information. Such inaccuracies as might exist are not likely to be so serious as to affect the conclusions reached.

2. Average monthly profit proved to be too crude a measure of success to allow for comparison between entrepreneurs engaged in different types of industrial activity, e.g. the mean average monthly profit of 'metal fabricators' is P. 605, with a range from P. 1,926 to P. 80; for 'garment manufacturers' it is a loss of P. 33 with a range P. 83 to - P. 185. To overcome this problem enterprises were grouped into six industrial categories - 'metal fabrication', 'wood fabrication', 'building construction', 'garment manufacturing', 'leather work' and 'diverse'. (This last category contained eleven firms engaged in a variety of endeavour.) The average monthly profit of each enterprise within a group was assigned a 'success value' which was comparable to the values assigned to all other enterprises.

The assumptions underlying these values are: that all six groups are random samples drawn from the same population in respect to the characteristic 'success'; that this characteristic is distributed normally in the population and consequently was distributed, within the groups, in t distributions appropriate to sample size, about a common mean; that, within groups, profit is a suitable measure of success.

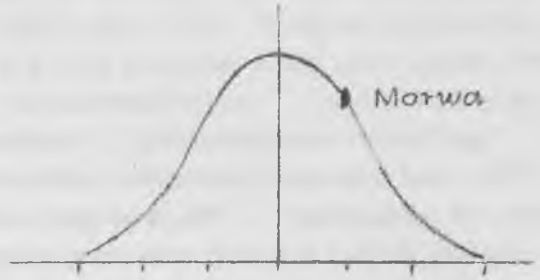
Therefore the position each enterprise 'profit' occupies within the group distribution $[P(t)]$ is the 'success' position it occupies in the population.

e.g. The average monthly profit of Model Furniture = P. 120; the mean 'wood fabrication' profit = P. 104 with a std. dev. of P. 66.7; Model's profit = +.24 std. dev. from the mean. The probability $[P(t)]$, in this particular distribution, of there being a profit with a std. dev. $\leq$ +.24 is .59.



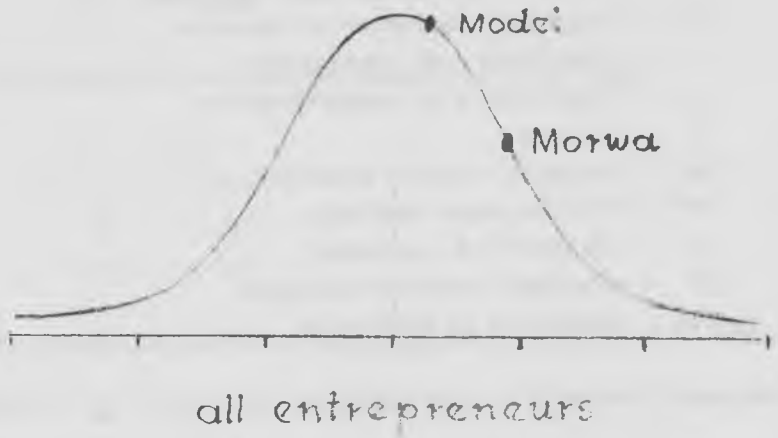
wood fabrication

By the same method, Morwa Jerseys in the garment manufacturing group (average monthly profit P. 45, σ = 1.01) has a $P(t)$ = .83.



garment manufacturing

These probabilities:- .59 for Model, .83 for Morwa - become the positions they occupy in the distribution of all entrepreneurs.



The implication is that the degree of success achieved by Morwa, with a profit of P. 45 is considerably greater than that of Model with a profit of P. 120, (or, conversely, it is much more difficult for an entrepreneur to make P. 45 a month in garment manufacturing than it is to make P. 120 in wood fabrication).

This procedure was followed for all entrepreneurs. The success values assigned to them are shown in Table 1 and are referred to as 'Success Percentiles'.

Definitions of the symbols used in the Statistical Notes are:

π = Success Percentile
n = sample size
X = independent variable
Y = additional independent variable
s = standard deviation of sample
r = coefficient of correlation
r^2 = coefficient of determination
F = F ratio
H = Kruskal-Wallis statistic
χ^2 = Chi squared statistic
t = student's t variable
Z = standard normal variable
ANOVA = Analysis of Variance.

3. Success Percentiles regressed on TEST OF 'g' - CULTURE FREE.

n = 45
$\bar{X}$ = 21.04
s = 7.56
r = - .05

The mean score for entrepreneurs with success percentiles $>$ 50 was 21.12; for those $<$ 50 it was 21.00.

4. Success Percentiles regressed on RDL test:

n = 26
$\bar{X}$ = 10.46
s = 6.49
r = - .22

Entrepreneurs with a success percentile $>$ 50 had a mean score of 8.5; those with $<$ 50 a mean score of 11.9. An analysis of variance (MANN-WHITNEY TEST) yielded a Z of 1.19, i.e. a significance level of 88 percent.

