

The profitability of occupations and fields of study pursued by graduates in 1981

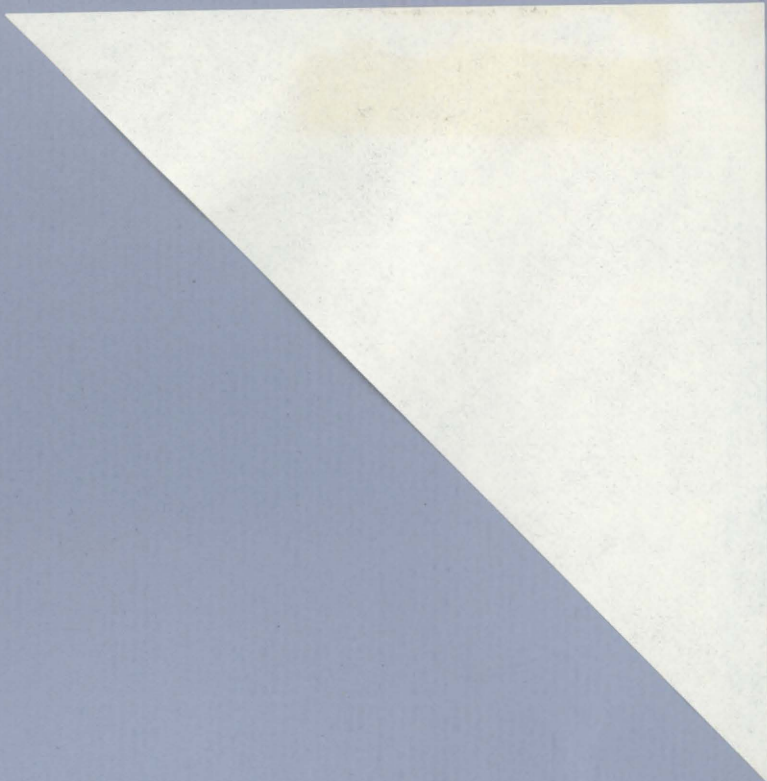
A. Goosen



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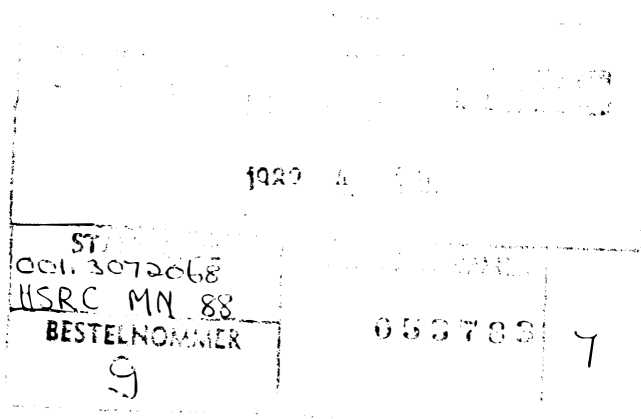


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The profitability of occupations and fields of study pursued by graduates in 1981

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THE PROFITABILITY OF OCCUPATIONS AND FIELDS OF STUDY PURSUED BY GRADUATES IN 1981

BACKGROUND AND AIM

Wages, the price paid for labour, are determined by the interaction between supply and demand, the competition between buyers and sellers and finally, by the cost of reproducing the labour force (Woytinsky 1953 : 3).

Labour differs however from the ordinary goods and services that can be bought, sold and priced. The difference is caused by the fact that the worker and his labour cannot be separated and all matters related to the rendering of his labour are of fundamental importance to the worker. An employer does not buy an objectively measurable quantity of energy, but an unknown quantity of labour which cannot be separated from the worker as a person. The labour market, therefore, differs essentially from commodity markets (Boshoff 1971 : 10).

In the so-called perfect market, prices will depend only on supply and demand, but the labour market is anything but perfect and the price of labour, the wage, is therefore not only determined by supply and demand. In addition to insufficient knowledge, which prevents competition, there are other factors affecting the free movement of wages in the supply and demand situation, such as trade union actions, wage agreements, manipulation of the supply, and agreements between employers, for example between the various education departments.

Despite the shortcomings in the market, the determination of relative wage levels in the different industries, occupations and regions is reasonably good (Reynolds 1965 : 17).

Although by no means perfect, the various wage levels that can be linked to occupations and fields of study are an indication of the relative demand for certain occupations and fields of study.

In this study various occupations and fields of study are compared with regard to profitability to determine for which occupation or field of study the highest price is paid. The studies are regularly repeated since prices are not static and the supply and demand situation changes.

This investigation is the sixth in the series and is based on the 1981 wage survey. The profitability study involves White men only. Women normally do not have an uninterrupted professional career, but interrupt their careers to get married or have children. Non-Whites are not included in the studies because their numbers in most occupational groups are too small for analysis.

The specific aim of this study is to determine the profitability of occupations and fields of study practised by White male graduates as at 1 March 1981, and to compare the findings with those of previous investigations in order to indicate the change in the relative profitability of occupations and fields of study over a given period.

The profitability for employees and self-employed persons is calculated separately, because the income of self-employed persons is not directly comparable with that of employees as it includes an entrepreneur's remuneration and a risk premium.

2 SURVEY GROUP, QUESTIONNAIRE AND REPRESENTATIVENESS

2.1 SURVEY GROUP AND QUESTIONNAIRE

It is estimated that there are approximately 138 000 White male graduates in the RSA and SWA. The names and addresses of these persons are not available and the National Register of Natural and Social Scientists was therefore used to identify the survey group.

The National Register of the HSRC contains information on a sample of approximately 60 % of the graduates or persons with equivalent qualifications. Recorded in the Register are data such as the names, addresses, sex, age and qualifications of graduates.

The names and addresses of 86 032 White men living in the RSA and SWA were drawn from the National Register and a questionnaire was posted to each of them in March 1981. This group will be referred to as the National Register group. Of these 86 032 persons 38 306 (44,5 %) completed and returned questionnaires (the respondent group). The questionnaires provided information on the respondent's occupation, employer sector, income, fringe benefits, working hours, working weeks and the economic sectors

of employers. The information was requested as at 1 March 1981. Information on age, language, qualification and place of residence was obtained from the National Register.

The occupations and fields of study of which the profitability is determined in this investigation, were obtained from the respondent group on the basis of reasonably determinable cost and wage structures. In the case of fields of study the profitability of self-employed persons was not determined as the respondent group was too small.

The respondents' anonymity was protected throughout as no names or addresses were linked to the questionnaires. It will be noticed that the analyses in this report are presented in such a way that the anonymity of individuals is safeguarded.

2.2 REPRESENTATIVENESS

In 1970 the National Register was a representative sample of the graduate population of the country (Ebersohn 1972 : 13) and there is no reason to assume that it was no longer representative in 1981 since information on new graduates and immigrants is annually added to the register and information on deceased persons and emigrants removed.

The question is now whether the respondent group is a representative sample of the National Register group. The age distribution, level of qualification obtained and language distribution of the two groups are therefore compared in Tables 2.1 to 2.3

The percentual deviations between the National Register group and the respondent group with regard to the aspects that are compared, are relatively small and insignificant. It can therefore be assumed that the respondent group is a representative sample of the National Register group and probably also of the graduate population of the country.

3 EXPLANATORY REMARKS

The following explanatory remarks are necessary for the interpretation of the analyses.

TABLE 2.1
AGE DISTRIBUTION OF THE NATIONAL REGISTER AND THE RESPONDENT GROUP

Age	National Register group		Respondent group	
	N	%	N	%
20 - 24	2 698	3,1	1 086	2,8
25 - 29	13 810	16,1	5 987	15,6
30 - 34	13 637	15,9	5 933	15,5
35 - 39	12 087	14,1	5 403	14,1
40 - 44	9 934	11,6	4 587	12,0
45 - 49	7 585	8,8	3 558	9,3
50 - 54	6 926	8,1	3 217	8,4
55 - 59	6 314	7,3	2 925	7,6
60 - 64	4 799	5,6	2 160	5,6
65 +	8 242	9,6	3 450	9,0
TOTAL	86 032	100	38 306	100

TABLE 2.2
HIGHEST LEVEL OF QUALIFICATION OF THE NATIONAL REGISTER AND THE RESPONDENT GROUP

Highest level of qualification level obtained	National Register group		Respondent group	
	N	%	N	%
Diploma equivalent to B. degree	9 619	11,2	4 391	11,5
B. degree	41 806	48,6	18 312	47,8
Postgraduate diploma	6 922	8,1	2 808	7,3
B. Hons. degree	13 712	15,9	6 097	15,9
M. degree	9 455	10,0	4 530	11,8
D. degree	4 518	5,3	2 168	5,7
TOTAL	86 032	100	38 306	100

TABLE 2.3
LANGUAGE DISTRIBUTION OF THE NATIONAL REGISTER AND THE RESPONDENT GROUP

Language	National Register group		Respondent group	
	N	%	N	%
Afrikaans	42 147	49,0	19 104	49,9
English	43 885	51,0	19 202	50,1
TOTAL	86 032	100	38 306	100

3.1 GRADUATES

The report is concerned with occupations that are mainly practised by graduates. As some of the occupations can also be successfully practised by persons who are not graduates, a group of diplomaed persons was involved in the investigation. Persons with diplomas such as the Diploma in Architecture, Diploma Procurationis, Diploma in Pharmacy, the final qualifying certificate of the Public Accountants' and Auditors' Board (FQC) and persons registered as Professional Engineers (Pr. Eng.) were included in the investigation. Diplomaed teachers were not included and where reference is made in this report to teachers, graduate teachers are meant.

3.2 INCOME

Income in this report refers to the total income (excluding fringe benefits and prior to taxation) received as a result of the direct pursuit of the occupation and which was derived from the following sources:

(a) Basic income

(for employees, basic income refers to the gross salary received, including pensionable allowances; in the case of self-employed persons, income includes the net income from the occupation as well as salaried income from related work done after hours);

(b) director's fees obtained as a result of the pursuit of the occupation that was indicated;

(c) income earned through overtime, lecturing in a part-time capacity and consultation, and

(d) bonuses received, for example profit-sharing, trade, production and cash bonuses (such as service, holiday or Christmas bonuses).

Data are given as at 1 March 1981. It is known that employees in the public sector received a salary increase of approximately 12 % on 1 April 1981, while the increases in the private sector are not known. The increases granted after 1 March 1981 are not taken into consideration in this report.

Total income excludes the value of fringe benefits.

3.3 SELECTION OF OCCUPATIONS AND FIELDS OF STUDY

In the calculation of the rank order of profitability only certain occupations and fields of study were selected. The report deals first of all only with occupations and fields of study practised by graduates since only data on graduates are available (see Paragraph 2.1).

Secondly, the method of calculation of the rank order of profitability requires the availability of the income structures and a large enough respondent group for every occupation and field of study to ensure a reasonable distribution of respondents in the age categories 20 to 64 years. Thirdly, the cost of study should be reasonably determinable.

3.4 OCCUPATION

The occupational titles indicated by the respondents were used for the occupational classification. This means that a lecturer or manager with a qualification in engineering was grouped with lecturers or managers and not with engineers. Groupings however had to be done in some cases to obtain large enough groups for analyses.

In the following cases groupings were essential and occupations required special elucidation:

Accountant, auditor (registered/chartered/FQC): These are persons who have the final qualifying certificate (FQC) of the Accountants' and Auditors' Board or who indicated that they are registered or chartered accountants. Persons who have the FQC with occupational titles such as company secretary or accountant secretary are not included in this occupational group. An abbreviation is used when referring to this group in the tables and figures, namely accountant, auditor (r/c/FQC).

Accountant, auditor (not registered/not chartered): Persons who do not have the final qualifying certificate and who indicated this occupational title are classified in this group. An abbreviation is used in the tables and figures, namely accountant, auditor (n.r./n.c./not FQC).

Biological scientist: This group includes various occupations such as entomologist, biologist, biochemist and ecologist.

Computer scientist: This group includes occupations such as programmer, system analyst and computer scientist.

Medical specialist: This group refers to the occupations practised by persons in all the different fields in which specialization is possible.

Civil engineer, mechanical engineer and electrical engineer: This group excludes nongraduate engineers other than those registered with SACPE as Professional Engineers. Qualified engineers who indicated other occupational titles (such as factory manager) are excluded.

3.5 FIELD OF STUDY

Two groups are distinguished in the analysis of field of study: First, persons with a Baccalaureus degree as their highest qualification, and secondly, persons with an honours or higher degree.

