An analysis of opinions from veterinarians in South Africa regarding business management skills

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ABSTRACT

The changing role of veterinarians in the global market is a current topic of debate and discussion. Few countries including South Africa have formally examined the changing dynamics of this profession. Therefore, the present study addressed 2 objectives. The 1st was to examine basic information about veterinarians in South Africa including their age, gender and distribution across provinces, the percentage whose practice was urban, rural or periurban, the numbers working with specific animal species, and the extent of business management and skills previously gained. The 2nd objective was to obtain opinions and insights from veterinarians in South Africa about the challenges and opportunities facing their business practices to better understand what they considered important dynamics to their businesses today. Several areas of business on which they were questioned and which were included in this study were: marketing, vision, human resources, leadership, financial management, ethics, competition, day-to-day operations, interpersonal skills and information management. This is the 1st known survey to employ a questionnaire to gain insights and opinions from veterinarians about business management skills.

Key words: attitudes, business management, business skills, opinions, questionnaires, South Africa, veterinarians.

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INTRODUCTION

Interest in the current global market for veterinarians is a topic of continued debate and discussion^{5,17}. One statement refers: 'Significant societal problems, new driving forces, our economic viability, and technologic challenges have combined to create unprecedented opportunities and potential difficulties. Without question, our collective (veterinary) professional future is in flux and the fundamental ways of how we work⁵. This USA report identified 6 issues which could improve the economic health of the profession. These were: veterinarians' income, economic impact of large numbers of women in the profession, global demand for all categories of veterinary services, efficiency of the delivery system, supply of veterinarians, and skills, knowledge, aptitude as well as attitude of veterinarians and veterinary students.

In South Africa, there are no known studies in this domain, though attention has been given to the socioeconomic aspects of animal diseases^{6,16}, as well as the impact of the economic situation of animal owners in resource-poor areas. Numerous factors that influence traditional veterinary practice and contribute to the current changing environment of the veterinary profession¹⁵ include increased competition, increased pet owner knowledge, specialisation and changing demographics of new graduates^{3,17,21,22}.

The training competency and skills sets of South African veterinary graduates are in demand globally and therefore graduates are attracted to employment opportunities with foreign earning potential. In one issue of the Newsletter of the South African Veterinary Association (SAVA), 36 % (14 of 39) of the advertisements for positions available for veterinarians were outside South Africa³⁰. Factors influencing business in South Africa today which also affect the dynamics of the veterinary profession are economic measures, conflict between social and economic goals, pressure on all businesses from worldwide competition, and movement of skilled people¹⁷.

Currently there are 2400 veterinarians registered with the South African Veterinary Council (SAVC)¹³. Continuing Professional Development (CPD) has been proposed for registered veterinarians to maintain their registration with the South African Veterinary Council. However, no systematic survey has been conducted of veterinary, or any other medical or paramedical practitioners in South Africa to obtain their views and opinions on the challenges and opportunities facing their businesses.

Veterinarians are, amongst others, knowledge workers. Knowledge workers are defined as people who acquire formal education and have the ability to acquire knowledge by continuous learning. Knowledge is the competitive factor for the individual, organization and country and the 'shelf life' (or usefulness before further training is required) for any profession is considered to be 3 years? This supports the reality and need for veterinary practitioners to continuously learn in order to remain competitive in their market locally and globally.

The emergence of the Internet has been as far reaching as the invention of the internal combustion engine and its application in motorized transport²⁷. The Internet has changed everything including training. Since the drivers of the Internet activity and development are business and commercially oriented, they will shape and foreshadow developments in training. For example, can the capacity of the veterinarian be further developed by Web-enabled training? The current study was designed to gain insight into which areas of business management are considered most important to the target sample of practicing veterinarians.

Several courses teach business and management skills to medical, dental and paramedical professionals in South Africa but as far as could be ascertained by the authors, have not been developed with a prior study or survey of the end-user or business environment. There are no courses available for veterinary professionals.