5. Success percentiles regressed on SPK test:

n = 26
$\bar{X}$ = 22.23
σ = 7.53
r = - .08

6. Success percentiles regressed on TAB test:

n = 26
$\bar{X}$ = 19.23
σ = 11.91
r = - .06

7. Success percentiles regressed on NUMERACY test:

n = 25
$\bar{X}$ = 8.4
σ = 5.85
r = - .01

8. Success percentiles regressed on PLAN test:

n = 26
$\bar{X}$ = 26.77
σ = 16.72
r = - .20

Entrepreneurs with a success percentile $>$ 50 had a mean score of 23.6. Those with $<$ 50 had a mean score of 28.9. An analysis of variance (MANN-WHITNEY TEST) yielded a Z of .79, i.e. a significance level of 78 percent.

9. Success percentiles regressed on FORM COMP. TEST:

n = 25
$\bar{X}$ = 9.40
σ = 3.57
r = - .18

The entrepreneurs were split into three age groups:

Group 1: 25 years: $n = 7$; $\bar{\pi} = 47.0$
Group 2: 25-35 years: $n = 28$; $\bar{\pi} = 51.6$
Group 3: 35 years: $n = 21$; $\bar{\pi} = 43.0$

The KRUSKAL-WALLIS one-way analysis of variance test yielded the result $H = 0.89$ (an H of 5.99 is significant at the 95 percent level).

13. Four of the industrial categories contained both male and female entrepreneurs.

Males : $n = 18$; $\pi > 0.50 = 7$; $< 0.50 = 11$
Females: $n = 20$; $\pi > 0.50 = 10$; $< 0.50 = 10$

MANN-WHITNEY TEST: $Z = 0.06$
χ^2 TEST: $\chi^2 = 0.47$

14. Among the 56 entrepreneurs, two tribal groups dominate, one with fifteen members and one with ten. Twelve tribal groups are represented in the remaining thirty-one. The success rankings of these three groups were compared by the KRUSKAL-WALLIS TEST which generated an H of 1.77 indicating no significant difference between the three. ($H = 5.99$ would be required to be significant at the 95 percent level).

The Observed (O) and Expected (E)* frequencies of entrepreneurs, expressed as percentages, are shown in the following table.

	NGWATO	KWENA	NGWAKETSE	KGATLA	MALETE	ROLONG	OTHERS
O	6.0	4.0	19.0	29.0	8.0	8.0	26
E	36.8	13.5	13.2	5.9	2.6	2.0	26

*The expected frequencies are those shown in the 1964 census. Although the total population is roughly forty percent greater today, there is no particular reason to think the tribal proportions of the national population have changed.

The less successful group had a mean score of 9.7; the more successful a mean score of 8.9. An analysis of variance (MANN-WHITNEY) yielded a Z of .72, i.e. a significance level of 76 percent.

10. The scores of the six R.T.C. administered tests were totalled for each entrepreneur. Success percentiles were regressed on these totals. The results of this exercise were as follows:

n = 25
$\bar{X}$ = 96.96
A = 47.74
r = - .12

11. Success percentiles regressed on ACHIEVEMENT MOTIVATION TEST:

n = 21
$\bar{x}$ = 43.05
A = 25.93
r = - .17

MANN-WHITNEY TEST

Success ranking > 50 - achievement mean score 35.1
Success ranking < 50 - achievement mean score 49.0
Z = 1.24 (significance level 89 percent).

As virtually all of the images recorded were either achievement' or 'power', the ANOVA result can also be interpreted as indicating that the successful group tends to be power motivated (significance level 89 percent).

12. Success percentiles regressed on AGE OF ENTREPRENEUR:

n = 56
$\bar{X}$ = 33.95
A = 10.0
r = - .15

The Observed and Expected frequencies are significantly different. $\chi^2 = 20.69$. Significance level 99.9 percent.

15. Success percentiles regressed on NUMBER OF YEARS FORMAL EDUCATION:

$n = 56$
$\bar{x} = 7.57$
$s = 3.32$
$r = -.03$

The success rankings of the group with below average education were compared with those of the above average group using the MANN-WHITNEY TEST.

$x = < 7.57 \quad n = 28$
$x = > 7.57 \quad n = 28$
$Z = .08$

16. Success percentiles regressed on NUMBER OF YEARS WORK EXPERIENCE:

$n = 56$
$\bar{x} = 4.34$
$s = 4.93$
$r = -.29$ ($r = -.47$ if those with less than three years experience are dropped from the sample)

The success rankings of three groups were compared:

$X = \leq 2 \quad n = 25$ mean success rank = 28.88
$X = > 2 < 6 \quad n = 15$ mean success rank = 38.3
$X = \geq 6 \quad n = 16$ mean success rank = 18.28

The KRUSKAL-WALLIS TEST generated an H of 10.21, a significance level greater than 99 percent.

