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RED MEAT PROCESSING IN THE FREE STATE : PROBLEMS ENCOUNTERED AT FARM LEVEL

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The purpose of this paper is to highlight problems encountered by red meat processors at farm level in the Free State and also to make a contribution to extension, policy making and ultimately to increased economic growth through enhanced value adding in the red meat processing industry. A personal survey was carried out. Analyses were based on data of 36 enterprises and consisted of ranking of problems as well as contingency table analyses. Results indicated that deregulation had a marked effect on business opportunities and that the survey population exerts an important influence on employment and economic activity. The five most critical problem areas were: marketing, labour, tax, economic climate and competition. Contingency table analyses revealed the existence of relationships between certain business characteristics and problems.

ROOIVLEISVERWERKING IN DIE VRYSTAAT : PROBLEME ONDERVIND OP PLAASVLAK

Die doel van hierdie referaat is om 'n oorsig te gee van probleme waarmee rooivleisverwerkers op plaasvlak in die Vrystaat te kampe het, asook om 'n bydrae tot voorligting, beleidvorming en uiteindelik verhoogde ekonomiese groei deur waardetoevoeging in die rooivleisverwerkingsbedryf te maak. Data is ingesamel met behulp van 'n persoonlike opname. Data van 36 besighede is in die finale ontledings gebruik. Resultate is ontleed deur probleme in orde van belangrikheid te rangskik en verbande tussen besigheidseienskappe en probleme deur gebeurlikheidstabelle bloot te lê. Die resultate het getoon dat deregulering 'n belangrike invloed op besigheidsgeleenthede gehad het en dat die besighede onder beskouing 'n belangrike invloed op indiensname en ekonomiese aktiwiteit uitoefen. Bemerkings, arbeid, belasting, ekonomiese klimaat en mededinging, is as die vyf mees kritiese probleemgebiede geïdentifiseer. Daar is vasgetel dat belangrike verbande tussen sekere besigheidseienskappe en probleme bestaan.

1. INTRODUCTION

The objective of this paper is to highlight problems encountered by red meat processors at farm level. It is believed that information in this regard will contribute to improved extension and policy making, ultimately increasing economic growth through enhanced value adding in the red meat industry. Research was based on data obtained by means of a personal survey amongst Free State farming enterprises actively engaged in further processing of red meat products - full details may be obtained from Berning (1996). Results were analysed by ranking of problems and contingency table analyses to reveal relationships between problems and certain business characteristics. The importance of the research is established in the next section. In Section 3 the method of research is explained. Section 4 contains results and is followed by the conclusion in Section 5.

2. IMPORTANCE OF RESEARCH

The research stemmed primarily from structural imbalances within the economy of the Free State, the important role of small scale processors in economic development and new opportunities brought about by deregulation.

The provincial economy experiences a lack of production capacity with respect to capital and final consumption goods, particularly with regard to manufactured goods. Imports of intermediate manufacturing and final consumption goods were together responsible for 64% of total inter regional imports to the Free State in 1985. Although primary agriculture comprised 15,5 percent of the gross domestic product (GDP), the food industry were responsible for the majority of inter regional manufactured imports (NRDP, 1991). A substantial part of food production leaves the Free State unprocessed, while processed products are imported from other provinces. If value adding took place inside of the Free State instead, the

GDP could be increased significantly (UOVS, 1991). This is emphasized by the fact that agro-industries were responsible for 65% of provincial manufacturing output. The red meat industry contributed 36 percent of total manufacturing output, rendering it the most important agro-industry of the province.

Deregulation since 1991 has exerted a positive influence on value adding in the red meat industry of the Free State (Agrocon, 1995; Potgieter en Van der Vyver, 1995). Farmers were enabled to, and indeed did participate in further processing of farm products. Despite speculations of both failure and success, little empirical evidence exists to support qualitative information about local processing at farm level (Wolvaart, 1994; Fiske, 1995; Potgieter, 1994). In America this situation led to numerous studies amongst small businesses, in which surveys were conducted to study and rank problems (Dandridge and Sewall, 1978; Franklin and Goodwin, 1983; Peterson, Kozmetsky and Ridgway, 1983; Torok, Schroeder and Menkhaus, 1991; Wichman, 1983). These studies showed the way towards better understanding of factors influencing red meat processors, in order to assist legislative and business leaders to design policies for dealing with the economic environment of agribusiness firms.