Three fields are distinguished in the first group, namely:

B.A. degree: This includes a pure B.A., B.A. African Studies, B.A. Communication Science, B. Literature and B.A. African Studies and Development. Degrees such as B.A. Social Science and B.A. Law were not included.

B.Com. degree: The degrees ordinary B.Com., B.Com. Marketing, B.Com. Administration, B.Com Economics, B.Com. Management and Administration, B.Com. Accountancy, B.Com. Personnel Management, B.Com. Transport and B.Com. Communication are classified in this group.

B.Sc. degree: Degrees such as ordinary B.Sc., B.Sc. Meteorology, B.Sc. Computing Science and B.Sc. Computer Science are classified under this heading. Degrees in the applied natural sciences such as B.Sc. Eng. and B.Sc. Q.S. are not included.

The second group comprises classified persons with an honours, master's

or doctor's degree in various fields of study. In some cases groupings had to be done to obtain large enough groups for analyses. In the following cases groupings were essential:

Psychology: This group includes industrial psychology, personnel management and psychology.

Agriculture: This group includes agricultural economics and agricultural information.

Mathematics: This group includes mathematics, applied mathematics and mathematical statistics.

Persons with more than one qualification of the same level (e.g. two B. degrees or two honours degrees) or with a diploma or certificate in any field of study, are not included in the groups. Persons with, for instance, a teacher's diploma and a B. degree or an honours degree in any one of the various fields of study were not included, as the diploma will probably affect the order of profitability of the particular field of study.

3.6 SELF-EMPLOYED PERSONS

This sector refers to persons with their own businesses, practices or undertakings and includes

- (a) partners in professional concerns and/or
- (b) managing directors owning more than 50 % of a company's shares.

3.7 EMPLOYEES

These are persons employed by the government or provincial administrations, local authorities, semi-government, government-controlled and government-aided organizations, for example universities, the SAR and H, HSRC and CSIR. It also includes employees employed by public corporations, for example ISCOR, SASOL, ESCOM and ARMSCOR, as well as private firms, organizations, concerns, et cetera.

4 INCOME 1981

The median value (Me) is used to indicate the income of the occupations and fields of study. The median indicates the point where 50 % of a group receive less and 50 % receive more than the income indicated. For purposes of analyzing income, the median value is regarded as a better index than the arithmetic mean as it is not sensitive to extremely high or extremely low income values. The income of four or fewer persons in a specific category is not shown in the tables in order to safeguard the anonymity of persons.

The median incomes by age, occupation and field of study are shown in Tables 4.1 to 4.4.

5 METHOD OF CALCULATION OF PROFITABILITY

The cash-value method is used in this report to determine the profitability of occupations and fields of study.

When a person completes his schooling he usually chooses between joining the labour market and studying further. If he decides on further study, his study costs and the income he could have earned (forfeited income) can be regarded as his investment and his income after completion of his study as his return on that investment.

In the cash-value method the total investment as well as the total income during his working life is discounted to a cash value at the beginning of his working life.

For the purposes of this study it is assumed that a person matriculates at 17 years of age, completes his two years' military training after school and can start his occupational life at 20. It is also assumed that the person will practise the same occupation uninterruptedly until he retires at the age of 64 years. With regard to field of study it is assumed that the person does not obtain qualifications in other fields before he retires at 64.

TABLE 4.1
 MEDIAN INCOME (R.P.A.) IN 1981 OF EMPLOYEES BY OCCUPATION AND AGE

Occupation	Age										Total
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64		
Accountant (n.r./n.c./ not FQC)	N	29	272	161	100	42	22	24	23	3	681
	Me	9 500	13 200	17 000	18 000	18 410	19 250	19 670	20 000	20 110	15 930
Accountant (r/c/FQC)	N	6	111	80	45	45	41	36	19	19	402
	Me	13 800	17 900	23 180	25 000	25 340	24 830	27 550	21 600	22 500	22 000
Agricultural extension officer	N	2	22	10	18	24	9	13	5	1	104
	Me	-	9 400	13 990	12 930	15 360	15 600	17 970	18 980	-	14 550
Agricultural researcher	N	9	34	22	23	17	16	6	7	-	134
	Me	7 980	10 000	12 510	14 880	16 110	15 360	16 000	17 620	-	12 530
Architect	N	1	40	46	21	18	20	24	32	22	224
	Me	-	13 100	16 170	18 850	22 720	19 750	20 250	21 000	19 410	18 330
Archivist, librarian	N	4	15	17	14	15	14	7	3	2	91
	Me	-	7 640	10 580	11 560	18 100	18 230	16 540	-	-	12 410
Attorney, lawyer	N	3	69	29	15	5	4	7	4	8	144
	Me	-	11 050	13 200	16 130	20 690	-	26 000	-	14 870	12 000
Biological scientist	N	9	67	78	76	36	28	13	13	10	330
	Me	6 500	9 100	12 470	15 320	16 030	17 330	19 700	18 420	18 930	13 430
Chaplain, clergyman, minister	N	7	121	185	153	141	133	102	92	48	982
	Me	4 800	8 010	8 970	11 000	12 900	14 040	14 250	14 000	14 230	11 450
Chemist	N	5	30	26	36	35	20	18	15	9	194
	Me	10 190	11 690	14 610	18 730	19 600	20 750	19 050	26 000	18 000	18 490
Civil engineer	N	25	417	402	161	151	108	97	110	73	1 544
	Me	9 580	13 410	18 270	21 150	23 940	23 360	24 000	23 530	23 080	18 980
Computer scientist	N	16	93	57	40	19	8	6	1	3	243
	Me	8 710	13 750	16 250	18 620	19 700	23 830	20 780	-	-	15 900
Dentist	N	3	25	7	-	4	8	10	7	5	69
	Me	-	18 500	26 000	-	-	29 740	26 100	20 410	24 930	22 000
Economic adviser	N	2	17	37	31	11	11	9	7	2	127
	Me	-	16 670	23 000	25 600	22 000	28 400	28 770	24 200	-	23 920
Economist	N	5	18	21	24	19	10	17	5	1	120
	Me	10 800	12 620	15 700	19 970	24 300	24 020	26 000	26 000	-	18 510
Electrical engineer	N	31	197	163	97	64	33	60	68	38	751
	Me	12 290	15 860	20 540	22 100	24 700	23 400	24 050	23 430	21 830	20 450
General medical practitioner	N	1	239	193	68	32	22	47	80	63	745
	Me	-	18 550	21 480	26 000	25 800	29 450	30 200	28 910	26 400	22 100
Geologist	N	5	76	48	35	27	23	9	9	3	235
	Me	11 050	13 000	16 580	20 350	22 860	25 300	26 000	20 150	-	17 300
Insurance agent, broker	N	1	14	15	14	8	3	5	3	1	64
	Me	-	17 500	20 000	23 210	30 000	-	40 000	-	-	23 060
Land surveyor	N	3	27	10	4	4	9	17	17	8	99
	Me	-	13 220	15 570	-	-	19 680	24 000	22 640	19 340	18 000
Legal adviser	N	2	22	20	16	13	5	12	5	1	96
	Me	-	11 800	17 300	20 760	25 860	24 000	26 050	26 000	-	19 500
Lecturer	N	29	228	414	353	536	375	309	253	156	2 835
	Me	6 510	11 770	15 600	18 400	19 340	20 150	22 500	22 200	22 500	18 530
Mechanical engineer	N	19	95	114	67	44	30	31	44	25	469
	Me	10 790	15 000	21 230	23 000	24 210	26 450	27 000	25 850	24 230	21 770
Medical specialist (all fields)	N	-	3	25	33	27	14	9	35	20	166
	Me	-	-	28 000	29 200	30 000	31 390	30 200	31 250	29 400	29 400
Metallurgist	N	13	31	15	22	6	3	6	1	3	100
	Me	6 440	8 240	11 040	14 260	15 070	-	25 380	-	-	10 360

TABLE 4.1 (CONTINUED)

Occupation		Age									Total
		20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	
Pharmacist	N	1	32	42	25	35	33	30	33	28	259
	Me	-	12 010	14 200	16 100	16 300	16 960	15 880	16 900	14 570	15 600
Physicist	N	6	10	10	12	18	10	10	-	-	76
	Me	8 000	10 640	15 460	17 120	20 000	19 960	23 060	-	-	18 810
Quantity surveyor	N	6	103	64	28	25	18	10	18	6	278
	Me	12 140	15 000	17 630	18 850	20 990	23 600	21 490	22 380	21 360	17 700
Teacher	N	70	428	329	378	328	203	130	123	66	2 055
	Me	7 000	8 550	11 540	13 350	13 550	13 230	13 350	13 350	13 350	11 920
Town and regional planner	N	2	41	35	22	3	8	8	7	3	129
	Me	-	11 540	16 000	17 850	-	20 490	22 710	22 000	-	16 120
Veterinarian	N	3	25	18	15	15	6	7	5	8	102
	Me	-	12 440	16 160	19 660	19 700	20 100	21 290	20 390	20 000	18 230

TABLE 4.2
MEDIAN INCOME (R.P.A.) IN 1981 OF SELF-EMPLOYED PERSONS BY OCCUPATION AND AGE

Occupation		Age									Total
		20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	
Accountant (r/c/FQC)	N	1	45	198	238	185	151	105	101	63	1 087
	Me	-	21 000	26 500	30 000	34 000	38 000	34 500	31 000	35 000	30 000
Advocate	N	-	12	25	17	21	15	10	10	8	118
	Me	-	15 140	26 000	40 000	36 000	40 000	45 000	44 000	16 000	33 640
Architect	N	-	5	31	36	66	68	69	55	45	375
	Me	-	17 200	21 500	24 000	30 000	28 000	29 000	27 000	24 000	26 000
Attorney, lawyer	N	-	47	217	201	155	136	129	86	65	1 036
	Me	-	18 000	25 000	34 000	36 000	35 000	32 000	30 000	30 000	30 000
Civil engineer	N	1	10	29	45	75	52	52	41	17	322
	Me	-	25 830	30 000	31 870	35 000	32 000	35 500	35 000	30 000	33 650
Dentist	N	-	28	48	28	29	51	40	29	23	276
	Me	-	26 000	30 000	28 000	24 000	30 000	24 400	28 000	24 000	26 000
Farmer	N	11	110	106	126	96	65	52	51	48	665
	Me	9 000	10 480	20 000	20 000	20 000	23 000	21 000	25 000	20 000	19 200
General medical practitioner	N	-	20	118	122	101	75	97	129	84	746
	Me	-	29 500	33 170	34 000	30 000	34 000	34 000	30 000	25 250	31 060
Land surveyor	N	-	5	11	5	11	17	28	13	13	103
	Me	-	20 000	23 400	20 000	21 000	22 000	20 000	20 000	21 150	20 000
Medical specialist (all fields)	N	-	-	13	59	61	64	75	67	45	384
	Me	-	-	42 900	45 000	46 500	47 000	40 000	40 000	33 850	42 000
Pharmacist	N	-	23	97	97	74	86	72	52	17	518
	Me	-	22 000	24 000	21 790	24 000	24 500	24 000	20 000	20 050	24 000
Quantity surveyor	N	-	10	56	36	36	45	27	27	19	256
	Me	-	17 700	25 000	28 500	24 000	30 000	32 500	30 000	35 000	26 200
Veterinarian	N	-	16	28	41	15	7	8	2	3	120
	Me	-	19 500	20 000	30 000	25 000	25 000	30 200	-	-	25 000

TABLE 4.3
 MEDIAN INCOME (R.P.A.) IN 1981 OF EMPLOYEES WITH A B. DEGREE AS HIGHEST QUALIFICATION BY FIELD OF STUDY AND AGE

Field of study	Age										
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	Total	
B.A. degree	N	77	251	199	176	128	83	79	52	26	1 071
	Me	6 390	9 000	13 000	14 510	18 690	18 270	19 500	16 230	16 080	13 350
B.Com. degree	N	175	580	296	272	149	94	111	94	42	1 813
	Me	7 470	11 410	17 280	19 330	20 960	21 850	24 000	21 530	20 620	16 000
B.Sc. degree	N	82	188	156	156	102	72	60	47	19	882
	Me	6 960	11 700	15 500	18 790	19 590	20 350	24 050	25 480	18 270	16 820