17. Success percentiles regressed on NUMBER OF WEEKS MANAGEMENT TRAINING produced the following result:

n = 56
$\bar{x}$ = 5.29
σ = 11.72
r = .08

18. The energy, initiative and aggressiveness of entrepreneurs, as estimated by estate managers and technical advisers, was quantified and totalled on a scale of 0 - 12. Success percentiles were regressed on these estimates with the following result:

n = 42
$\bar{x}$ = 9.57
σ = 1.91
r = .22

19. Multiple Linear Regression:

X = hustle (i.e. energy, initiative and aggressiveness combined)
Y = years of related work experience beyond four
π = probability of success
n = 23
generated π = $29.28 + 4.87X - 3.53Y$
r = .58 (99 percent sig. level = .52)
r^2 = .34

20. Partnerships:

n = 5.0
$\bar{\pi}$ = 58.60
σ = 36.94

Single Proprietorship:

n = 45.0
$\bar{\pi}$ = 46.00
σ = 25.46

F = 1.01 (95 percent sig. level = 4.04)

21. Older than average enterprises:

n = 16.0
$\bar{\pi}$ = 37.0
σ = 23.73

Younger than average enterprises:

n = 24.0
$\bar{\pi}$ = 53.92
σ = 27.01

F = 4.14 (95 percent sig. level = 4.10)

N.B. The Leather Work and Wood Fabrication enterprises were dropped from the sample as, in both cases, all firms commenced operations at roughtly the same time.

Success percentiles regressed on AGE OF ENTERPRISE:

Garment Manufacturing	n = 14;	r = -.29
Metal Fabrication	n = 8;	r = -.46
Building Construction	n = 7;	r = -.38
Diverse	n = 10;	r = -.32

22. Number of Employees:

All Groups	Less Garment	Less Garment and Construction
> average	> average	> average
n = 19.00	n = 15.00	n = 13.00
$\bar{\pi}$ = 47.00	$\bar{\pi}$ = 54.47	$\bar{\pi}$ = 58.38
σ = 29.75	σ = 27.32	σ = 27.20
< average	< average	< average
n = 31.00	n = 21.00	n = 17.00
$\bar{\pi}$ = 47.42	$\bar{\pi}$ = 38.86	$\bar{\pi}$ = 33.81
σ = 25.01	σ = 23.45	σ = 18.16
F = 0.003	F = 3.39	F = 8.46

Success percentiles regressed on NUMBER OF EMPLOYEES:

Garment	n = 14,	range 0-21,	r = -.58
Construction	n = 7,	range 15-69,	r = -.36
Metal Fab.	n = 8,	range 0-20,	r = +.92
Wood Fab.	n = 4,	range 1- 3,	r = +.95
Leather Work	n = 6,	range 2- 4,	r = +.26
Diverse	n = 11,	range 1-10,	r = +.54

23. Nepotic Enterprises: n = 17.00
$\bar{\pi}$ = 46.24
s = 24.00

Non-nepotic: n = 33.00
$\bar{\pi}$ = 47.79
s = 28.21

F = .04 (95 percent sig. level = 4.03)

Success percentiles were regressed on NUMBER OF EMPLOYEES RELATED: The correlation coefficient was r = -.14.

24. Average Controlled Capital: This figure is the aggregated total assets, as reported on financial statements of all enterprises in the group concerned, divided by the number of enterprises in the group.

Average Employed Capital: This figure is the aggregated total assets; plus the aggregated total value (@ P. 90.0 per m^2) of the space occupied; plus the aggregate of a pro-rated proportion of non-rented assets of the estates involved, as estimated by estate managers, of all enterprises in the group concerned, divided by the number of enterprises in the group.

Average Invested Capital: The total accumulated recurrent expenditure, as reported by Roostal*, of P. 2,209,000 divided

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*Roostal Development AB, BEDU - Its Past and Future, Stockholm, 1978. P. 20 (draft)

by the total number of enterprises under the BEDU umbrella at time of writing (56) = P. 39,446. This was rounded off to P. 39,000 and added to the average 'employed capital' of each enterprise.

25. Success percentiles regressed on AMOUNT OF CONTROLLED CAPITAL[x]:

Construction	Garment	Metal Fabrication
n = 7	n = 14	n = 8
$\bar{x}$ = 19,364	$\bar{x}$ = 10,364	$\bar{x}$ = 17,832
σ = 13,729	σ = 9,411	σ = 13,987
r = .11	r = - .75	r = .90

Diverse	Leather	Wood Fabrication
n = 11	n = 6	n = 4
$\bar{x}$ = 8,659	$\bar{x}$ = 3,221	$\bar{x}$ = 3,762
σ = 9,976	σ = 1,969	σ = 1,960
r = .78	r = .96	r = .63

When those with an above average amount of controlled capital were compared with the remainder the following F ratios were generated:

All Entrepreneurs	Not including garment industry
> average n = 21	> average n = 15
$\bar{\pi}$ = 52.10	$\bar{\pi}$ = 61.80
σ = 30.11	σ = 27.13
< average n = 29	< average n = 21
$\bar{\pi}$ = 43.76	$\bar{\pi}$ = 33.62
σ = 23.69	σ = 17.68
F = 1.20 (95 percent sig. level = 4.04)	F = 14.27 (99 percent sig. level = 7.44)

When both the construction and the garment industries were dropped F = 16.46 (99 percent sig. level = 9.33).