3. METHOD OF RESEARCH

A personal survey was conducted amongst registered farming enterprises actively engaged in red meat processing. The questionnaire used, was an adjusted version of that of Torok, Ahlschwede, Hambly and Cordes (1988). Apart from questions designed to gain information about business characteristics, there were 119 detailed questions on specific business problems related to 16 general problem areas¹. Interview time varied between 40 and 180 minutes. Participants were asked to answer questions in view of their situation at the time of the interview, as well as the following five years (the nature of questions is discussed with the results in Section 4). Final results were based on

data obtained from 36 participants, representing at least 80 percent of the survey population. Respondents were evenly dispersed throughout the province.

Analysis of results comprised ranking of general areas of business problems and specific problems to determine order of importance, as well as contingency table analyses to determine relationships between business characteristics and problems. The method of ranking employed, was adopted from Torok, Schroeder and Menkhaus (1991). With regard to studying of relationships between business characteristics and problems, previous researchers indicated the preference of determining which problems could be ascribed to certain business characteristics (Dandridge and Sewall, 1978; Swanson, 1981). According to Hoy and Vaught (1980), any sizeable group of small business managers is likely to contain a mixture of personalities, and problems faced will be unique to particular lines of business. Statistical analyses, using Chi-square tests and Cramer's statistic, were employed by Vozikis and Glueck (1980) to test for significant differences in problems experienced by businesses in different stages of development. In this study Chi-square tests were employed to aid with interpretation of contingency tables (see Alreck and Settle (1985) for discussion on contingency table analyses).

4. RESULTS

4.1 Profile of participants

One of the most important results of the study, is that 26 (72 percent) of the 36 businesses surveyed, were established

after 1991, the year of extensive deregulation in the red meat industry. Median turnover during 1995 amounted to R750 000. Only two businesses had turnover of less than R100 000, 13 had turnover of more than R1 million and five in excess of R5 million. In total, 396 employees were employed by respondents during 1995 (on average 11 employees per respondent). The dominating business form proved to be sole proprietorship (25 businesses), followed by closed corporations (five businesses).

4.2 Relative importance of problem areas for all participants

Table 1 shows the 16 problem areas included in the questionnaire, ranked in order of importance according to a calculated score. After participants had gained thorough understanding of each general problem area, they identified five areas perceived to be most problematic and rated them on a scale from one (most important) to five (least important).

At least a third of the participants listed either marketing, labour, tax, economic climate, competition, acquisition of raw materials (mainly animals for slaughtering purposes) and transportation under the five most important problem areas. Marketing was the most important problem area, with 19 (53 percent) of the participants placing it under the five most important problem areas. These participants assigned an average ranking of 2,37 to marketing, which resulted in a score of 139. Relatively fewer participants placed labour under the top five problem areas, but they assigned a low average ranking of 1,80, indicating that they experience or foresee serious problems regarding

Table 1: General problem areas in order of importance

Rank	General problem area	Mean (x) ^a	%Response (n) ^b	Score (t) ^c
1	Marketing	2,37	53	139
2	Labour	1,80	42	134
3	Tax	3,31	72	122
4	Economic climate	3,11	50	94
5	Competition	2,94	44	91
6	Acquisition of raw materials	2,67	33	77
7	Transportation	3,33	42	70
8	Information and assistance	2,88	22	47
9	Government regulations	3,30	28	47
10	Finance	2,83	17	37
11	General management	3,29	19	33
12	Insurance	3,67	25	33
13	Other problems	2,80	14	31
14	Accounting	2,75	11	25
15	Size of the business	2,67	8	19
16	Obtaining new technology	4,75	11	3

^a Mean value of ranking for all participants regarding the problem area as one of the five most important

^b Percentage of all participants regarding the problem area as one of the five most important

^c $t = (5-x)n$, where 5 = maximum of rating scale

labour.