TABLE 4.4
 MEDIAN INCOME (R.P.A.) IN 1981 OF EMPLOYEES WITH A B.HONS. OR HIGHER DEGREE BY FIELD OF STUDY AND AGE

Field of study	Age										
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	Total	
Accounting	N	7	45	24	13	14	6	5	2	2	118
	Me	9 520	18 000	23 600	22 000	24 340	21 560	23 000	-	-	21 200
Afrikaans	N	-	11	16	8	13	6	9	7	6	76
	Me	-	9 750	13 110	15 940	18 180	19 580	18 000	19 340	19 900	15 460
Agriculture	N	-	69	79	110	102	79	53	39	13	544
	Me	-	12 400	13 980	15 600	16 840	18 530	18 980	19 590	23 130	16 350
Botany	N	1	17	20	22	18	8	6	7	2	101
	Me	-	8 270	12 120	15 620	16 040	18 950	18 270	18 980	-	15 160
Business economics	N	-	20	33	28	13	6	8	3	-	111
	Me	-	12 800	16 350	19 430	22 890	23 190	26 380	-	-	17 420
Chemistry	N	3	32	37	49	54	30	20	20	14	259
	Me	-	12 240	16 350	18 940	21 130	21 560	23 960	28 050	23 250	19 500
Economics	N	2	27	24	25	22	7	7	6	3	123
	Me	-	11 500	17 870	19 400	22 530	28 580	26 000	24 100	-	19 280
English	N	1	7	16	14	10	14	4	6	3	75
	Me	-	9 150	13 240	15 130	17 440	20 530	-	18 290	-	16 090
Geography	N	3	20	26	12	31	18	9	6	6	131
	Me	-	8 890	12 360	14 340	16 650	18 430	18 000	18 210	16 100	14 600
History	N	-	23	28	30	33	20	20	13	13	180
	Me	-	9 220	12 900	16 000	16 940	16 040	15 950	18 420	16 800	15 130
Mathematics	N	6	25	40	31	23	14	10	9	6	164
	Me	7 160	11 860	13 970	19 930	20 000	23 300	22 300	24 610	23 990	18 300
Physics	N	4	19	25	30	34	14	13	7	6	152
	Me	-	11 860	17 000	18 430	21 150	23 330	23 000	25 030	25 490	19 690
Psychology	N	4	71	65	56	25	17	15	9	3	265
	Me	-	11 700	15 000	18 890	20 150	19 370	22 200	18 430	-	16 780
Sociology	N	-	11	10	17	12	11	10	10	4	85
	Me	-	10 450	13 940	16 800	15 720	18 530	23 130	14 790	-	16 120
Zoology	N	1	23	39	33	23	9	9	8	4	149
	Me	-	7 670	12 030	15 750	18 000	17 950	21 980	19 140	-	14 000

The following formula is used to calculate the cash-value of the income a person can earn during his working life:

$$I = \sum_{t=20}^{64} \frac{I_t - K_t}{(1 + \frac{r}{100})^{t-20}}$$

where

- I = the cash-value at the expected income flow during working life (20 to 64 years),
- t = age: 20, 21, ... 64,
- I_t = expected positive income in year t,
- K_t = expected negative income in year t (study cost and forfeited income) and
- r = the chosen rate of interest.

It appears from the formula that the value of I decreases as r increases. One of the main disadvantages of the cash-value method is that the relative profitability of occupations and fields of study varies at different rates of interest. In the report the cash values for the expected income flows of the various occupations and fields of study are calculated for a number of rates of interest.

6 EDUCATION COSTS

Cost of training consists of two components, namely study costs and forfeited income. The two components are subsequently discussed separately.

6.1 STUDY COSTS

Study costs are one of the two components of the total investment a person has to make if he decides on further study.

The period of training determines study costs. The period of study

and study costs for the various occupations and fields of study are given in Tables 6.1 to 6.4. The period of study and study costs of the various occupations and fields of study were based on the prescribed periods and study fees of the University of Pretoria as they applied in 1981. The exceptions in this regard are pharmacology, which is not offered by this university, and quantity surveying. In the case of pharmacology the period of training and study costs prescribed by the Potchefstroom University are taken as an example. The regulations of the University of the Witwatersrand are used in the case of quantity surveying since the University offers the course on a full-time basis at a B. degree level.

The period of study refers to the minimum prescribed duration laid down by university regulations. The minimum training period is not necessarily the mean period it takes people to obtain a specific qualification, but as the mean period is not always known, the minimum period of study is taken as a basis for comparison. It has also been assumed that the respondents studied full-time at least until they obtained a B. degree or an honours degree, except where it was otherwise decided after consultation with the specific professional society. In the case of doctors it has been assumed that their study as medical specialists started at the earliest possible opportunity.

The study costs for persons with a B. Hons. and higher degree are taken into account only up to the B.Hons. level as persons in this group do have a B. Hons degree but not necessarily a master's or doctor's degree. The study costs for M. and D. degrees are ignored because

(a) most of the persons in this group have an honours degree as highest qualification and

(b) M. and D. degrees are usually obtained while students are already working and study costs would therefore have a relatively small affect on positive income.

6.2 FORFEITED INCOME

After obtaining a matriculation certificate a person normally has

TABLE 6.1
DURATION OF TRAINING BY OCCUPATION

Occupation	Years full-time study	Years part-time study and practical training	Years practical training	Total
Accountant (n.r./n.c./not FQC)	3			3
Accountant (r/c/FQC)	3	3		6
Advocate	5			5
Agricultural extension officer	4			4
Agricultural researcher	4			4
Architect	5		2	7
Archivist, librarian	4			4
Attorney, lawyer	4		2	6
Biological scientist	4			4
Chaplain, clergyman, minister	7			7
Chemist	4			4
Civil engineer	4			4
Computer scientist	4			4
Dentist	5½			5½
Economic adviser	4			4
Economist	4			4
Electrical engineer	4			4
Farmer	4			4
General medical practitioner	6		1	7
Geologist	4			4
Insurance agent, broker	3			3
Land surveyor	4		1	5
Legal adviser	3			3
Lecturer	5			5
Mechanical engineer	4			4
Medical specialist	6	4 to 5	2	12
Metallurgist	4			4
Pharmacist	4		1	5
Physicist	4			4
Quantity surveyor	4		3	7
Teacher	4			4
Town and regional planner	4			4
Veterinarian	5½			5½

TABLE 6.2

DURATION OF TRAINING BY FIELD OF STUDY

Field of study	Minimum years of full-time study
B.A. degree	3
B.Com. degree	3
B.Sc. degree	3
B.Hons. or higher degree in:	
Accounting	4
Afrikaans	4
Agriculture	5
Botany	4
Business economics	4
Chemistry	4
Economics	4
English	4
Geography	4
History	4
Mathematics	4
Physics	4
Psychology	4
Sociology	4
Zoology	4

TABLE 6.3

TUITION FEES (R.P.A.) BY OCCUPATION AND STUDENT'S AGE

OCCUPATION	STUDENT'S AGE											
	20	21	22	23	24	25	26	28	29	30	31	
ACCOUNTANT(N.R./N.C./NOT FCC)	630	630	630									
ACCOUNTANT(R/C/FCC)	630	630	630	680	30	105						
ADVOCATE	710	710	710	710	710							
AGRICULTURAL EXTENSION OFFICER	740	840	840	840								
AGRICULTURAL RESEARCHER	740	840	840	840								
ARCHITECT	740	740	740	740	740							
ARCHIVIST, LIBRARIAN	630	630	630	630								
ATTORNEY, LAWYER	710	710	710	710		40						
BIOLOGICAL SCIENTIST	740	740	740	610								
CHAPLAIN, CLERGYMAN, MINISTER	630	630	630	660	660	660	660					
CHEMIST	740	740	740	610								
CIVIL ENGINEER	830	830	830	830								
COMPUTER SCIENTIST	740	740	740	610								
DENTIST	740	1060	1060	1060	1060	600						
ECONOMIC ADVISER	630	630	630	530								
ECONOMIST	630	630	630	530								
ELECTRICAL ENGINEER	830	830	830	830								
FARMER	740	840	840	840								
GENERAL MEDICAL PRACTITIONER	740	1060	1060	1060	1060	1060						
GEOLOGIST	830	830	830	830								
INSURANCE AGENT, BROKER	630	630	630									
LAND SURVEYOR	830	830	830	830								
LECTURER	630	630	630	530	630							
LEGAL ADVISER	710	710	710									
MECHANICAL ENGINEER	830	830	830	830								
MEDICAL SPECIALIST	740	1060	1060	1060	1060	1060		480	480	30	30	
METALLURGIST	740	740	740	610								
PHARMACIST	520	500	500	500								
PHYSICIST	740	740	740	610								
QUANTITY SURVEYOR	1030	1020	1020	1020								
TEACHER	630	630	630	630								
TOWN AND REGIONAL PLANNER	830	830	830	830								
VETERINARIAN	770	1110	1110	1110	1110	600						

TABLE 6.4

TUITION FEES (R.P.A.) BY FIELD OF STUDY AND STUDENT'S AGE

FIELD OF STUDY	STUDENT'S AGE				
	20	21	22	23	24
B.A. DEGREE	630	630	630		
B.COM. DEGREE	630	630	630		
B.SC. DEGREE	740	740	740		
B.HONS. OR HIGHER DEGREE IN:					
ACCOUNTING	630	630	630	680	
AFRIKAANS	630	630	630	530	
AGRICULTURE	740	840	840	840	610
BOTANY	740	740	740	610	
BUSINESS ECONOMICS	630	630	630	530	
CHEMISTRY	740	740	740	610	
ECONOMICS	630	630	630	530	
ENGLISH	630	630	630	530	
GEOGRAPHY	740	740	740	610	
HISTORY	630	630	630	530	
MATHEMATICS	740	740	740	540	
PHYSICS	740	740	740	610	
PSYCHOLOGY	630	630	630	530	
SOCIOLOGY	630	630	630	530	
ZOOLOGY	740	740	740	610	

to choose between studying further and joining the labour force.

If a person decides to study further he forfeits a certain income which he could have earned if he had started working immediately. Forfeited income during full-time study is the second component of the total investment if a person decides on further study.

For the purposes of this report it is assumed that such a person could have accepted a clerical or administrative post in the public sector. Forfeited income is therefore determined on the basis of the salary scales in the public sector that applied on 1 March 1981 for matriculated White men who have completed their military training.

Annual increases were taken into consideration in the calculation of forfeited income. In cases where persons must have postgraduate qualifications to qualify for a specific occupation or field of study, for example an advocate, forfeited income was determined on the basis of the income a person with a B. degree qualification and who has completed military training, could have earned in the public sector.

The calculated forfeited income for the specific occupations and fields of study is shown in Tables 6.5 and 6.6.

TABLE 6.5

FORFEITED INCOME (R.P.A.) DURING FULL-TIME STUDY BY OCCUPATION AND STUDENT'S AGE

OCCUPATION	STUDENT'S AGE						
	20	21	22	23	24	25	26
ACCOUNTANT(N.R./N.C./NCT FCC)	4170	4620	4845				
ACCOUNTANT(R/C/FQC)	4170	4620	4845				
ADVOCATE	4170	4620	4845	5295	5745		
AGRICULTURAL EXTENSION OFFICER	4170	4620	4845	5070			
AGRICULTURAL RESEARCHER	4170	4620	4845	5070			
ARCHITECT	4170	4620	4845	5070	5295		
ARCHIVIST, LIBRARIAN	4170	4620	4845	5070			
ATTORNEY, LAWYER	4170	4620	4845	5070			
BIOLOGICAL SCIENTIST	4170	4620	4845	5295			
CHAPLAIN, CLERGYMAN, MINISTER	4170	4620	4845	5295	5745	5970	6420
CHEMIST	4170	4620	4845	5295			
CIVIL ENGINEER	4170	4620	4845	5070			
COMPUTER SCIENTIST	4170	4620	4845	5295			
DENTIST	4170	4620	4845	5070	5295	2760	
ECONOMIC ADVISER	4170	4620	4845	5295			
ECONOMIST	4170	4620	4845	5295			
ELECTRICAL ENGINEER	4170	4620	4845	5070			
FARMER	4170	4620	4845	5070			
GENERAL MEDICAL PRACTITIONER	4170	4620	4845	5070	5295	5520	
GEOLOGIST	4170	4620	4845	5070			
INSURANCE AGENT, BROKER	4170	4620	4845				
LAND SURVEYOR	4170	4620	4845	5070			
LECTURER	4170	4620	4845	5295	5745		
LEGAL ADVISER	4170	4620	4845				
MECHANICAL ENGINEER	4170	4620	4845	5070			
MEDICAL SPECIALIST	4170	4620	4845	5070	5295	5520	
METALLURGIST	4170	4620	4845	5295			
PHARMACIST	4170	4620	4845	5070			
PHYSICIST	4170	4620	4845	5295			
QUANTITY SURVEYOR	4170	4620	4845	5070			
TEACHER	4170	4620	4845	5295			
TOWN AND REGIONAL PLANNER	4170	4620	4845	5070			
VETERINARIAN	4170	4620	4845	5070	5295	2760	