[x] There is a possibility that 'Amount of Controlled Capital', to an extent, is dependent on success - which would lessen the significance of this result.

26. Success percentiles regressed on AMOUNT OF EMPLOYED CAPITAL:

Construction	Garment	Metal Fabrication
$n = 7$	$n = 7$	$n = 8$
$\bar{X} = 25,701$	$\bar{x} = 23,216$	$\bar{x} = 49,646$
$s = 13,074$	$s = 11,220$	$s = 27,666$
$r = .05$	$r = -.56$	$r = .92$

Diverse	Leather	Wood Fabrication
$n = 11$	$n = 6$	$n = 4$
$\bar{x} = 20,162$	$\bar{x} = 10,471$	$\bar{x} = 23,262$
$s = 11,766$	$s = 1,969$	$s = 1,960$
$r = .78$	$r = .96$	$r = .63$

When those with an above average amount of employed capital were compared with the remainder, the following F ratios were generated:

All Entrepreneurs	Not including garment industry
> average $n = 22$	> average $n = 15$
$\bar{\pi} = 54.32$	$\bar{\pi} = 59.87$
$s = 29.02$	$s = 28.15$
< average $n = 28$	< average $n = 21$
$\bar{\pi} = 41.71$	$\bar{\pi} = 35.00$
$s = 23.61$	$s = 18.71$
$F = 2.87$ (95 percent sig. level = 4.04)	$F = 10.17$ (99 percent sig. level = 7.44)

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27. Multiple linear regression:

X = Amount of capital controlled by entrepreneur
Y = Quality of financial records
π = Probability of success
$n = 36$ (does not include garment industry)

Result: $\pi = 7.04 + .0008X + 1.47Y$
$r = .58$ (99 percent sig. level = .42)
$r^2 = .34$

28. Degree of Capital Intensity (K/L ratio where K = amount of employed capital and L = number of employees + entrepreneur) was computed. Success percentiles were regressed on this ratio:

Construction	Garment	Metal Fabrication
n = 7	n = 14	n = 8
$\bar{x}$ = 878	$\bar{x}$ = 2,883	$\bar{x}$ = 7,536
s = 313	s = 1,253	s = 6,536
r = .79	r = .16	r = - .44
Diverse	**Leather**	**Wood Fabrication**
n = 11	n = 6	n = 4
$\bar{x}$ = 4,035	$\bar{x}$ = 2,595	$\bar{x}$ = 7,685
s = 1,991	s = 571	s = 2,440
r = .12	r = .44	r = - .82

When the group representing those who are above average in capital intensity for their industrial category was compared with the remainder, an F ratio of 0.10 was generated (95 percent sig. level = 4.04).

29. Returns to Investment: There is considerable room for debate in respect to the methods used to arrive at the figures displayed in Table 2. Some of the more contentious are discussed below.

a) Average Investment per enterprise: Although the 'capital employed' reflects, as accurately as is possible, the actual amount of liquid and physical capital being used by the estate, the apportioning of the 'accumulated recurrent expenditure' equally amongst all enterprises (56 including those not surveyed) is a bit crude. Some enterprises and some industries have undoubtedly been a bigger drain on BEDU staff resources than have others. Were it possible to divide this burden 'fairly', it is unlikely that it would affect the 'averages' to any great extent, given the enterprise number, age, size and location mix of most industries.

b) Profit on Investment: The method of calculating this figure would not delight the World Bank, as it does not take into account the phasing in of the investment over time. It is not likely, though, that a more precise method would have yielded results much different from those shown, nor upset the relative positions.

c) Average Number of Jobs per Enterprise: The total number of jobs (536) is made up of the total number of employees reported by the fifty enterprises surveyed plus the entrepreneurs themselves. As six enterprises were not included, one a brickyard (approximately fifty employees) and one a tannery (approximately twenty), the actual total of jobs created by the BEDU is probably close to 670 for 56 enterprises. Fischer/Halbach estimated 527 for 45 enterprises in 1977; Roostal 700 for 47 enterprises in early 1978. The Roostal estimate seems high unless he has included BEDU staff in his total.* In any event, the 'average investment per job created' that Roostal arrived at by a different route (P. 5,700) is remarkably close to that calculated here (P. 6,036).

d) All Manufacturing Enterprises: This category includes all enterprises less those in the Building Construction category. This yields a much more meaningful set of figures than does the 'All Enterprises' one, on two counts. Firstly, the investment that creates a job in the 'construction industry' is primarily the investment in the 'construction project'. Secondly, there is no good

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*It may be argued that BEDU staff jobs have been created as well, by the investment in the project, and should be included in the total. This lacks a certain logic, if the use to which the total is put is to calculate the 'investment per job created' by the project. It would be akin to calculating the 'cost per patient day' for a hospital and including the staff as patients.

reason to presume that the same number of jobs would not have been created for local labour had the job been let to a non-BEDU contractor.