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There were 2 objectives of the present study. The 1st was to examine basic information of veterinarians in South Africa, including their age, gender and distribution across provinces, the percentage whose practice was urban, rural or periurban, the numbers working with specific animal species and the extent of business management and skills previously gained. Confirming that this study group was representative of the profession was important to extrapolate the trends of this study to the whole of the profession in this country. The 2nd objective was to obtain opinions and insights from veterinarians in South Africa about the challenges and opportunities facing their business practices to better understand what they considered important dynamics to their businesses today.

MATERIALS AND METHODS

A multidisciplinary model of veterinary business practice was developed in the current study using the modules comprising the 2001/02 Gordon Institute of Business Science (GIBS) Master of Business Administration (MBA)¹². This model included ten components: marketing, vision, human resources, leadership, financial management, ethics, competition, operations, interpersonal skills and information management (Fig. 1). This model formed the framework of the questionnaire administered in the present study.

Access was granted to the database of the South African Veterinary Association's (SAVA) 1550 members²⁸. Sixty per cent of these members had email access. Therefore, because of the advantages (*e.g.* shortening time frame of receiving responses) these members were identified as the study group. Other advantages included: the cost-effectiveness of this mode, the quick access to members and potentially obtaining prompt replies from respondents and a larger sample size was possible than if individual interviews had been chosen.

A questionnaire of 44 questions using 5 types of questions was developed and included the Likert-style scale or rating question, the quantity question, the list question, the ranking question and the multiple answers question²⁵. The 1st part of the questionnaire with 11 questions was designed to obtain basic information used to determine that the study sample was representative of the overall veterinary profession in this country. The 2nd part consisted of 33 questions with an order and flow presented so as to be logical to the respondent and easy to read and complete.

The terminology chosen in the ques-

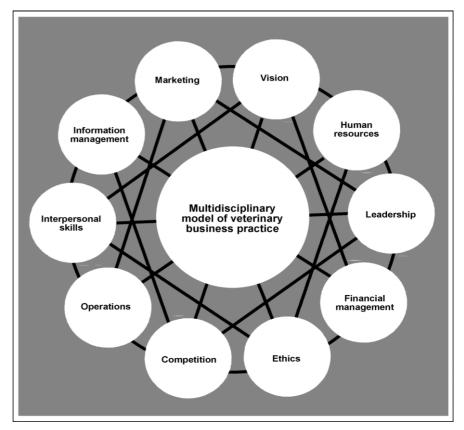


Fig. 1: Multidisciplinary business management model developed in the current study and used for the framework of the questionnaire.

tionnaire was selected for 'user friendliness' and 'business jargon' was avoided which may be unfamiliar to a veterinarian. For example, the word 'competition' was used, not 'competitive strategy', and 'interpersonal skills' was used rather than 'emotional quotient'.

A questionnaire and introductory letter was tested in a pilot study. This was done to confirm the clarity of the questions to the respondents as well as the instructions²⁵. Comments from those who took part in the pilot study were considered and appropriate changes were made. An introductory letter was e-mailed on 16 August 2002, just 2 weeks before the questionnaire was scheduled to be sent. The letter was designed: to establish a rapport with the potential respondent, introduce the 1st author and to explain the purpose and other relevant points about the study. This letter was basically a pre-survey contact²⁵.

Study groups

Of 1417 SAVA members (student members were removed from the original list), there were 849 with e-mail addresses. Representation from the 9 geographic provinces was unequal, therefore the provinces were used as strata in a stratified random sampling technique. To compensate for a possible low e-mail response rate of 10 % which was expected (SAVA, pers. comm., 2002) a larger sample

size of 397 was selected so if the response was low, at least 10 % would be obtained²⁵.

Data analysis

Eighty-three completed questionnaires were returned to the 1st author by e-mail, fax, post and courier within 2 weeks of being sent out. An additional 60 e-mails sent were withdrawn (e.g. the individuals were no longer in veterinary practice, were based outside South Africa or were retired.) Six questionnaires arrived after the deadline and were therefore not included in the analyses. This resulted in a total of 167 and when compared with the 397 that were sent out, the reply rate was 42.06 % (167/397). In summary, 83 questionnaires that were completed and returned were used in the analysis (20.91 % or 83/397).