TABLE 6.6

FORFEITED INCOME (R.P.A.) DURING FULL-TIME STUDY
BY FIELD OF STUDY AND STUDENT'S AGE

FIELD OF STUDY	STUDENT'S AGE				
	20	21	22	23	24
B.A. DEGREE	4170	4620	4845		
B.COM. DEGREE	4170	4620	4845		
B.SC. DEGREE	4170	4620	4845		
B.HONS. OR HIGHER DEGREE IN:					
ACCOUNTING	4170	4620	4845	5295	
AFRIKAANS	4170	4620	4845	5295	
AGRICULTURE	4170	4620	4845	5070	5295
BOTANY	4170	4620	4845	5295	
BUSINESS ECONOMICS	4170	4620	4845	5295	
CHEMISTRY	4170	4620	4845	5295	
ECONOMICS	4170	4620	4845	5295	
ENGLISH	4170	4620	4845	5295	
GEOGRAPHY	4170	4620	4845	5295	
HISTORY	4170	4620	4845	5295	
MATHEMATICS	4170	4620	4845	5295	
PHYSICS	4170	4620	4845	5295	
PSYCHOLOGY	4170	4620	4845	5295	
SOCIOLOGY	4170	4620	4845	5295	
ZOOLOGY	4170	4620	4845	5295	

7 INCOME DURING PRACTICAL TRAINING

In certain occupations a period of practical training has to be followed after the completion of formal studies. The prospective occupational practitioners receive a certain income during this period. This income was determined with the aid of the 1981 wage survey, for example accountant, auditor's clerk, attorneys's clerk, et cetera. In the case of doctors and medical specialists the income was based on the salary scales for interns and clinical assistants in provincial hospitals in the Transvaal.

The income during practical training is shown in Table 7.1. Income derived from sources such as bursaries, prizes, awards, et cetera are not taken into account since such an income differs from person to person.

TABLE 7.1

INCOME DURING PRACTICAL TRAINING BY OCCUPATION AND STUDENT'S AGE

OCCUPATION	STUDENT'S AGE								
	23	24	25	26	27	28	29	30	31
ACCOUNTANT (R/C/FQC)	7450	7800	8450						
ARCHITECT			11440	12210					
ATTORNEY, LAWYER		3960	4380						
GENERAL MEDICAL PRACTITIONER				6200					
LAND SURVEYOR		9900							
MEDICAL SPECIALIST				6200	11550	12000	12450	12900	13560
PHARMACIST		10470							
QUANTITY SURVEYOR		11300	12140	14300					

8 INCOME FLOW

8.1 INCOME FLOW BEFORE DEDUCTION OF INCOME TAX

The income for every occupation and field of study for every year of the working life from 20 to 64 years is calculated by fitting a second degree polynomial to the observed income values as shown in Tables 4.1 to 4.4 by the usual least squares method. Education costs and income during practical training are also taken into account (Tables 6.3 to 6.6 and 7.1).

In the case of some occupations and fields of study where income values in the last one or two age categories in Tables 4.1 to 4.4 were not available, the last income value of the specific occupation or field of study indicated, was used in the empty cells. In cases where the calculated income (income flow) for the first few years was lower than the income of persons working in the public sector, and an observed income value in the first age category (Tables 4.1 to 4.4) was not available, the salary scales in the public sector for graduates were used.

The second degree polynomial is used because it best describes the normal income age distribution for data obtained at a point in time. Incomes usually show a rise until approximately the age of 45 to 50 years, followed by a decline.

The calculated income flows of the occupations and fields of study are shown in Tables 8.1 to 8.4.

8.2 INCOME FLOW AFTER DEDUCTION OF INCOME TAX

Because of the progressive nature of the income tax scales in the RSA, income tax is an important factor in the calculation of the profitability of occupations and fields of study.

For the sake of uniformity the following assumptions are made: The man is considered to be the only breadwinner of the family, he marries when he is 26, his first child is born when he is 28 and the second when he is 30 years old. For tax rebate purposes every child is considered to be dependent until he is 23 years of age.

TABLE 8.1

CALCULATED INCOME F.L.C. (R.P.A.) BEFORE DEDUCTION OF INCOME TAX OF EMPLOYEES BY OCCUPATION AND AGE

AGE	Agriculture, Forestry, Fishing, and Hunting			Agriculture			Agriculture, Forestry, and Fishing			Agriculture, Forestry, and Fishing			Agriculture, Forestry, and Fishing			Agriculture, Forestry, and Fishing			Agriculture, Forestry, and Fishing			Agriculture, Forestry, and Fishing			Agriculture, Forestry, and Fishing			Agriculture, Forestry, and Fishing		
	Agriculture, Forestry, and Hunting	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	Agriculture, Forestry, and Fishing	
20	-4800	-4800	-4910	-4910	-4910	-4800	-4800	-4910	-4800	-4910	-5000	-4910	-4510	-4800	-4800	-5000	-4910													
21	-5250	-5250	-5460	-5460	-5360	-5250	-5330	-5360	-5250	-5360	-5450	-5360	-5680	-5250	-5250	-5450	-5360													
22	-5475	-5475	-5685	-5685	-5585	-5475	-5555	-5585	-5475	-5585	-5675	-5585	-5905	-5475	-5475	-5675	-5585													
23	10750	6770	-5910	-5910	-5810	-5700	-5780	-5905	-5905	-5905	-5900	-5905	-6130	-5825	-5825	-5900	-6130													
24	11352	7770	8862	8811	-6035	5970	3960	7325	-6405	10256	10946	10357	-6355	14340	10829	13651	-6355													
25	11575	8345	9273	9281	11440	6420	4340	7995	-6630	10974	11897	11173	5678	15316	11664	14495	-6630													
26	12538	17281	9676	9738	12210	7080	6664	8645	-7080	11669	12813	11959	18989	16254	12475	15306	-7080													
27	13680	18110	10071	10181	12947	7520	8041	9275	7154	12340	13695	12715	19857	17152	13263	16082	7154													
28	13603	18498	10459	10611	13653	7740	9357	9885	7662	12986	14542	13441	20681	18012	14028	16824	7662													
29	14107	19645	10840	11027	14325	8317	10613	10476	8114	13608	15354	14137	21461	18832	14770	17532	8114													
30	14590	20352	11212	11431	14573	9086	11808	11047	8551	14206	16132	14804	22195	19614	15488	18206	8551													
31	15053	21019	11578	11820	15587	9821	12943	11598	8971	14780	16875	15440	22886	20356	16184	18846	8971													
32	15497	21645	11935	12197	16170	10524	14017	12125	9376	15329	17583	16047	23531	21060	16857	19451	9376													
33	15521	22231	12285	12560	16722	11193	15030	12841	9765	15854	18256	16624	24133	21725	17506	20023	9765													
34	16325	22776	12628	12910	17243	11825	15983	13132	10138	16356	18895	17171	24689	22350	18133	20560	10138													
35	16709	23281	12963	13246	17733	12432	16876	13604	10496	16833	19500	17689	25201	22937	18736	21064	10496													
36	17073	23745	13290	13569	18192	13002	17707	14057	10837	17286	20069	18176	25669	23485	19316	21533	10837													
37	17418	24169	13610	13879	18621	13535	18475	14489	11163	17714	20604	18634	26092	23994	19874	21968	11163													
38	17742	24553	13923	14175	19018	14042	19165	14902	11473	18119	21104	19062	26470	24464	20408	22370	11473													
39	18047	24896	14227	14458	19385	14513	19385	15295	11767	18499	21570	19460	26804	24895	20919	22737	11767													
40	18332	25199	14525	14728	19720	14950	20429	15668	12046	18855	22000	19828	27054	25287	21407	23065	12046													
41	18597	25462	14814	14984	20025	15355	20958	16021	12308	19187	22397	20167	27338	25640	21871	23368	12308													
42	18842	25684	15046	15227	20299	15726	21426	16355	12555	19495	22758	20475	27539	25954	22313	23633	12555													
43	19068	25865	15371	15457	20542	16064	21834	16669	12786	19778	23085	20754	27694	26229	22732	23864	12786													
44	19273	26006	15638	15673	20754	16369	22181	16962	13001	20038	23377	21003	27805	26465	23127	24060	13001													
45	19459	26107	15897	15876	20935	16640	22468	17237	13201	20273	23634	21222	27872	26662	23500	24223	13201													
46	19625	26167	16149	16066	21085	16879	22694	17491	13384	20484	23857	21412	27854	26820	23849	24351	13384													
47	19771	26187	16393	16242	21204	17084	22855	17726	13552	20671	24045	21571	27872	26939	24175	24445	13552													
48	19897	26167	16630	16405	21292	17257	22964	17941	13704	20833	24198	21701	27805	27020	24479	24505	13704													
49	20004	26106	16859	16554	21350	17396	23008	18136	13840	20972	24317	21801	27693	27061	24759	24531	13840													
50	20090	26004	17081	16690	21376	17502	22592	18312	13960	21086	24401	21871	27537	27063	25016	24523	13960													
51	20157	25863	17295	16813	21372	17575	22915	18468	14065	21176	24450	21921	27336	27027	25250	24481	14065													
52	20204	25680	17502	16922	21337	17615	22778	18603	14154	21242	24465	21921	27051	26951	25460	24405	14154													
53	20231	25458	17701	17019	21270	17622	22560	18720	14226	21284	24445	21902	26801	26836	25648	24295	14226													
54	20238	25145	17892	17101	21173	17595	22321	18816	14284	21302	24390	21853	26467	26683	25813	24150	14284													
55	20226	24891	18076	17171	21045	17536	22002	18893	14325	21295	24301	21774	26088	26490	25954	23972	14325													
56	20153	24547	18252	17227	20886	17443	21623	18949	14350	21264	24177	21665	25665	26259	26073	23759	14350													
57	20141	24163	18421	17269	20696	17317	21182	18986	14360	21209	24018	21526	25197	25989	26168	23512	14360													
58	20069	23738	18582	17299	20476	17158	20662	19004	14354	21130	23824	21357	24684	25679	26240	23231	14354													
59	19577	23273	18736	17315	20224	16966	20120	19001	14332	21027	23596	21159	24127	25331	26290	22916	14332													
60	19865	22768	18882	17317	19941	16741	19498	18979	14295	20899	23334	20931	23525	24944	26316	22567	14295													
61	19733	22222	19020	17306	19628	16483	18816	18937	14241	20748	23036	20673	22879	24517	26319	22184	14241													
62	19582	21635	19151	17282	19283	16191	18073	18875	14172	20572	22704	20385	22188	24052	26299	21767	14172													
63	19411	21008	19275	17245	18908	15866	17269	18794	14087	20372	22337	20067	21453	23548	26255	21316	14087													
64	19219	20341	19390	17194	18502	15509	16405	18692	13986	20147	21935	19720	20673	23005	26189	20830	13986													

TABLE 8.1 (CONTINUED)