30. Adequacy of Financial Records:

> average n = 32	good records n = 9
$\bar{\pi}$ = 50.34	$\bar{\pi}$ = 62.78
σ = 29.24	σ = 30.21
< average n = 18	remainder n = 41
$\bar{\pi}$ = 41.78	$\bar{\pi}$ = 43.85
σ = 20.80	σ = 24.88
F = 1.2	F = 3.96
(95 percent sig. level = 4.04)	(95 percent sig. level = 4.04)

31. 'Bespoke only' enterprises compared with remainder:

Bespoke only n = 18	others n = 32
$\bar{\pi}$ = 52.17	$\bar{\pi}$ = 44.50
σ = 28.54	σ = 25.51

F = .96 (95 percent sig. level = 4.04)

32. Enterprise profits regressed on 'Transfer Cost Advantage':

n = 32
$\bar{X}$ = 1.53
$\bar{Y}$ = 161
σ_x = 2.02
σ_y = 410
r = .34 (99 percent sig. level = .44)
r^2 = 12

33. Enterprise profits regressed on 'Number of Competitors' (weighted):

n = 32
$\bar{x}$ = 12.75
$\bar{Y}$ = 161
σ_x = 5.6
σ_y = 410
r = - .44 (99 percent sig. level = .44)
r^2 = .20

Competitors were weighted on the following scale:

Formal sector	X 2
BEDU enterprise	X 1
Brigade	X 0.5

34. Enterprise profits regressed on 'Wage Rate Differentials':

n = 32
$\bar{x}$ = 156
$\bar{Y}$ = 161
σ_x = 20
σ_y = 410
r = .29 (99 percent sig. level = .44)
r^2 = .8

35. Enterprise profits regressed on 'Availability of Trained Workers':

n = 32
$\bar{x}$ = 15.81
$\bar{Y}$ = 161
σ_x = 8.5
σ_y = 410
r = - .12 (99 percent sig. level = .44)
r^2 = .01

36. Enterprise profits regressed on Adviser/Enterprise Ratios:

n = 32
$\bar{x}$ = .38 (i.e. 1 adviser per 2.63 enterprises)
$\bar{Y}$ = 161
σ_x = .33
σ_y = 255
r = .55 (99 percent. sig. level = .44)
r^2 = .30

The regression is:

$$Y = -48 + 551.X.$$

37. The success percentiles of the enterprises receiving above average assistance were compared to those receiving 'average' or below average assistance.

> average $\bar{\pi}$ = 22.00
others $\bar{\pi}$ = 49.79

F = 3.24 (95 percent sig. level = 4.10)

< average $\bar{\pi}$ = 55.50
others $\bar{\pi}$ = 41.44

F = 2.57 (95 percent sig. level = 4.10)

> average $\bar{\pi}$ = 22.00
< average $\bar{\pi}$ = 55.50

F = 4.66 (95 percent sig. level = 4.55)

38. Import data was abstracted from Republic of Botswana: 'External Trade Statistics', Government Printer, 1977. 'Garment' includes all items coded 60 and 61; 'Leather Goods' includes all items coded 42 plus item 64:02 (footwear); 'Wood Fabrication' includes items coded 44:80 and 44:90. 'Metal Fabrication' includes 73:66; 73:69; 73:70; 73:75; 73:81; 73:82; 73:92; 73:99; 83:80; 94:01; 94:91; 94:99.

The import data was then added to Gross Domestic Output 1974/75 of each category (as reported by Fischer/ Halbach) to give a crude estimate of Domestic Consumption.

39. 'Enterprise Profits' (Z) were regressed on 'Transfer Cost Advantage' (X) and 'Adviser/Enterprise Ratios' (Y). The regression is:

$$Z = -494 + 27.75X + 1603.4Y$$

$$r^2 = .32$$

$$r = .57 \text{ (99 percent sig. level = .46)}$$

CODE (1) (2)

1a	'g' test - General Mental Ability - Culture Free
1b	RDL test - reading English (Test centre)
1c	SPK test - speaking English " "
1d	Tab test - tabulating data " "
1e	Numerical Test " "
1f	Planning Test " "
1g	Form Completion Test " "
1h	Achievement Motivation Test
1i	Age
1j	Sex
1K	Tribal Affiliation
1l	Number of years Formal Education
1m	" " " Related Work Experiance
1n	" " weeks Management Training
1o	Energy, initiative, aggressiveness. (Hustle)
2a	Partnership (Yes/No)
2b	Age of Enterprise in months
2c	Number of PEOPLE EMPLOYED (PARTENERS + EMPLOYEES)
2d	% of Employees Related
2e	Amount of Capital Controlled (Total Assets)
2f	Amount of Capital Employed (2e + space + prop. of est.)
2g	K/L Ratio $\frac{2f}{2c}$
2h	Distribution Channel (DIRECT Consumer Govt Industry Retailer Wholesaler Agent Export
2i	Quality of Record Keeping System
2j	BESPOKE: YES / PARTLY / NO