Of the six most important problem areas, only tax and economic climate can be regarded as external, since it cannot be directly influenced by businesses. This is in contrast with previous studies from abroad, which indicated that small business managers perceived external factors beyond the control of management (for example government regulations and economic conditions), as the most important cause of problems (Dandridge & Sewall, 1978; Hoy & Vaught, 1980; Franklin & Goodwin, 1983; Khan & Rocha, 1982; Torok, Schroeder & Menkhaus, 1991).

4.3 Relative importance of general problem areas for different business categories

In order to link problem areas with business characteristics, businesses were divided into three categories according to: location, type of business and turnover. In the first category there were two groups: businesses situated in Southern Free State (15 businesses) and businesses situated in Northern Free State (21 businesses). In the second category, three business types were distinguished: abattoirs (12 businesses), butcheries (11 businesses) and abattoir/butchery combinations (13 businesses). In the third category, businesses were divided into three groups: businesses with turnover less than R500 000 (15 businesses), between R500 000 and R2 million (12 businesses) and exceeding R2 million (nine businesses). Problem areas were ranked for each group as in Table 1.

Table 2 contains a summary of certain problem areas which seem to be perceived differently by various groups within a specific category.

Table 2 shows that *acquisition of raw materials* and *competition* cause more problems in the Southern than the Northern Free State. This is a function of the Southern Free State being primarily an extensive sheep grazing area with high density of participants relative to population and economic activity, as opposed to the more intensive mixed cropping area of the Northern Free State with its closer vicinity to markets.

Table 2: Influence of business characteristics on relative importance of problem areas

Problem area	Score ^a		
	Southern Free State (n=15)	Northern Free State (n=21)	
Location:			
Acquisition of raw materials	153	24	
Competition	140	57	
Type:	Abattoirs (n=12)	Butcheries (n=11)	Combinations (n=13)
Acquisition of raw materials	192	9	31
Economic climate	58	118	108
Labour	117	100	177
Turnover:	< R500 000 (n=15)	R500 000 - R2 million (n=12)	> R2 million (n=9)
Marketing	173	125	100
Competition	140	67	44
Acquisition of raw materials	60	50	144
Transportation	20	75	144

^a Calculated as in Table 1 (response is calculated as percentage of the category under question)

Abattoirs experience more problems with *acquisition of raw materials*, but less problems with *economic climate*, than other business types. This is according to prior expectations. Acquisition of slaughter animals and wholesaling of carcasses are primary marketing functions of abattoirs, whereas other business types engage largely in further processing of carcasses and retailing directly to final consumers. The current depressed economic conditions and high income elasticity of demand for red meat, together with the contemplation that price elasticity of demand increases as one moves from wholesale to retail markets (Khol and Uhl, 1990), explain the importance of economic climate to red meat retailing. Because of its more complex and diversified type of business activities, *labour* poses more problems to abattoir/butchery combinations than to sole abattoirs or butcheries.

Marketing and *competition* pose more difficulties to businesses with turnover less than R500 000, while larger businesses encounter relatively more problems with *acquisition of raw materials* and *transportation*. Since large businesses are often certain of markets for their products through standing contracts, they have greater relative difficulty to gather sufficient volumes of live animals to meet demands than their smaller counterparts. Also, larger businesses transport higher volumes of raw materials from suppliers and they transport products to markets over longer distances than smaller businesses.

4.4 Specific business problems

Participants were asked to rate specific problems as to whether they had no problem (assign a 1), a minor problem (2), a considerable problem (3), or a problem likely to put them out of business (4). With regard to the 16 general problem areas, specific business problems most frequently regarded as serious (assigned 3 or 4) were:

- **Marketing:** Increasing local sales, forecasting future demand for products, finding suitable distribution outlets, finding markets for products and pricing of products;