CALCULATED INCOME FLOW (R.P.A.) BEFORE DEDUCTION OF INCOME TAX OF EMPLOYEES BY OCCUPATION AND AGE

A G E	G E O L O G I S T	I N S U R A N C E			L E G A L	M E C H A N I C A L	M E D I C A L	M E T	P H A R M A C I S T	P H Y S I C I S T	C U A N T I T Y	A N D		V E T E R I N A R I A N
		A G E N T , B R O K E R	L A N D S U R V E Y O R	L E G A L A D V I S E R								L E C T U R E R	E N G I N E E R	
20	-5000	-4800	-5000	-4880	-4800	-5000	-4910	-4910	-4690	-4910	-5200	-4800	-5000	-4940
21	-5450	-5250	-5450	-5330	-5250	-5450	-5680	-5360	-5120	-5360	-5640	-5250	-5450	-5730
22	-5675	-5475	-5675	-5555	-5475	-5675	-5905	-5585	-5345	-5585	-5865	-5475	-5675	-5955
23	-5900	10368	-5900	7129	-5825	-5900	-6130	-5905	-5570	-5905	-6090	-5925	-5900	-6180
24	10913	11581	9900	8341	-6375	12350	-6355	6446	10470	8922	11300	7737	5400	-6405
25	11909	12773	10736	9513	9406	13380	-6580	7067	10582	9670	12140	8191	10176	2247
26	12866	13943	11542	10647	10212	14372	6200	7683	11476	10398	14300	8628	10528	11943
27	13783	15091	12318	11741	10993	15325	11550	8295	11948	11106	14766	5048	11656	12644
28	14659	16217	13064	12797	11748	16239	11520	8902	12399	11794	15335	9451	12360	13319
29	15495	17321	13780	13813	12477	17115	11970	9505	12828	12461	15882	9836	13040	13965
30	16292	18403	14466	14791	13181	17953	12870	10103	13236	13109	16407	10204	13696	14584
31	17048	19463	15122	15729	13858	18752	13530	10697	13623	13736	16910	10555	14328	15175
32	17763	20502	15748	16629	14510	19513	27699	11286	13988	14343	17391	10889	14935	15738
33	18439	21518	16344	17490	15137	20235	28034	11870	14331	14930	17850	11206	15519	16273
34	19075	22512	16911	18311	15737	20919	28350	12450	14653	15496	18287	11505	16078	16781
35	19670	23485	17447	19094	16312	21564	28648	13026	14954	16043	18702	11787	16613	17261
36	20225	24435	17954	19838	16862	22171	28928	13597	15233	16569	19094	12052	17124	17713
37	20741	25364	18430	20543	17385	22739	29189	14164	15490	17075	19465	12300	17611	18138
38	21216	26270	18877	21209	17883	23265	29432	14725	15726	17561	19813	12530	18074	18535
39	21651	27155	19294	21835	18355	23761	29657	15283	15941	18027	20140	12743	18513	18904
40	22045	28018	19681	22423	18802	24214	29864	15836	16134	18473	20444	12939	18927	19246
41	22400	28858	20038	22972	19222	24628	30052	16384	16305	18898	20727	13118	19318	19559
42	22714	29677	20365	23482	19617	25004	30222	16928	16455	19303	20967	13279	19684	19845
43	22989	30474	20662	23953	19987	25342	30374	17467	16584	19688	21226	13424	20026	20104
44	23223	31249	20929	24385	20330	25641	30508	18002	16691	20053	21442	13551	20345	20334
45	23417	32002	21166	24778	20648	25902	30624	18533	16777	20398	21636	13661	20635	20537
46	23571	32733	21374	25133	20941	26124	30721	19058	16841	20723	21808	13754	20908	20712
47	23685	33442	21551	25448	21207	26308	30800	19579	16883	21027	21958	13829	21154	20859
48	23758	34130	21699	25724	21448	26454	30860	20096	16904	21312	22086	13887	21376	20979
49	23792	34795	21816	25961	21663	26561	30903	20608	16904	21576	22192	13928	21574	21071
50	23785	35438	21904	26159	21852	26629	30927	21116	16882	21820	22276	13952	21747	21135
51	23739	36059	21962	26319	22016	26659	30933	21619	16835	22044	22338	13955	21896	21172
52	23652	36659	21990	26439	22154	26651	30921	22118	16774	22247	22378	13948	22022	21180
53	23525	37236	21988	26520	22266	26604	30890	22612	16688	22431	22395	13920	22123	21161
54	23357	37792	21956	26563	22353	26518	30842	23101	16580	22594	22391	13875	22200	21115
55	23150	38326	21894	26566	22414	26394	30775	23586	16450	22737	22365	13813	22253	21040
56	22903	38837	21802	26531	22449	26232	30689	24067	16300	22860	22316	13733	22281	20938
57	22615	39327	21680	26456	22459	26031	30586	24543	16127	22963	22246	13636	22286	20808
58	22287	39795	21529	26342	22442	25792	30464	25014	15933	23045	22153	13523	22267	20651
59	21920	40241	21347	26190	22400	25515	30324	25481	15718	23108	22039	13391	22223	20465
60	21512	40665	21136	25999	22333	25199	30166	25944	15481	23150	21902	13243	22155	20252
61	21063	41067	20894	25768	22239	24844	29989	26401	15223	23172	21743	13077	22064	20011
62	20575	41447	20623	25499	22120	24451	29794	26855	14943	23174	21563	12895	21948	19743
63	20047	41805	20322	25191	21976	24019	29581	27304	14642	23156	21360	12694	21808	19447
64	19478	42141	19991	24843	21805	23550	29350	27748	14319	23117	21135	12477	21643	19123

TAELE 8.2

CALCULATED INCOME FLOW (R.P.A.) BEFORE DEDUCTION OF INCOME TAX OF SELF-EMPLOYED PERSONS BY OCCUPATION AND AGE

A G E	A C C U N T A N T I R / C /			A T T O R N E Y / L A W Y E R	C I V I L E N G I N E E R	G E N T I S T	F A R M E R	G E N E R A L P R A C T I T I O N E R	L A N D S U R V E Y O R	M E D I C A L S P E C I A L I S T	P H A R M A C I S T	C U A N T I T Y S U R V E Y O R	V E T E R I N A R I A N
	J /	C /	C /										
20	-4800	-4880	-4910	-4880	-5000	-4910	-4910	-4910	-5000	-4910	-4690	-5200	-4940
21	-5250	-5330	-5360	-5330	-5450	-5680	-5460	-5680	-5450	-5680	-5120	-5640	-5730
22	-5475	-5555	-5585	-5555	-5675	-5905	-5685	-5905	-5675	-5905	-5345	-5865	-5955
23	6770	-6005	-5810	-5780	-5900	-6130	-5910	-6130	-5900	-6130	-5570	-6090	-6180
24	7770	-6455	-6035	3960	22800	-6355	9982	-6355	9900	-6355	10470	11300	-6405
25	8345	5970	11440	4340	23742	10112	10912	-6580	21095	-6580	21149	12140	5720
26	19318	8581	12210	16524	24644	27053	11807	6200	21109	6200	21471	14300	18762
27	20563	11912	16167	18194	25508	27153	12668	29462	21122	11550	21774	15469	19350
28	21758	15078	17311	19787	26334	27245	13494	30010	21132	11520	22056	20102	19922
29	22904	18078	18402	21303	27120	27327	14286	30520	21141	11970	22320	20722	20478
30	24000	20914	19439	22741	27868	27400	15043	30994	21148	12870	22563	21327	21019
31	25047	23584	20423	24103	28577	27464	15766	31431	21154	13530	22786	21519	21545
32	26044	26088	21353	25387	29248	27519	16454	31830	21158	42754	22990	22497	22055
33	26991	28428	22230	26594	25879	27565	17108	32193	21160	43353	23174	23061	22550
34	27890	30602	23054	27724	30473	27601	17727	32519	21161	43891	23338	23611	23029
35	28738	32611	23824	28777	31027	27629	18311	32808	21159	44368	23483	24147	23452
36	29537	34455	24541	29753	31542	27647	18862	33060	21157	44785	23608	24669	23941
37	30287	36133	25204	30651	32019	27656	19377	33275	21152	45141	23712	25178	24373
38	30987	37646	25814	31473	32457	27656	19858	33453	21146	45437	23798	25672	24791
39	31637	38994	26371	32217	32857	27647	20305	33594	21138	45671	23863	26153	25192
40	32238	40177	26875	32884	33218	27629	20717	33698	21128	45845	23909	26620	25579
41	32790	41194	27325	33474	33540	27601	21095	33765	21117	45958	23934	27073	25950
42	33291	42047	27721	33987	33823	27565	21438	33795	21104	46011	23940	27512	26305
43	33744	42734	28064	34423	34068	27519	21746	33789	21089	46003	23927	27938	26645
44	34147	43255	28354	34781	34273	27464	22020	33745	21073	45934	23893	28349	26969
45	34500	43612	28591	35063	34441	27400	22260	33664	21055	45804	23840	28747	27278
46	34804	43803	28774	35267	34569	27327	22465	33547	21035	45614	23767	29131	27572
47	35058	43825	28503	35394	34659	27245	22635	33392	21013	45363	23674	29501	27850
48	35263	43690	28980	35444	34710	27153	22771	33201	20990	45051	23562	29857	28112
49	35418	43385	29003	35417	34722	27053	22873	32973	20965	44678	23429	30199	28359
50	35524	42916	28972	35313	34696	26943	22939	32707	20939	44245	23277	30527	28591
51	35580	42281	28888	35131	34631	26824	22972	32405	20911	43751	23105	30842	28807
52	35587	41480	28751	34873	34527	26696	22970	32066	20881	43197	22914	31142	29007
53	35544	40515	28561	34537	34384	26559	22933	31690	20849	42581	22702	31429	29192
54	35451	39384	28317	34124	34203	26413	22862	31277	20816	41905	22471	31702	29362
55	35310	38088	28019	33634	33983	26257	22756	30827	20781	41168	22220	31561	29516
56	35118	36627	27668	33067	33724	26093	22616	30340	20744	40371	21949	32206	29655
57	34877	35000	27264	32423	33427	25915	22442	29816	20706	39513	21659	32438	29778
58	34587	33209	26807	31701	33091	25736	22232	29255	20666	38594	21348	32655	29886
59	34247	31252	26296	30903	32716	25544	21989	28657	20624	37614	21018	32859	29978
60	33857	29129	25732	30027	32302	25343	21711	28023	20581	36574	20669	33049	30055
61	33418	26842	25114	29074	31850	25133	21398	27351	20535	35473	20299	33225	30116
62	32930	24344	24443	28044	31359	24913	21051	26642	20489	34311	19910	33387	30162
63	32391	21771	23715	25937	30829	24685	20669	25857	20440	33088	19500	33535	30192
64	31804	18988	22941	25753	30261	24447	20253	25114	20390	31805	19072	33669	30207

TABLE 8.3

CALCULATED INCOME FLOW (R.P.A) BEFORE DEDUCTION OF
INCOME TAX OF EMPLOYEES WITH A B.DEGREE AS HIGHEST
QUALIFICATION BY FIELD OF STUDY AND AGE

	B • A • D E G R E E	E • C • M • C • E • G • R • E • E	E • S • C • C • E • G • R • E
20	-4800	-4800	-4910
21	-5250	-5250	-5360
22	-5475	-5475	-5585
23	6049	7844	7252
24	6940	8885	8272
25	7798	9889	9257
26	8622	10855	10207
27	9414	11784	11121
28	10171	12675	12000
29	10896	13529	12844
30	11587	14346	13653
31	12244	15125	14426
32	12869	15866	15165
33	13460	16570	15868
34	14017	17237	16536
35	14541	17866	17168
36	15032	18458	17766
37	15490	19012	18328
38	15914	19529	18855
39	16305	20009	19347
40	16662	20451	19803
41	16986	20855	20224
42	17277	21222	20610
43	17534	21552	20961
44	17758	21844	21277
45	17949	22099	21557
46	18106	22317	21802
47	18230	22497	22012
48	18321	22639	22187
49	18378	22744	22326
50	18402	22812	22430
51	18392	22842	22499
52	18350	22835	22533
53	18273	22790	22532
54	18164	22708	22495
55	18021	22589	22423
56	17845	22432	22316
57	17635	22238	22173
58	17392	22006	21996
59	17116	21736	21783
60	16806	21430	21535
61	16463	21086	21252
62	16086	20704	20933
63	15676	20285	20579
64	15233	19829	20190

TABLE 8.4

CALCULATED INCOME FLOW (R.P.A.) BEFORE DEDUCTION OF INCOME TAX OF EMPLOYEES WITH A B.A. OR HIGHER DEGREE BY FIELD OF STUDY AND AGE