The coding of the questionnaires facilitated transfer of the answers to spread sheets using Microsoft[©] Excel²⁰ and summary statistics using GenStat (2000)¹¹. Questions were cross-tabulated by response categories and gender to summarise the frequencies per category and bar charts were produced. Medians were calculated for the Likert-style scale questions²⁶. The median was calculated for each question to determine the measure of central tendency and was considered a more reliable estimator of central tendency than the mean for discrete data such as in this study¹⁰.

In addition to answering all 44 questions, additional comments and specific examples were solicited for 4 of these questions. These included: details about courses attended in business or management skills and emphasis of veterinary work in section 1. In section 2 these included an example of cultural diversity and a final opportunity for additional comments on any aspect of the questionnaire. More than 50 % of the respondents contributed to these specific 4 questions and a large number of individuals responded with additional information to other questions.

RESULTS

Veterinarians in the sample group were defined and analysed according to: the distribution of age, gender and distribution across provinces, the percentage whose practices were urban, rural or periurban, the numbers working with specific animal species, and the extent of business management or skills previously gained. The information obtained from the 1st 11 questions agreed with the information in the SAVA database and showed that the profile of the veterinarians who responded was representative of the profession as a whole.

Data was also collated from the opinions and replies that veterinarians gave in response to the remaining 33 questions. Ten categories were used and the relevant data are presented in Table 1: marketing; vision; human resources; leadership; financial management; ethics; competition; day-to-day operations; interpersonal skills; and information management.

When respondents were asked if they or their staff participated in any business or management skills training seminars or short courses, 43 % (36/83) indicated that they had attended some level. Ten per cent of these had sent their practice managers to some training. Approximately 17 % of the respondents had completed a formal qualification or certificate in business or management. The majority of responses indicated that they had attended a variety of seminars and courses offered by industry, where a majority had attended these during the previous 2 years.

Summaries of responses to questionnaires

Marketing and vision

This section probed the areas of marketing and promotion, vision and mission and business performance. These included 4 Likert-style rating questions and 1 multiple answer type question. The ques-

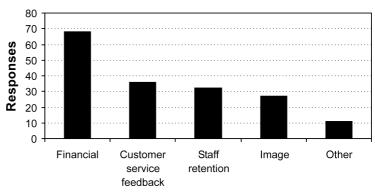


Fig. 2: Responses to the marketing question (Number 16) with multiple answers: 'I evaluate the performance of my business annually with one of more of the following measures (financial, customer service feedback, staff retention, image or other)'.

tions and percentages of responses to the Likert-style questions are in Table 1. There was 80-91 % full agreement and agreement to 3 of the 4 Likert-style questions (Questions 13-15). However, only 43 % were confident that they were marketing their veterinary practice adequately (Question 13). Figure 2 includes the replies to the multiple answer question (Question 16). The question was: 'I evaluate the performance of my business annually with one or more of the following measures(s)'. The largest percentage replied that the most important measure of business performance was first financial, and then followed by customer service feedback, staff retention and finally, image.

Human resources and leadership

This section included 8 Likert-style questions and the summaries of the replies are in Table 1. The range of responses for 7 of these that were in full agreement or in agreement to the statements was 66–90 %. In addition, Question 19 solicited a specific example related to cultural diversity. Forty-seven per cent agreed that 'cultural diversity impacts the optimal operation of my staff as a team' and 32 % disagreed (Fig. 3).

Financial management

There was 81–82 % agreement to both Likert-style questions in this section (Table 1).

Ethics

Question 27 was a ranking question with 9 possible responses and no text comment was solicited. The respondents were asked to consider the most important in order of 1 to 9. The first most important was given as '1' and the least important as '9'. Five respondents, however, volunteered text comments. Figure 4 illustrates the responses to this question.

Competition and day-to-day operations, interpersonal skills and information management

Six Likert-style rating questions were used for Competition and day-to-day operations, 4 for Interpersonal skills and 3 for Information Management. The percentages of replies are in Table 1. All were in agreement with percentages above 62 % except for 1 of the competition questions. There were 3 multiple answer questions for the Information Management section. The majority of individuals indicated that they need information to increase their knowledge; if given the choice to acquire new skills to improve their business practice they would do this through a 1-2 day course; and if appropriate courses were needed and available would attend themselves.