CODE (3)

3a	Transfer cost advantage expressed as a % of factory selling price.
3b	Number of domestic competitors in local market.
3c	Wage differential advantage expressed as a % $\frac{\text{RSA w for industry}}{\text{Botswana w for enterprise}}$
3d	Availability of trained workers: % of total employees trained by entrepreneur
3e	Adviser / Enterprise ratio at estate.
3f	Above average adviser assistance provided. noted by • beside enterprise profit.
3g	Imports of competitive products.

GARMENT

RANK	ENTERPRISE	PROFIT A	PROFIT π	1a	1b	1c	1d	1e	1f	1g	1h	1i	1j	1k	1l	1m	1n	1o
G 1	TSHIPIDI KNITTERS	+ 1.50A	83.92	16	14	27	21	9	23	10		33	F	x	8	0	1	11
G 2	MORWA JERSEYS	+ 1.01	45.83	18							67	43	F	g	4	c	0	9
G 3	IDA KNIT WEAR	+ .77	26.77	15								25	F	w	9	0	1	8
G 4	SUNDAY CLOTHES	+ .68	19.75	9		14						42	F	e	0	3	0	8
G 5	EDDIES FASHIONS	+ .51	6.69	18	7	25	26	4	27	8		45	F		11	0	1	11
G 6	BOSWA GARMENT	+ .43	0.66	19							9	49	F	r	10	14	1	11
G 7	LEBOTSE LINENS	− .39	3.65	13							27	28	F	g	2	0	41	7
G 8	BOITEKO DRESS M.	− .26	13.60		3	14	5	4	19	8		42	F	t	4	0	2	9
G 9	KANANA TAILOR	− .18	48.43	10								42	M	x	0	6	0	7
10	EUNILIZ TEXTILES	− .21	50.42	16	18	28	26	6	47	11		47	F	u	6	0	2	8
11	ROKA TEXTILES	−.47	70.32	28								35	F	g	12	0	40	12
12	TSWELELO FASH.	− 1.4	114.10	20	7	22	2	4	11	9	14	46	F	n	6	15	2	8
13	BOTHAA'GA HD. KN.	− 1.68	164.6	29	15	24	31	7	40	14		37	F	h	6	12	14	12
14	TSWANA LILY	− 1.95	185.4	28	12		18		50			52	F	T	11	13	8	12

WOOD FABRICATION

RANK	ENTERPRISE	TT	1a	1b	1c	1d	1e	1f	1g	1h	1i	1j	1k	1m	1n	1o
W1	FRANCIST. FURN	+ 187 1.24 - 85	20	4	17	15	5	9	9	16	30	M	m	7	5	2
W2	MODEL FURN	+ 120 .24 - 59		3	14	2	0	0	2		20	M	z	12	0	2
W3	PAULS WOOD. P.	+ 80 - .35 - 37	32	20	29	32	20	53	12	75	22	M	k	10	0	1
W4	POLOKANO COFF.	+ 29 - 1.12 - 17	19	18	30	23	13	30	11	17	50	F	r	10	0	2
W2		59									22	M	z	7	0	2

METAL FABRICATION

RANK	ENTERPRISE	TT	1a	1b	1c	1d	1e	1f	1g	1h	1i	1j	1k	1l	1m	1n	1o
M1	TUMELO ENG	+1926 2.044 96	25	14	30	33	18	39	10	27	25	M	g	12	4	5	12
M4	SEFAKWE MET. W.	+ 324 -.434 34	14	9	23	25	6	22	9	33	21	M	g	7	3	26	
M2	MOTSUPATSELA E.	+1168 .870 79	23	7	20	10	8	35	11	50	35	M	g	9	10	0	9
M3	BOIKAGO ENG	+ 736 .204 58	25	19	32	25	22	41	13	54	28	M	g	10	0	1	10
M6	FRANCIST. TIN SM.	+ 241 -.564 30	12							88	29	M	z	0	0	0	
M7	J.M.'S SOLAR H.	+ 100 -.78 23	23								27	M	g	10	2	0	5
M8	R+T'S METAL W.	+ 80 -.81 22									30	M	t	7	3	1	11
M5	J. NTHUSANG'S	+ 265 -.52 31	27	17	32	26	12	35	13	67	21	M	h	10	0	0	