A G E	A G R I C U L T U R E				B U S I N E S S				M A T H E M A T I C S				P S Y C H O L O G Y			
	A C C O U N T I N G	A F F I K A N S	A G R I C U L T U R E	B O T A N Y	E C O N O M I C S	C H E M I S T R Y	E N G I N E E R I N G	E N G I N E E R I N G	G E O G R A P H Y	H I S T O R Y	M A T H E M A T I C S	P H Y S I C S	P S Y C H O L O G Y	S O C I O L O G Y	Z O O L O G Y	
20	-4800	-4800	-4910	-4910	-4800	-4910	-4800	-4800	-4910	-4800	-4910	-4910	-4800	-4800	-4910	
21	-5250	-5250	-5460	-5460	-5250	-5360	-5250	-5250	-5360	-5250	-5360	-5360	-5250	-5250	-5360	
22	-5475	-5475	-5685	-5685	-5585	-5475	-5585	-5475	-5585	-5475	-5585	-5585	-5475	-5475	-5585	
23	-5975	-5825	-5910	-5905	-5825	-5505	-5825	-5825	-5905	-5825	-5835	-5905	-5825	-5825	-5905	
24	13528	7503	-5905	5970	9658	9495	7082	5977	5970	7816	8562	9902	8707	6882	5970	
25	14395	8258	12014	6679	10550	10336	8410	6916	6687	8467	9444	10684	5629	7852	6420	
26	15227	8990	12272	7473	11418	11153	9689	7822	7528	9095	10301	11446	10514	8782	7080	
27	16023	9697	12531	8242	12262	11548	10521	8694	8338	9702	11132	12188	11363	9671	7293	
28	16783	10380	12790	8984	13082	12718	12105	9533	9116	10285	11937	12908	12175	10518	8231	
29	17508	11039	13051	9701	13877	13465	13241	10335	9862	10846	12716	13608	12952	11326	9134	
30	18198	11674	13312	10391	14649	14189	14329	11110	10576	11385	13470	14288	13691	12092	10001	
31	18852	12285	13574	11055	15396	14889	15369	11848	11258	11901	14198	14947	14354	12818	10832	
32	19470	12872	13837	11653	16119	15566	16362	12553	11909	12395	14900	15585	15061	13502	11629	
33	20053	13435	14101	12305	16818	16219	17306	13224	12527	12866	15576	16203	15691	14147	12390	
34	20601	13973	14365	12891	17492	16849	18203	13862	13114	13314	16227	16800	16285	14750	13116	
35	21112	14488	14631	13451	18142	17455	19051	14466	13669	13740	16851	17377	16843	15312	13807	
36	21589	14978	14897	13985	18768	18038	19852	15036	14191	14144	17450	17933	17364	15834	14462	
37	22030	15444	15164	14493	19370	18597	20605	15573	14682	14525	18024	18468	17848	16315	15082	
38	22435	15887	15432	14974	19948	19133	21310	16077	15142	14883	18571	18983	18296	16755	15667	
39	22805	16305	15700	15430	20501	19646	21567	16546	15569	15219	19093	19478	18708	17155	16217	
40	23140	16699	15970	15859	21031	20134	22576	16983	15964	15532	19589	19951	19083	17513	16731	
41	23438	17069	16240	16263	21536	20600	23137	17385	16328	15823	20059	20405	19422	17831	17210	
42	23702	17414	16511	16640	22017	21042	23650	17755	16660	16092	20503	20837	19724	18108	17654	
43	23930	17736	16782	16991	22473	21460	24116	18090	16960	16337	20922	21249	19990	18344	18062	
44	24122	18033	17055	17316	22906	21855	24533	18392	17228	16561	21315	21641	20220	18540	18435	
45	24279	18307	17328	17615	23314	22226	24903	18661	17464	16762	21682	22012	20413	18655	18773	
46	24400	18556	17603	17888	23698	22574	25225	18896	17668	16940	22023	22362	20569	18809	19076	
47	24486	18781	17878	18135	24058	22899	25495	19097	17840	17096	22339	22692	20689	18882	19343	
48	24536	18983	18153	18356	24393	23200	25725	19265	17981	17229	22629	23001	20773	18914	19575	
49	24551	19160	18430	18551	24704	23477	25903	19400	18090	17340	22893	23289	20820	18906	19772	
50	24530	19312	18707	18719	24992	23731	26033	19501	18166	17428	23131	23557	20831	18857	19933	
51	24474	19441	18986	18862	25255	23962	26115	19568	18211	17494	23344	23805	20806	18767	20059	
52	24363	19546	19265	18978	25493	24169	26150	19602	18224	17537	23531	24032	20743	18636	20150	
53	24255	19627	19544	19069	25708	24352	26136	19602	18206	17557	23692	24238	20645	18465	20206	
54	24093	19683	19825	19133	25898	24512	26075	19568	18155	17555	23827	24424	20510	18252	20226	
55	23894	19715	20107	19172	26064	24649	25966	19501	18072	17531	23936	24589	20339	17999	20211	
56	23661	19724	20389	19184	26206	24762	25808	19401	17958	17484	24020	24733	20131	17706	20160	
57	23391	19708	20672	19170	26324	24851	25603	19267	17812	17415	24078	24857	19886	17371	20075	
58	23087	19668	20956	19130	26417	24917	25350	19099	17633	17323	24110	24961	19606	16996	19954	
59	22746	19604	21240	19064	26487	24960	25045	18898	17423	17208	24117	25043	19288	16580	19798	
60	22371	19516	21526	18972	26532	24979	24701	18664	17182	17071	24057	25106	18935	16123	19606	
61	21959	19404	21812	18853	26552	24975	24304	18395	16908	16912	24052	25147	18545	15625	19380	
62	21513	19267	22099	18705	26549	24947	23855	18094	16602	16730	23981	25168	18118	15087	19118	
63	21030	19107	22387	18539	26522	24896	23367	17758	16265	16525	23885	25169	17655	14507	18820	
64	20512	18922	22676	18342	26470	24821	22827	17390	15895	16298	23762	25149	17156	13887	18488	

The appropriate tax, calculated on the PAYE basis as at 1 March 1981, is deducted from the income for every year of the working life and Tables 8.5 to 8.8 show the result of this calculation.

9 PROFITABILITY IN 1981

The calculated income flows as shown in Tables 8.5 to 8.8 are discounted at different rates of interest by using the formula indicated in Paragraph 5.

The cash value of the expected income flows discounted at rates of interest of 0 % to 16 % is shown in Tables 9.1 to 9.4 for the occupations and fields of study.

The discount rate of 0 % is used in the comparison of profitability because it is the total income a person can expect to earn during his working life.

To disregard relatively small differences in cash value in determining the rank order of profitability, the discounted incomes for occupations and fields of study were approximated to the nearest R5 000.

9.1 OCCUPATIONS

According to Table 9.5 the insurance agent/broker is the most profitable occupation practised by graduate employees. The medical specialist is second and the economic adviser third. The difference between the cash value of the insurance agent/broker and the medical specialist is relatively large. The insurance agent/broker earns significantly more than the medical specialist. A possible explanation for the position of the insurance agent/broker is the fact that part of his income is obtained on a commission basis. The income of the insurance agent/broker can in a sense be compared with the income of self-employed persons because he can to a large extent determine the size of his income, which is not normally the case with employees.

Of the 31 occupations practised by employees, the graduate teacher

TABLE 8.5

CALCULATED INCOME FLOW (R.P.A.) AFTER DEDUCTION OF INCOME TAX OF EMPLOYEES BY OCCUPATION AND AGE

AGE	AGRICULTURAL		ARCHITECT		ARTS		BUSINESS		CAPITAL		COMPUTER		ELECTRICAL		GENERAL
	AGRICULTURAL	AGRICULTURAL	ARCHITECT	ARCHITECT	ARTS	ARTS	BUSINESS	BUSINESS	CAPITAL	CAPITAL	COMPUTER	COMPUTER	ELECTRICAL	ELECTRICAL	
20	-4544	-4544	-4654	-4654	-4654	-4654	-4654	-4654	-4544	-4654	-4744	-4654	-4654	-4544	-4654
21	-4950	-4950	-5160	-5160	-5060	-4950	-5030	-5060	-4950	-5060	-5150	-5060	-5380	-4950	-5380
22	-5156	-5156	-5366	-5366	-5266	-5156	-5236	-5266	-5156	-5266	-5356	-5266	-5586	-5156	-5356
23	9568	6157	-5567	-5567	-5467	-5357	-5437	-5543	-5553	-5543	-5557	-5543	-5787	-5463	-5557
24	10030	7107	8020	7977	-5673	5541	3723	6727	-6000	9142	9691	9221	-5553	12176	9596
25	10469	7579	8357	8365	10066	5938	4064	7303	-6201	9708	10415	9859	5214	12831	10230
26	11243	14719	8928	8982	10981	6691	6317	8058	-6758	10554	11452	10784	15897	13992	11191
27	11662	15290	9258	9350	11564	7077	7538	8591	6793	11089	12133	11376	16477	14620	11797
28	12153	15938	9674	9799	12191	7373	8757	9205	7301	11692	12866	12039	17132	15324	12482
29	12535	16445	9992	10142	12705	7872	9801	9691	7697	12158	13449	12565	17640	15888	13029
30	13001	17005	10387	10566	13280	8634	10863	10262	8171	12708	14115	13150	18232	16514	13655
31	13332	17451	10683	10875	13726	9249	11760	10703	8535	13139	14633	13621	18671	17009	14152
32	13664	17873	10970	11179	14138	9830	12571	11122	8876	13538	15131	14060	19082	17475	14615
33	13962	18250	11245	11454	14525	10378	13323	11524	9201	13909	15588	14457	19466	17919	15069
34	14248	18597	11511	11727	14896	10884	14010	11902	9516	14264	16035	14839	19813	18333	15513
35	14512	18922	11769	11992	15236	11359	14634	12254	9811	14606	16448	15207	20116	18704	15924
36	14771	19224	12024	12231	15556	11796	15210	12598	10085	14924	16824	15540	20413	19054	16312
37	15011	19483	12260	12469	15841	12213	15747	12926	10348	15217	17172	15854	20682	19383	16694
38	15245	19715	12501	12690	16110	12596	16233	13222	10598	15499	17502	16138	20900	19664	17044
39	15459	19944	12729	12895	16365	12937	16675	13518	10832	15767	17815	16408	21094	19943	17385
40	15648	20133	12949	13100	16588	13270	17065	13779	11061	15995	18109	16664	21284	20183	17703
41	15833	20282	13160	13291	16797	13550	17407	14034	11257	16231	18362	16888	21428	20403	18014
42	15998	20428	13375	13464	16986	13823	17722	14263	11449	16443	18579	17094	21549	20584	18296
43	16144	20533	13566	13624	17144	14062	17994	14487	11636	16630	18758	17271	21644	20759	18571
44	16285	20616	13763	13784	17271	14277	18218	14651	11795	16810	18982	17435	21695	20895	18822
45	16407	20677	13952	13931	17401	14473	18397	14890	11947	16960	19149	17586	21742	21012	19069
46	16525	20717	14132	14064	17500	14637	18551	15069	12094	17103	19282	17708	21764	21110	19292
47	16623	20737	14301	14195	17568	14782	18644	15229	12214	17222	19416	17816	21742	21189	19489
48	16717	20717	14463	14298	17639	14895	18713	15384	12330	17333	19512	17895	21695	21230	19679
49	16776	20676	14617	14402	17680	15004	18735	15516	12442	17421	19574	17961	21643	21251	19845
50	16845	20614	14779	14508	17689	15065	18741	15628	12526	17501	19620	18014	21547	21253	20007
51	16778	20431	14833	14486	17585	15023	18582	15636	12506	17457	19565	17937	21326	21137	20065
52	16808	20324	14965	14565	17567	15048	18495	15723	12569	17506	19565	17947	21181	21081	20180
53	16735	20078	15004	14532	17417	14955	18273	15708	12528	17431	19464	17828	20891	20926	20211
54	16742	19929	15150	14584	17354	14943	18104	15772	12573	17432	19428	17796	20657	20833	20300
55	16730	19739	15272	14639	17277	14899	17893	15833	12601	17442	19358	17751	20478	20720	20384
56	16714	19528	15384	14680	17169	14836	17651	15873	12626	17411	19291	17676	20209	20569	20463
57	16679	19277	15505	14707	17047	14740	17363	15894	12623	17373	19189	17588	19531	20419	20518
58	16624	19017	15618	14737	16895	14626	17033	15896	12617	17328	19067	17470	19608	20223	20570
59	16565	18714	15724	14738	16728	14494	16658	15893	12608	17259	18929	17340	19260	20008	20600
60	16485	18389	15822	14743	16545	14344	16246	15887	12584	17182	18757	17197	18876	19773	20606
61	16521	18161	16032	14849	16448	14281	15892	15981	12663	17202	18687	17144	18584	19618	20729
62	16418	17783	16115	14840	16215	14079	15385	15935	12607	17077	18463	16958	18145	19324	20729
63	16255	17360	16207	14818	15952	13841	14827	15886	12548	16945	18240	16742	17652	19019	20685
64	16167	16931	16290	14782	15674	13582	14218	15816	12472	16805	17981	16508	17144	18656	20659

TABLE 6.5 (CONTINUED)