DISCUSSION

The opinions and attitudes of veterinarians concerning business practices and management in South Africa today are

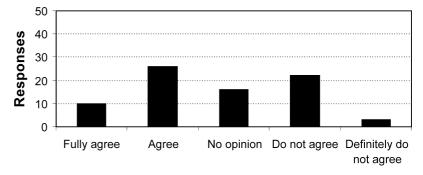


Fig. 3: Responses to statement (Number 19): 'Cultural diversity impacts the optimal operation of my staff as a team'.

Table 1: Questions and percentages of responses to Likert-style questions in study. This table does not include questions 1-11, 16, 27 and 41–44.

Number	Questions	Total agree (%)	No response (%)	Total non-agreement (%)
	Marketing and vision			
12	I am confident that I am marketing my veterinary practice adequately.	43.21	7.41	49.32
13	I can promote my business more.	91.25	5.00	3.75
14	I can promote myself more.	86.58	7.32	6.09
15	I have a vision for the future of my practice.	80.25	11.10	8.64
	Human resources and leadership			
17	The current employment laws in this country impact on employment relationships and I			
	welcome more information on this.	83.54	13.90	2.53
18	Health and safety management issues for those persons I am currently employing are of			
	concern to me.	89.61	9.09	1.29
19	Cultural diversity (e.g. race, gender, disability, etc.) impacts the optimal operation of my	40.75	00.00	00.47
	staff as a team.	46.75	20.80	32.47
20	All key members of my staff participate in making decisions.	78.20	7.69	14.10
21	Communication amongst my employees is open and uninhibited.	71.79	11.50	16.67
22	Every member of the team contributes significantly.	67.95	7.69	24.36
23	My leadership qualities are adequate to run my business.	66.67	12.80	20.51
24	I would like to assess my leadership qualities and improve effectiveness as a leader of my business.	78.21	12.80	8.97
	•	70.21	12.00	0.97
	Financial management			
25	I am running a financially viable practice.	82.05	7.69	10.26
26	I would like to be able to assess the financial performance and financial planning of my	80.77	10.30	8.97
	practice better.	80.77	10.30	6.97
	Competition and day-to-day operations			
28	I am offering services in my veterinary practice which I believe my customers want.	97.53	2.47	0
29	I am offering services in my veterinary practice that are unique and that my competitors	E4 0E	40.00	05.00
00	cannot provide.	51.85	12.30	35.80
30	The time scheduling of the day-to-day operations of my practice runs smoothly.	70.88	6.33	22.78
31 32	The time scheduling of the day-to-day operations of my practice could be improved.	62.03 81.01	12.70 2.53	25.32 16.46
33	The physical flow of the activities in my practice runs smoothly. The physical flow of the activities in my practice could be improved.	70.88	2.53 8.86	20.25
33		70.00	0.00	20.25
	Interpersonal skills			
34	I have the ability to adapt to situations.	97.56	2.44	0
35	I have the ability to communicate easily with staff in the practice.	83.54	5.06	11.39
36	I have the ability to communicate easily with clients in the practice.	91.36	6.17	2.47
37	I am comfortable with my interpersonal skills.	69.51	13.40	17.07
	Information management			
38	I can increase the use of information technology (IT) in my practice.	88.88	6.17	4.94
39	I use a computerised accounting system in my practice.	84.21	2.63	13.16
40	I would increase the use of the Internet to gain information that I need if it were available.	77.50	12.50	10.00

highlighted by this study. The aims to examine basic information of veterinary practitioners in South Africa and to use a questionnaire to obtain quantitative information from a stratified random sample of veterinary practitioners were achieved. This was the 1st known survey to employ a questionnaire to gain insights and opinions from veterinarians about business management skills.

Based on typical sampling methods the reply rate was high (42 %) though only 21 % chose to take part. This shows a reception and readiness of this profession to the topic of business management. The individuals invited to take part in the study were committed to returning the questionnaires despite computer obstacles and committed time schedules.