- Labour: High wages needed to attract qualified labour, employee substance abuse and inadequate local training facilities for employees;
- Tax: Value added tax and income tax;
- Economic climate: Poor national and local economic conditions;
- Competition: Competition is crowding business out of existing markets and causes an increase in prices of raw materials;
- Acquisition of raw materials: Seasonality of supplies, unreliable and small number of suppliers, supplies are too costly and difficulty obtaining sufficient supplies;
- Transportation: Transportation cost of products and raw materials are too high;
- Government regulations: Problems with communication (fax lines, mail), construction (plant siting and building) and business operations (health/safety, labour laws);
- Information and technical assistance: Difficulty in getting information and help on sales and merchandising, government regulations and starting a business;
- Finance: Interest rates are too high and debtors do not pay bills on time;
- General management: Managing own time and stress and inadequate management skills of supervisors;
- Insurance: Property and automobile insurance are too costly;
- Other problems: Losses due to power failure and theft;
- Accounting: None worth mentioning;
- Size of business: Facility is not operating at full capacity;
- New technology/equipment: Too costly.

The nine business problems to which scores of 3 or 4 were most frequently assigned, were all external factors. These problems were: too high value added tax, interest rates and property insurance, too costly new technology, problems with national economy, high income tax, costly automobile insurance, problems with local economy and regulations regarding communication. Apart from difficulties posed by the economy and government regulations, these problems all had to do with cost. It is evident that participants were under perceived financial pressure and did not see value adding to be a panacea to farmers' problems, as is sometimes advocated.

An issue which was not listed as a specific problem, but which emerged strongly during interviews, was that of informal slaughtering (so called 'bosslagtings'). General sentiment portrayed was that 'bosslagters' were not subject to levies, regulations or value added tax, enabling them to have a 'business edge' over formal businesses. Most participants viewed this as a very serious issue and a threat

to the continuation of their businesses. This aspect follows the same line of discussion as noted by Clinton and Weidenbaum (1982), who found that government regulations had disadvantaged small businesses relative to larger businesses in certain instances. The issue clearly demonstrates how laws and regulations cause welfare shifts between groups.

In performing contingency table analyses, three contingency tables were constructed for each specific problem: One for each business category of location, turnover and type of business. To determine whether there was any relationship between high interest rates and business location, for example, a contingency table was constructed to indicate how many participants in the Southern Free State had serious problems with high interest rates (assigned 3 or 4) versus those who did not (assigned 1 or 2). In the same table, these values were compared to corresponding values for the Northern Free State. The Chi-square statistic and corresponding probability level were calculated. For a probability level of less than 5 percent it was assumed that a statistically significant difference existed between the number of participants in the Southern Free State who experienced serious problems with high interest rates versus the number of participants in Northern Free State who experienced serious problems with high interest rates. Hence a relationship between location and interest rate was assumed to exist.

Results of contingency table analyses indicated that no statistical significant relationship existed between any one of the three business categories and specific problems with regard to general problem areas of government regulations, transportation, finance, accounting, new technology and size of business. Statistical significant relationships that were identified, underscored the findings of Section 4.2 (Berning, 1996 contains the details).

5. CONCLUSION

This paper identified and quantified problems experienced by red meat processors at farm level in the Free State. The fact that 72 percent of the businesses were established after 1991, average number of employees amounted to 11 and median turnover to R750 000, shows the impact of deregulation as well as the importance of businesses in terms of employment and economic activity. General problem areas of marketing, labour, tax, economic climate, competition acquisition of raw materials and transportation caused most critical and widespread problems. Although only two of these problem areas are considered to be external to businesses, the nine most important specific problems cited by participants, were all external, had largely to do with cost and related to problem areas such as tax, finance, insurance and economic climate. This result indicates that participants are under perceived financial pressure and had difficulty in countering increased cost with higher product prices. It is possible that managers tend to blame their problems on external forces (such as too high interest rates), because they are unaware of underlying causes for problems (such as excessive debt). External forces do however exert an influence on processors and this fact should be recognised by policy makers. There is also a plea from participants that regulations be consistently applied to all involved in the red meat industry. The study revealed that regarding the problems experienced, significant differences exist between different categories of businesses. Assistance

agencies should take note of these differences when designing and implementing assistance programs.

NOTES

1. For research purposes, there was differentiated between general problem areas (such as marketing) and specific problems (examples of specific problems in the general category of marketing are advertising and pricing decisions).
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