CALCULATED INCOME FLOW (R.P.A.) AFTER DEDUCTION OF INCOME TAX OF EMPLOYEES BY OCCUPATION AND AGE

AGE	INSURANCE				L E G A L	M E C H A N I C A L	M E D I C A L	M E T A L L U R G I S T	P H A R M A C I S T	P H Y S I C I S T	C U A N T I T Y	T E A C H E R		V E T E R I N A R I A N
	G E O G R A P H I C A L	A G E N T , B R O K E R	L A N D S U R V E Y O R	L E G A L A D V I S E R								P L A N N E R	P L A N N E R	
20	-4744	-4544	-4744	-4624	-4544	-4744	-4654	-4654	-4434	-4654	-4944	-4544	-4744	-4684
21	-5150	-4950	-5150	-5030	-4950	-5150	-5380	-5060	-4820	-5060	-5340	-4950	-5150	-5430
22	-5356	-5156	-5356	-5236	-5156	-5356	-5586	-5266	-5026	-5266	-5546	-5156	-5356	-5636
23	-5557	9232	-5557	6559	-5463	-5557	-5787	-5543	-5227	-5543	-5747	-5563	-5557	-5837
24	9658	10171	8868	7591	-5970	10753	-5953	5964	9312	8072	9962	7081	8464	-6043
25	10415	11057	9524	8549	8461	11496	-6194	6505	9716	8677	10596	7467	9583	2120
26	11494	12321	10457	9735	9372	12635	5503	7222	10401	9531	12585	8041	9562	10778
27	12197	13170	11067	10616	10018	13334	10465	7757	10783	10101	12925	8404	10541	11327
28	12944	14070	11746	11547	10723	14092	10445	8373	11237	10759	13444	8835	11194	11941
29	13562	14844	12294	12315	11293	14698	10797	8881	11567	11277	13837	9164	11734	12431
30	14230	15687	12903	13150	11939	15381	11698	9481	11982	11875	14300	9564	12334	12995
31	14761	16411	13387	13826	12448	15524	12152	9976	12273	12362	14653	9852	12604	13426
32	15251	17104	13845	14462	12934	16445	21649	10451	12554	12819	14999	10132	13255	13835
33	15723	17780	14267	15068	13402	16939	21844	10915	12807	13250	15322	10361	13672	14211
34	16151	18423	14654	15627	13834	17385	22034	11377	13038	13663	15619	10620	14076	14569
35	16554	19054	15040	16170	14235	17809	22206	11820	13261	14056	15890	10852	14446	14899
36	16925	19654	15382	16674	14620	18206	22360	12255	13470	14417	16170	11056	14807	15216
37	17275	20222	15714	17145	14993	18578	22516	12679	13657	14773	16413	11260	15144	15518
38	17580	20780	16017	17573	15341	18910	22654	13097	13823	15109	16649	11435	15470	15787
39	17862	21305	16306	17995	15655	19222	22774	13506	13982	15435	16878	11604	15765	16028
40	18136	21828	16565	18370	15958	19509	22897	13905	14117	15741	17080	11756	16051	16274
41	18365	22311	16810	18721	16250	19771	22999	14292	14228	16038	17261	11888	16314	16475
42	18553	22794	17018	19051	16517	19995	23103	14671	14333	16299	17436	12012	16566	16681
43	18738	23245	17213	19342	16875	20219	23189	15045	14432	16572	17590	12122	16798	16842
44	18882	23690	17395	19623	17200	20404	23257	15414	14505	16808	17738	12213	17015	17004
45	19004	24091	17547	19864	17516	20551	23329	15785	14565	17051	17864	12299	17207	17139
46	19104	24500	17687	20086	17407	20694	23382	16134	14614	17257	17968	12368	17374	17246
47	19182	24887	17796	20287	17571	20798	23435	16495	14641	17459	18067	12431	17535	17342
48	19219	25251	17910	20449	17744	20884	23455	16851	14647	17642	18159	12477	17689	17428
49	19253	25611	17976	20591	17874	20951	23476	17176	14647	17821	18229	12506	17819	17486
50	19246	25948	18030	20709	17995	20999	23500	17514	14640	17980	18277	12518	17941	17533
51	19118	26163	17971	20709	18007	20909	23406	17747	14512	18035	18221	12425	17939	17453
52	19049	26475	17999	20785	18091	20901	23394	18073	14462	18166	18243	12426	18013	17461
53	18876	26688	17897	20730	18067	20774	23285	18287	14306	18178	18160	12298	17978	17342
54	18762	26980	17865	20753	18118	20728	23259	18596	14228	18287	18156	12265	18027	17313
55	18645	27247	17837	20756	18161	20664	23214	18919	14143	18376	18130	12215	18054	17272
56	18470	27513	17762	20741	18196	20562	23172	19215	14038	18445	18099	12159	18082	17204
57	18290	27758	17691	20686	18188	20441	23113	19524	13910	18512	18065	12066	18087	17106
58	18088	28005	17591	20632	18189	20298	23035	19805	13774	18576	17990	11997	18068	17002
59	17846	28232	17477	20540	18165	20116	22961	20101	13615	18603	17930	11901	18042	16884
60	17574	28444	17334	20429	18116	19933	22869	20393	13448	18645	17828	11789	17992	16735
61	17396	28765	17297	20394	18178	19831	22900	20771	13380	18769	17857	11779	18057	16703
62	17080	28955	17111	20239	18095	19571	22789	21045	13182	18771	17728	11643	17994	16531
63	16739	29134	16912	20045	18005	19310	22660	21314	12960	18753	17593	11486	17888	16331
64	16346	29302	16695	19830	17885	19021	22534	21598	12715	18732	17453	11313	17791	16103

TABLE 8.6

CALCULATED INCOME FLGW (R.P.A.) AFTER DEDUCTION OF INCOME TAX OF SELF-EMPLOYED PERSONS BY OCCUPATION AND AGE

A G E	A C C U N T I R / C / F C C)			A T T O R N E Y / L A W Y E R		C I V I L E N G I N E E R		G E N E R A L M E D I C A L P R A C T I T I G N E R			M E D I C A L S P E C I A L I S T		C U A N T I T Y S U R V E Y O P		V E T E R I N A P I A N
	A D V O C A T E	A R C H I T E C T	A R C H I T E C T	A R C H I T E C T	A R C H I T E C T	A R C H I T E C T	A R C H I T E C T	D E N T I S T	F A R M E R	L A N D S U R V E Y O R	S P E C I A L I S T	P H A R M A C I S T	S U R V E Y O R	S U R V E Y O R	
20	-4544	-4624	-4654	-4624	-4744	-4654	-4654	-4654	-4744	-4654	-4434	-4544	-4664		
21	-4950	-5030	-5060	-5030	-5150	-5380	-5160	-5380	-5150	-5380	-4820	-5340	-5430		
22	-5156	-5236	-5266	-5236	-5356	-5586	-5366	-5586	-5356	-5586	-5026	-5546	-5636		
23	6157	-5643	-5467	-5437	-5557	-5787	-5567	-5787	-5557	-5787	-5227	-5747	-5837		
24	7107	-6050	-5673	3723	17450	-5993	8931	-5993	8868	-5993	9312	5962	-6043		
25	7579	5541	10066	4064	17981	8900	9657	-6194	16457	-6194	16491	10596	5250		
26	16114	8001	10981	14187	19587	21043	10662	5903	17307	5903	17550	12589	15734		
27	16948	10747	13935	15358	20109	21103	11340	22463	17320	10465	17751	16217	16146		
28	17835	13257	14834	16539	20724	21275	12080	22879	17430	10445	18029	16740	16626		
29	18571	15374	15586	17533	21190	21317	12675	23169	17439	10757	18203	17156	16957		
30	19389	17380	16403	18580	21738	21470	13336	23545	17546	11698	18456	17657	17451		
31	20038	19117	17059	19436	22156	21494	13849	23784	17535	12192	18607	18045	17807		
32	20654	20678	17666	20245	22554	21529	14332	24007	17539	29689	18739	18426	18128		
33	21221	22070	18249	20984	22912	21555	14791	24213	17541	29988	18851	18774	18461		
34	21760	23307	18767	21654	23244	21571	15230	24378	17542	30257	18961	19126	18760		
35	22254	24424	19267	22272	23556	21595	15627	24525	17540	30496	19052	19480	19061		
36	22717	25412	19722	22828	23851	21617	16002	24666	17538	30704	19123	19793	19348		
37	23146	26313	20119	23334	24108	21606	16357	24789	17533	30882	19191	20112	19611		
38	23538	27106	20501	23804	24339	21606	16678	24875	17544	31030	19259	20416	19877		
39	23902	27796	20841	24214	24555	21617	16975	24970	17536	31147	19288	20703	20126		
40	24235	28400	21145	24582	24755	21599	17251	25028	17526	31234	19316	20950	20361		
41	24534	28909	21415	24896	24939	21571	17510	25049	17515	31291	19341	21263	20599		
42	24805	29335	21651	25179	25084	21555	17734	25079	17502	31317	19347	21522	20755		
43	25051	29679	21853	25403	25213	21525	17940	25073	17504	31313	19334	21788	21015		
44	25268	29939	22017	25597	25324	21494	18111	25052	17488	31275	19318	22033	21159		
45	25457	30118	22170	25738	25421	21470	18261	24994	17470	31214	19283	22263	21388		
46	25596	30213	22269	25868	25479	21417	18394	24946	17467	31119	19228	22479	21562		
47	25733	30226	22335	25928	25522	21375	18510	24860	17445	30993	19171	22681	21740		
48	25844	30157	22391	25954	25549	21303	18592	24738	17439	30837	19055	22690	21880		
49	25928	30004	22393	25927	25561	21243	18658	24625	17414	30651	19016	23102	22022		
50	25987	29770	22383	25870	25559	21193	18706	24474	17405	30434	18918	23276	22170		
51	25920	29352	22241	25682	25417	21014	18621	24210	17277	30087	18700	23359	22181		
52	25927	28952	22146	25542	25360	20946	18619	24032	17264	29810	18581	23527	22297		
53	25807	28369	21940	25270	25188	20745	18500	23733	17149	29402	18341	23582	22319		
54	25738	27790	21801	25045	25077	20663	18447	23496	17116	29064	18200	23723	22405		
55	25667	27131	21629	24787	24975	20567	18377	23244	17098	28696	18039	23872	22496		
56	25569	26367	21418	24473	24831	20483	18291	22977	17078	28257	17875	24003	22572		
57	25446	25522	21174	24128	24672	20368	18189	22670	17040	27846	17670	24143	22653		
58	25297	24546	20897	23722	24497	20261	18051	22340	17017	27392	17478	24245	22719		
59	25121	23471	20606	23276	24283	20145	17898	21994	16992	26874	17250	24357	22769		
60	24895	22277	20257	22796	24053	20020	17705	21633	16966	26338	17020	24478	22802		
61	24783	21052	19987	22363	23547	20006	17631	21341	17057	25880	16906	24682	22961		
62	24525	19547	19582	21774	23654	19862	17386	20932	17028	25258	16634	24775	22985		
63	24239	17868	19118	21107	23366	19725	17140	20485	16996	24614	16368	24854	23015		
64	23901	16016	16628	20379	23040	19586	16860	19987	16963	23902	16068	24919	23006		

TABLE 8.7

CALCULATED INCOME FLOW (R.P.A.) AFTER DEDUCTION OF INCOME
TAX OF EMPLOYEES WITH A B.DEGREE AS HIGHEST
QUALIFICATION BY FIELD OF STUDY AND AGE

	B • A • D E G R E E	B • C M • D E G R E E	E • S C • C G R E E
20	-4544	-4544	-4654
21	-4950	-4950	-5060
22	-5156	-5156	-5266
23	5615	7174	6661
24	6398	8043	7531
25	7135	8857	8341
26	8035	9898	9367
27	8706	10649	10116
28	9440	11447	10925
29	10039	12103	11583
30	10692	12822	12291
31	11215	13390	12876
32	11697	13921	13416
33	12146	14418	13923
34	12571	14890	14399
35	12965	15324	14836
36	13325	15726	15254
37	13657	16104	15644
38	13955	16461	15995
39	14228	16781	16343
40	14480	17070	16639
41	14714	17338	16928
42	14915	17586	17178
43	15097	17797	17410
44	15246	18004	17624
45	15392	18172	17802
46	15486	18300	17962
47	15578	18426	18103
48	15637	18514	18224
49	15678	18583	18309
50	15686	18615	18377
51	15592	18545	18328
52	15566	18538	18344
53	15405	18411	18243
54	15328	18347	18224
55	15233	18282	18170
56	15118	18179	18099
57	14968	18057	18010
58	14800	17897	17905
59	14599	17730	17760
60	14379	17526	17597
61	14261	17421	17519
62	14004	17158	17319
63	13707	16892	17084
64	13390	16585	16831