The multidisciplinary business management model for veterinary practice tested through the questionnaire was endorsed by the respondents as they did not add or delete disciplines or topics in their responses. This is significant since the questionnaire in the current study was developed from and based on a multidisciplinary model of veterinary business practice using the GIBS MBA structure.

Consideration of the methods

Various modes of implementing a questionnaire can be employed, each with its advantages and disadvantages. The e-mail option was chosen because of its potential of rapid and larger responses and lower cost as compared with other modes, such as posting or faxing^{7,14,19}. Response quality was also considered. This was high in the present study probably due to the pre-survey contact which was carefully orchestrated and executed. This reduced any possible sensitivity

for respondents (e.g. the 1st author having unauthorised access to their e-mail addresses).

Implications for the future

The opportunities and dynamic environment impacting this profession in South Africa and globally present both unprecedented opportunities as well as potential constraints to this profession. The implications for the future will be discussed as 7 categories and in the same sequence as they were presented in the questionnaire.

Marketing and vision

There is a demand for better marketing and promotion of veterinary practices in South Africa. Similar findings were reported in New Zealand during the period 1985 to 1994 when changes in attitudes of medical practitioners were

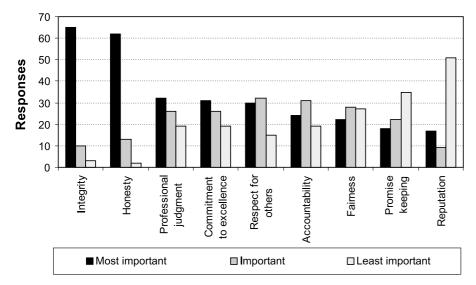


Fig. 4: Responses to question (Number 27) on ethical values.

studied2. The study showed an undramatic but steady movement towards acceptance of a competitive orientation and willingness for medical practitioners to advertise and promote themselves. A comparison of mean values using Likertstyle questions were used, as also in the present research project. A collection of data every 3–6 years provided a basis for meaningful comparisons and allowed trends to be considered. The current study did not use means, but rather medians, to assess the responses of each question. In the New Zealand study, statements relating to competition were compared and the trend was a move away from negative attitudes towards a competitive professional belief. The present study showed a 2.0 median or 'agree' to the statements that 'I am offering services in my veterinary practice which I believe my customers want' and 'I am offering services in my veterinary practice that are unique and that my competitors cannot provide'.

Human resources and leadership

Veterinarians in the current study indicated the desire for more information on the employment laws in this country and on health and safety management for those persons in their employ. Since many of the laws surrounding these issues are recent in South Africa¹⁷, it is not surprising these are not well understood by the employer and how they impact the dynamics of the veterinary workplace.

The replies received for the question on cultural diversity was one of the few where a spread of responses was received. This question stimulated a wide diversity of examples, ranging from the veterinarian whose kennel staff (who are predominantly black) share in the profits of the practice to those who stated that 'African culture has a negative impact on a first

world practice'. The contrasting views reflect attitudes in the environment of a fledgling democracy of South Africa. This current challenge is potentially an opportunity unique to South Africa and to the veterinary profession.

When the topic of leadership was considered, there was agreement that there was room for improvement in the effectiveness as a leader. There was also indication that a clearer understanding of 'leadership' as compared to a 'manager' was needed, as well as that between the concepts of 'leader' and 'leadership'.

Financial management

Women are rapidly becoming the majority in the profession. Seventy per cent of veterinary students in the USA were women and this study shows that a similar trend has taken place in South Africa⁵. There is some weak evidence that women may charge as much as 9 % less for their services than men on average in the USA study. The profession in South Africa would be wise to communicate with veterinarians in general, and women in particular, on the benefits of practice ownership and the importance of valuebased pricing. The USA study also stresses that it may be wise to encourage practice management skills more for women to elevate their sense of competency. In some of the skills they seem to feel they are less competent than men. These skills are business management, personnel management, financial skills and marketing. Twenty-five per cent of qualified veterinarians in South Africa are women and approximately 75 % are men. These gender balance issues which are topical in South Africa today should be of interest to the profession.