LEATHERWORK

RANK	ENTERPRISE	TT	1a	1b	1c	1d	1e	1f	1g	1h	1i	1j	1k	1l	1m	1n	1o
L1	MOLEFE FURS I	+ 125 +1.68 90	18								38	F	g	7	4	0	9
L2	LEATHER BAGS I	+ 90 +.78 76	24								29	F	g	7	5	0	9
L3	MASTERCRAFT I	+ 42 -.45 34	16							25	59	M	t	5	8	0	9
L4	MOCHUDI LEATH I	+ 35 -.63 28	11							29	35	F	g	7	5	0	7
L5	BOTSWANA LEATH I	+ 33 -.68 26	22							77	29	F	g	9	6	0	10
L6	MADISA LEATHER I	+ 32 -.71 25	24								31	M	g	11	6	0	7

BUILDING CONSTRUCTION

RANK	ENTERPRISE	TT	1a	1b	1c	1d	1e	1f	1g	1h	1i	1j	1k	1l	1m	1n	1o
B1	E. L & B CONSTR	+2323 1·52ª 91	31							40	27	M	r	11	3	40	11
B2	MONGWAKETSE C.	+2040 1·26ª 87	11	1	11	4	2	0	2		48	M	t	4	0	1	12
B3	SERALANYANE	+479 -·14ª 45	19								40	M	t	4	0	1	9
B5	BOSELE CONST.	+13 -·57 29	31								45	M	g	12	18	0	11
B4	TSHOSA CONST	+241 -·36 37	32	7	9	5	8	6	12		24	M	k	9	4	0	8
B7	BOIKANYO	−611 -1·13 15									42	M	t	10	14	1	7
B6	EM & SONS	−10 -·58 29									47	M		4	6	1	12
B1		91									24	M	r	7	3	1	
B7		15									25	M	t	7	2	1	
B7		15									28	M	t	7	1	1	

DIVERSE

RANK	ENTERPRISE	TT	1a	1b	1c	1d	1e	1f	1g	1h	1i	1j	1k	1l	1m	1n	1o
D1	GAB. PRINTERS	+ 1538 2.88 A 99	32								27	M	w	11	5	4	12
D2	BIG GAME JEWEL.	+ 413 .32 A 62		18	33	36	15	52	13		29	M	K	12	5	40	
D3	THUSANO POTT.	+ 350 .17 A 57	25	4	22	24	5	15	12	26	25	M	h	10	1	1	10
D4	THEMBA PRINTS	+ 161 -.25 A 40	26								25	M	m	11	0	1	10
D5	KALAHARI GEMS.	+ 150 -.28 A 39	32								29	F	l	9	6	40	11
D6	FRANCIST. UPHOL.	+ 60 -.49 32	14	2	11	1	4	3	3		40	M	A	4	2	0	6
D7	PC. UPHOLST.	+ 24 -.57 29	8								49	M	A	6	15	1	10
D8	BOTS. TRAD ART	+ 17 -.56 29	24	6	22	20	6	20	9	63	27	M	m	9	8	0	9
D9	LION CURTAINS	- 2 -.62 27	3	0	10	0	3	7	2		51	M	l	1	15	1	12
10	OK. ORN. PRODS	- 138 -.94 18		18	24	39	13	39	12		28	F			4	2	
11	BOITEKO UPH.	- 156 -.98 18	31							27	23	M	t	10	2	0	9
D8		29	26	13	26	22	13	41	10	73	25	M	9	7	0	0	
D1		99	28								26	M	l	7	5	4	12

GARMENT

	2a	2b	2c	2d	2e	2f	2g	2h	2i	2j
G1 92	N	36	1+7	0	4747	22529	2816 593	D/RC	20	P
G2 63	N	31	1+3	100	1899	8899	2225 475	D/SRC1	20	P
G3 77	N	29	1+4	25	1765	17144	3428 353	D/SC	10	P
G4 75	N	35	1+3	0	3596	18975	4744 899	D/SC	00	Y
G5 69	N	45	1+4	0	2789	18168	3633 558	D/SC	20	P
G6 66	N	4	1+20	5	21946	31946	1521 1045	D/SRC	20	P
G7 65	N	41	1+0	0	590	1090	1090 590	D/C	15	N
G8 60	N	46	1+6	0	1285	16664	2381 184	D/SC	10	P
G9 43	N	19	1+9	22	16729	34511	3451 1673	D/SC	10	P
10 42	N	44	1+4	0	8535	26317	5263 1707	D/SC	10	N
11 32	N	10	1+8	0	14113	31895	3544 1568	D/RC	30	N
12 66	N	39	1+13	0	27499	45281	3234 1964	D/SC1	20	P
13 60	N	46	1+21	0	23631	29631	1347 1074	D/SR	30	N
14 41	N	60	1+12	0	15977	21977	1691 1299	D/SR	20	N

WOOD FABRICATION

	2a	2b	2c	2d	2e	2f	2g	2h	2i	2j
W1 85	N	1 20	1 + 3	0	6300	25800	6450 1575	D/G.C	30	Y
W2 59	Y	2 20	2 + 2	0	1983	21483	5371 496	D/C	20	Y
W3 37	N	1 16	1 + 2	0	4286	23786	7929 1429	D/G.C	30	Y
W4 17	N	1 17	1 + 1	0	2479	21979	10989 1240	D/C	20	N