The veterinarian is urged to develop a marketing plan and consider the questions: who are your competitors, what strengths or weaknesses do they have and why should someone buy from you rather than your competition?¹⁸ This supports the views of the question 'what does the veterinarian perceive that he/she can do, what their customers want and what can they do that their competitors cannot do'³.

Ethics

It is of interest that 21 % of the respondents did not respond to this question. Also of note is that 5 individuals who offered comments stated that all of the 9 values were of equal importance.

Competition and day-to-day operations

To Question 29, which asked 'if the vet is offering unique services which the competition cannot provide', there was a split in responses between 'agree' and 'do not agree'.

Interpersonal skills

There was confidence from respondents that they had the ability to communicate with staff and with clients. A future study would benefit by comparing replies from veterinarians with replies from staff and clients to gain a total view of the veterinarian and the environment.

Information management

This study gives evidence that the interface of information technology and the veterinary profession is changing. First, 60 % of the SAVA members can be reached by e-mail, a trend which has evolved quickly during the past 2-3 years. Second, many respondents experienced difficulty in returning their questionnaire by e-mail. They overcame this by several tries, and also indicating that they would like to become more adept with this tool. Third, the trend in South Africa is that on-line applications (e.g. e-business and e-learning) are increasing and therefore, predictably the veterinary profession will move in step^{24,29}. This means that 1–2 day continuing education courses in veterinary related topics may be offered on the Web, thereby becoming attractive, particularly to those colleagues who are unable to take time away from a busy practice to attend a course if travelling a distance is

The information gained in the current study is useful in understanding what the current demand is for business and management courses. Clearly there is a market for this, as well as a demand for 1–2-day continuing education courses. Sixty per cent of respondents indicated that if they chose to acquire new skills to improve their business practice they would do so through a 1–2-day course,

while 30 % would do so through a course offered via the Internet with Web enablement. More than 80 % of the respondents have engaged in some type of training by taking part in informal, short courses (half or 1 day). The replies to the current questionnaire showed that a very low number of individuals have completed the MBA degree and therefore the market is clearly for shorter informal training. The demand for the MBA by professionals with busy practices for extensive training is limited. The MBA Health Care programme at the University of the Free State in South Africa is not enrolling new students currently because of a lack of interest. Individuals interested in this programme are being referred to an alternative on-line degree course⁴.

Veterinarians to build on current strengths

There is competition for veterinarians. Pharmacies, supermarkets and agricultural cooperatives promote and sell products such as antiparasitic remedies (which are used to remove ticks and worms from animals) and other animal health products. One proponent strongly recommends that veterinarians should simply build on traditional strengths¹. His advice is to give 'positively outrageous service' and believes this is the most powerful marketing tool of the veterinarian.

Recommendations and areas of future research

Recommendations are directed to various groups of stakeholders. These include veterinarians, industry partners, trainers and governmental and non-governmental organisations (NGOs).

Veterinarians have clearly indicated that they are ready to gain further business and management skills either at 1–2-day courses or to a lesser extent from on-line offerings. With CPD as a current requirement for veterinarians, they are potential consumers of such courses. As such they are in a position to determine consumer demand and to specify with what they wish to be supplied.

Offering 1–2-day training courses to veterinarians in central locations in South Africa is the 1st opportunity for trainers to provide the skills to this market. The accessibility, the ease of use and availability of the technology needed for Web enablement will continue to increase. Not only is the demand apparent in South Africa, but there may be a potential market elsewhere in Africa. Development of these courses for the national market and for the subregion could also be extended to the overseas market. No such

training is currently available globally. This is a clear opportunity for development based in this country.

Industry is another major stakeholder in the veterinary profession and able to contribute their business experience, possible resources and expertise to this venture. Such partnerships add potentially to the sustainability and competitive advantage of such an activity. Additional organisations such as government (local, provincial and central) and NGOs would also be engaged to contribute.

The respondents of the present study also highlighted their views about cultural diversity and leadership. South Africa is a heterogeneous country which is enriched by its diversity of people. This provides a vibrant and fertile 'business-scape' in which to explore relationships. The veterinary profession, particularly, is challenged and rewarded daily with the interface of the 'first world and the third world'²³.