METAL FABRICATION

	2a	2b	2c	2d	2e	2f
M1	N196	7	1+17	0	31878	80278
M4	N134	11	1+6	0	14014	38014
M2	N179	8	1+20	0	39348	87748
M3	N158	7	1+14	7	29853	78253
M6	N130	17	1+2	100	2184	21684
M7	N123	32	1+4	0	3200	31800
M8	N122	5	1+0	0	10710	23475
M5	N131	11	1+8	0	11466	35466

2g	2h	2i	2j
4459 1771	D/G C	30	Y
5430 2002	D/G	15	Y
4178 1874	D/G C	15	Y
5217 1990	D/G I	30	Y
7228 725	D/G C	15	P
6360 640	D/G C	15	N
23475 10710	D/G C	30	Y
3941 1274	D/G	15	Y

LEATHER WORK

	2a	2b	2c	2d	2e	2f	2g	2h	2i	2j
L1 50	N	39	1+3	33	6060	13310	3327 1515	D/RC	20	P
L2 76	N	34	1+4	25	4992	12242	2448 998	D/RC	20	P
L3 34	N	34	1+4	25	3535	10785	2157 707	D/RC	15	P
L4 28	N	33	1+2	100	1550	8800	2933 517	D/RC	20	P
L5 26	N	38	1+4	75	1670	8920	1784 334	D/RC	20	P
L6 25	N	34	1+2	0	1520	8770	2923 507	D/RC	20	P

BUILDING CONSTRUCTION

	2a	2b	2c	2d	2e	2f
B1	Y 2	5	2+16	0	16430	23224
B2	N 1	10	1+25	0	27463	30368
B3	N 1	9	1+25	4	12116	20021
B5	N 1	42 •	1+48 •	2	44329	51123
B4	N 1	6	1+15	0	6989	13783
B7	Y 3	4	3+18	10	4821	12726
B6	N 1	46 •	1+69 •	3	23400	28664

2g	2h	2i	2j
1290 913	D/G I	20	Y
1168 1056	D/G C I	30	P
770 466	D/G C	20	Y
1043 905	D/G	20	Y
861 437	D/G	20	Y
606 230	D/G	10	Y
409 334	D/G C	20	Y

DIVERSE

	2a	2b	2c	2d	2e	2f	2g	2h	2i	2j
D1 90	Y1	7	2+8	0	35550	50250	5025 3555	D/G,I,C	30	Y
D2 42	N1	13	1+10	0	9824	16074	1461 893	D/C R W	20	P
D3 57	N1	7	1+3	0	2600	19600	4900 650	D/R	30	P
D4 43	N1	2	1+2	0	6105	21484	7161 2035	D/C I	10	P
D5 32	N1	42	1+4	40	15067	19847	3969 3013	D/C R	10	N
D6 32	N1	20	1+2	0	1469	20969	6990 490	D/R C	20	P
D7 29	N1	29	1+8	0	4952	19652	2184 554	D/G I C	15	P
D8 29	Y2		2+5	0	638	6888	984 91	D/C	30	N
D9 27	N1	34	1+6	0	9900	27682	3955 1414	D/G I C	20	P
10 18	N1	15	1+2	0	7855	11455	3818 2618	D/R C I	10	P
11 18	N1	6	1+1	100	1285	7885	3942 642	D/C	10	Y

INDUSTRY PROFITS BY LOCATION

	GARMENT GAB.	GARMENT F'TOWN	WOOD FAB. F'TOWN	METAL FAB GAB.	METAL FAB F'TOWN	LEATHER MACH.	CONSTR.	DIVERSE
	G1 83	G6 0	W1 187	M1 1926	M4 324	L1 125	B1 2323	D1 1538
	G2 45		W2 120	M2 1168	M6 241	L2 90	B2 2040	D2 413
	G3 26		W3 80	M3 736	M5 265	L3 42	B3 479	D3 350
	G4 19		W4 29	M7 100		L4 35	B5 13	D4 161
	G5 6			M8 80		L5 33	B4 241	D5 144
	G7 -3					L6 32	B7 -611	D10
	G8 -13						B6 -10	D6 -66
	G9 -48							D11
	10 -50							D7 -24
	11 -70							D9 -2
	12 -114							
	13 -164							
	14 -185							
$\bar{\pi}$	-36	0	104	802	277	60	639	320
A	80	0	67	777	43	39	1107	520
n	13	1	4	5	3	6	7	10
3a	.05	.06	5.5	2.8	3.7	.2		
3b	19	7	13	7.5	5.5	8.		
3c	140	140	200	166	166	150		
3d	79	79	75	86	86	100	27	85
3e	.25	.33	.40	.57	.40	.50	.38	
3f	see ent.	see ent.	see ent.	see ent.	see ent.	see ent.	see ent.	see ent.
3g	8350	8350	537	65	65	2271		