It would be useful to compare the findings of the present study with another investigation in the future. This would provide a retrospective comparison of changes in attitudes and perspectives in South Africa that have taken place locally, regionally and globally.

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REFERENCES

- 1. Becker M 1996 Changing the way we practice: how to thrive and not just survive in veterinary medicine. Seminars in Veterinary Medicine and Surgery (Small Animal) 11: 12–22
- Bell J D, Fay M T 1997 A longitudinal study of the attitudes of the medical profession towards competition and advertising. New Zealand Medical Journal 110: 410–412
- 3. Binedell N 2002 Competitive strategy. Student notes for the Master of Business Administration (MBA), Gordon Institute of Business Science, University of Pretoria
- Boshoff I 2002 Looking for information, (e-mail to the author) (online)
- Brown J P, Silverman J D 1999 The current and future market for veterinarians and veterinary medical services in the United States. Journal of the American Veterinary Medical Association 215: 161–183

- Cornelius S T, McCrindle C M E, Krecek R C 1995 Socio-economics in relation to veterinary science in South Africa. *Journal of the* South African Veterinary Association 66: 130– 133
- Dickson J P, Maclachlan D L 1996 Fax surveys: return patterns and comparison with mail surveys. *Journal of Marketing Research* 33: 108–130
- 8. Drucker P 1994 The age of social transformation. *Atlantic Monthly*, November 1994
- 9. Friedman T L 2000 *The lexus and the olive tree*. Anchor Books, New York
- 10. Garrity P 2000 The Fast Forward MBA in Business Math. John Wiley, New York
- 11. GenStat for Windows 2000, Release 4.2 (5th edn). VSN International, Oxford
- 12. Gordon Institute of Business Science 2001 Master of Business Administration (MBA) Curriculum, University of Pretoria
- 13. Havinga, L. 2002 Unpublished letter: Request for some information for MBA study
- 14. Helgeson J G 1994 Receiving and responding to a mail survey: a phenomenological examination. *Journal of the Market Research Society* 36: 339–347
- 15. Jevring C 1996 Managing a veterinary practice. W B Saunders, London
- 16. Krecek R C, Cornelius S T, McCrindle C M E 1995 Socio-economic aspects of animal diseases in southern Africa: research priorities in veterinary science. *Journal of the South African Veterinary Association* 66: 115–120
- 17. Lee R 2002 Macroenvironment of business. Student notes for the Master of Business Administration (MBA), Gordon Institute of Business Science, University of Pretoria
- 18. McCurnin D M 1996 Competing with the Super Stores. Seminars in Veterinary Medicine and Surgery (Small Animal) 11: 3–7
- 19. Mehta R, Sivadas E 1995 Comparing response rates and response content in mail versus electronic mail surveys. *Journal of the Market Research Society* 37: 429–439
- Market Research Society 37: 429–439
 20. Microsoft Windows^{№®} Professional, 2002
 Microsoft Excel[®], Microsoft Corporation,
 Redmond, WA
- 21. Odendaal J S J 1994 Biographical profile of practising veterinarians in South Africa. *Journal of the South African Veterinary Association* 65: 101–103
- Odendaal J S J 1996 Meaningful relationships in veterinary practice. Journal of the South African Veterinary Association 67: 137– 140
- 23. People's Television Programme 1996 Community Development Programme at the Faculty of Veterinary Science, Onderstepoort
- 24. Raider R 2002 The 21st century classroom. Packet Cisco Systems Users Magazine, Third Quarter, 76–80
- 25. Saunders M, Lewis P, Thornhill A 2000 Research methods for business students (2nd edn). Pearson Education, Harlow, UK
- 26. Siegel S 1956 Non-parametric statistics for the behavioural sciences. McGraw-Hill, New York
- 27. Sloman M 2001 *The e-learning revolution*. Chartered Institute of Personnel and Development, London
- 28. South African Veterinary Association Database 2002 Information on members
- 29. Tobin P 2001 Information and knowledge management. Student notes for the Master of Business Administration (MBA), Gordon Institute of Business Science, University of Pretoria
- 30. *Vet News/Nuus* 2002 Newsletter of the South African Veterinary Association, October