TABLE 8.8

CALCULATED INCOME FLOW (R.P.A.) AFTER DEDUCTION OF INCOME TAX OF EMPLOYEES WITH A B.A. OR HIGHER DEGREE BY FIELD OF STUDY AND AGE

A G E	B U S I N E S S															
	A C C O U N T I N G	A F F I K I A N S	A G R I C U L T U R E	B O T T A N Y	E C O N O M I C S	C H E M I S T R Y	E C O N O M I C S	E N G I N E E R I N G	G E O G R A P H Y	H I S T O R Y	M A T H E M A T I C S	P H Y S I C S	P S Y C H O L O G Y	S O C I O L O G Y	Z O O L O G Y	
20	-4544	-4544	-4654	-4654	-4544	-4654	-4544	-4544	-4654	-4544	-4654	-4654	-4544	-4544	-4654	
21	-4950	-4950	-5160	-5060	-4950	-5060	-4950	-5060	-4950	-5060	-5060	-5060	-4950	-4950	-5060	
22	-5156	-5156	-5366	-5266	-5156	-5266	-5156	-5266	-5156	-5266	-5266	-5266	-5156	-5156	-5266	
23	-5613	-5463	-5567	-5543	-5463	-5543	-5463	-5463	-5543	-5463	-5473	-5543	-5463	-5463	-5543	
24	11601	6876	-5543	5541	8665	8540	6520	5548	5541	7146	7770	8861	7850	6346	5541	
25	12215	7517	10496	6167	9382	9211	7644	6374	6175	7692	8499	9483	8645	7174	5938	
26	13264	8354	11032	7036	10353	10138	8941	7343	7085	8443	9443	10381	9620	8174	6691	
27	13836	8949	11236	7711	11022	10783	9955	8100	7793	8946	10127	10970	10308	8923	6880	
28	14471	9613	11540	8448	11764	11479	10958	8905	8556	9536	10872	11625	11057	9724	7800	
29	14971	10154	11733	9045	12367	12051	11887	9581	9182	9998	11477	12158	11658	10381	8574	
30	15562	10759	12034	9724	13047	12704	12805	10305	9873	10530	12156	12777	12329	11096	9397	
31	15992	11245	12236	10260	13591	13222	13564	10903	10423	10936	12713	13267	12857	11657	10084	
32	16418	11700	12439	10778	14102	13705	14270	11447	10944	11333	13233	13724	13340	12176	10724	
33	16868	12133	12629	11254	14591	14172	14929	11970	11432	11694	13715	14156	13802	12675	11328	
34	17169	12539	12828	11719	15070	14622	15551	12452	11884	12036	14180	14588	14223	13122	11886	
35	17510	12925	13029	12137	15522	15033	16127	12903	12307	12366	14609	14985	14616	13521	12409	
36	17834	13285	13230	12551	15940	15450	16672	13329	12706	12672	15043	15376	14572	13903	12899	
37	18121	13625	13415	12930	16350	15833	17173	13712	13067	12949	15436	15736	15321	14238	13361	
38	18382	13942	13613	13281	16752	16193	17640	14075	13407	13216	15807	16091	15628	14543	13778	
39	18608	14228	13811	13611	17103	16546	18076	14405	13708	13456	16169	16426	15896	14823	14170	
40	18835	14517	13997	13914	17463	16872	18469	14711	13991	13685	16505	16839	16159	15076	14534	
41	19025	14767	14193	14201	17798	17185	18832	14993	14251	13892	16814	17041	16386	15304	14863	
42	19181	15007	14374	14473	18108	17474	19165	15243	14478	14090	17105	17337	16592	15488	15172	
43	19337	15239	14570	14719	18402	17739	19449	15486	14688	14260	17388	17613	16878	15660	15458	
44	19455	15445	14753	14939	18673	17998	19714	15692	14881	14409	17645	17869	16924	15792	15719	
45	19555	15623	14951	15148	18937	18245	19932	15865	15042	14550	17893	18103	17049	15899	15945	
46	19638	15792	15136	15346	19195	18467	20140	16036	15186	14683	18114	18327	17154	15965	16152	
47	19686	15953	15336	15515	19410	18684	20315	16173	15313	14794	18322	18549	17240	16022	16339	
48	19717	16091	15517	15656	19631	18877	20450	16277	15405	14882	18504	18732	17290	16038	16491	
49	19713	16204	15714	15787	19809	19046	20552	16380	15486	14963	18678	18930	17320	16030	16624	
50	19711	16308	15895	15907	20002	19210	20643	16433	15530	15021	18826	19090	17331	15997	16737	
51	19574	16305	15994	15902	20051	19251	20555	16384	15455	14972	18867	19148	17206	15839	16714	
52	19521	16378	16177	15986	20213	19383	20620	16402	15472	15000	18982	19303	17177	15756	16788	
53	19331	16327	16276	15945	20233	19390	20506	16302	15354	14905	18965	19333	17013	15533	16710	
54	19245	16367	16461	15993	20366	19493	20465	16284	15319	14903	19070	19443	16912	15384	16730	
55	19119	16383	16645	16016	20454	19592	20396	16233	15268	14894	19143	19551	16809	15227	16715	
56	18958	16392	16842	16028	20536	19648	20255	16165	15186	14862	19191	19638	16669	15009	16681	
57	18796	16376	17023	16014	20614	19699	20166	16079	15085	14808	19230	19705	16506	14779	16630	
58	18600	16352	17205	15990	20667	19746	20027	15975	14966	14746	19243	19771	16306	14524	16542	
59	18385	16304	17404	15940	20717	19770	19840	15838	14816	14661	19250	19834	16100	14228	16450	
60	18136	16248	17588	15880	20742	19789	19606	15668	14650	14569	19249	19859	15859	13906	16306	
61	17988	16288	17892	15913	20862	19905	19481	15615	14571	14575	19324	20020	15717	13670	16280	
62	17695	16199	18092	15817	20879	19896	19204	15410	14355	14453	19290	20022	15418	13286	16098	
63	17382	16087	18272	15711	20852	19864	18892	15166	14123	14308	19230	20023	15093	12851	15896	
64	17034	15966	18453	15578	20820	19808	18550	14918	13870	14156	19143	20022	14744	12397	15676	

TABLE 9.1

CASH VALUE OF THE EXPECTED INCOME (RAND) OF EMPLOYEES BY OCCUPATION AND VARIOUS DISCOUNT RATES

OCCUPATION	DISCOUNT RATES									
	0 %	2 %	4 %	6 %	8 %	10 %	12 %	14 %	16 %	
ACCOUNTANT(N.R./N.C./NOT FQC)	618277	382332	250042	171879	123282	91582	69978	54671	43450	
ACCOUNTANT(R/C/FQC)	746840	463803	303556	208102	148401	109325	82673	63821	50056	
AGRICULTURAL EXTENSION OFFICER	520539	311414	196064	129097	88221	62060	44574	32426	23697	
AGRICULTURAL RESEARCHER	510304	307416	194743	128898	88464	62448	44981	32802	24027	
ARCHITECT	607196	365939	231039	151808	103023	71632	50614	36036	25614	
ARCHIVIST, LIBRARIAN	491890	291699	181068	116930	77974	53248	36906	25706	17779	
ATTORNEY, LAWYER	597718	356172	221689	143270	95458	65065	44991	31271	21606	
BIOLOGICAL SCIENTIST	533786	318402	199448	130399	88325	61485	43628	31293	22487	
CHAPLAIN, CLERGYMAN, MINISTER	385442	217312	125597	73316	42251	23080	10849	2823	-2563	
CHEMIST	614890	372750	237809	158702	109991	78577	57445	42688	32040	
CIVIL ENGINEER	685833	416783	266531	178298	123901	88794	65171	48674	36774	
COMPUTER SCIENTIST	630809	383506	245292	164055	113921	81533	59718	44469	33460	
DENTIST	755144	461687	295736	197173	135836	95984	69068	50261	36730	
ECONOMIC ADVISER	760891	468135	303472	206026	145457	106042	79300	60474	46787	
ECONOMIST	700061	421376	267246	177577	122767	87659	64184	47875	36158	
ELECTRICAL ENGINEER	706536	434806	281810	191166	134761	98013	73055	55468	42672	
GENERAL MEDICAL PRACTITIONER	755310	448393	277948	178674	118157	79676	54257	36896	24694	
GEOLOGIST	671742	410472	263753	177142	123489	88719	65241	48800	36914	
INSURANCE AGENT, BROKER	910452	546218	346779	231879	162269	118012	88582	68200	53570	
LAND SURVEYOR	628054	380692	242689	161733	111876	79733	58129	43059	32200	
LECTURER	605053	358368	222250	143395	95507	65106	45011	31242	21508	
LEGAL ADVISER	714078	431806	275399	184295	128571	92869	68996	52405	40476	
MECHANICAL ENGINEER	738836	450692	289477	194614	136002	98090	72521	54625	41686	
MEDICAL SPECIALIST	784560	461243	282347	178688	115933	76375	50521	33078	20986	
METALLURGIST	588414	341731	208481	132887	87864	59765	41447	29023	20298	
PHARMACIST	526403	323984	209743	141889	99560	71918	53106	39827	30154	
PHYSICIST	621177	371511	233783	153894	105223	74161	53471	39155	28911	
QUANTITY SURVEYOR	655792	400432	257482	173248	121087	87252	64357	48277	36611	
TEACHER	437908	265705	169175	112267	77044	54231	38833	28055	20268	
TOWN AND REGIONAL PLANNER	622281	374444	237028	156907	107849	76390	55346	40726	30230	
VETERINARIAN	592347	353003	219800	141987	94368	63940	43722	29819	19970	

TABLE 9.2

CASH VALUE OF THE EXPECTED INCOME (RAND) OF SELF-EMPLOYED PERSONS BY OCCUPATION AND VARIOUS DISCOUNT RATES

OCCUPATION	DISCOUNT RATES									
	0 %	2 %	4 %	6 %	8 %	10 %	12 %	14 %	16 %	18 %
ACCOUNTANT(R/C/FQC)	925553	566985	366410	248388	175452	128254	96400	74082	57925	
ADVOCATE	924950	557323	350054	227943	152928	105014	73307	51649	36438	
ARCHITECT	761322	460127	291426	192246	131161	91875	65596	47396	34405	
ATTORNEY,LAWYER	879694	534712	341019	226890	156451	111055	80626	59504	44388	
CIVIL ENGINEER	950013	591045	388222	267498	191945	142399	108505	84438	66790	
DENTIST	802050	496934	323673	220060	154975	112205	82950	62228	47108	
FARMER	649157	393966	251425	167727	116143	82874	60509	44908	33670	
GENERAL MEDICAL PRACTITIONER	871568	532337	340113	225754	154520	108244	77036	55295	39723	
LAND SURVEYOR	680624	426211	281614	194898	140157	103927	78915	61003	47767	
MEDICAL SPECIALIST	997241	592359	366067	233842	153284	102287	68878	46324	30698	
PHARMACIST	723853	455207	301701	209272	150773	112009	85244	66089	51954	
QUANTITY SURVEYOR	837021	506338	323023	216038	150392	108167	79810	60025	45755	
VETERINARIAN	783666	470493	296667	195204	133027	93155	66512	48052	34856	

TABLE 9.3

CASH VALUE OF THE EXPECTED INCOME (RAND) OF EMPLOYEES WITH A B. DEGREE AS HIGHEST QUALIFICATION BY FIELD OF STUDY AND VARIOUS DISCOUNT RATES

FIELD OF STUDY	DISCOUNT RATES									
	0 %	2 %	4 %	6 %	8 %	10 %	12 %	14 %	16 %	
B.A. DEGREE	541428	330291	212118	142598	99675	71939	53252	40183	30736	
B.COM. DEGREE	651331	398316	256918	173816	122523	89365	67001	51333	39983	
B.SC. DEGREE	638510	388574	249337	167774	117600	85271	63536	48354	37387	

TABLE 9.4

CASH VALUE OF THE EXPECTED INCOME (RAND) OF EMPLOYEES WITH A B. HONS. OR HIGHER DEGREE BY FIELD OF STUDY AND VARIOUS DISCOUNT RATES

FIELD OF STUDY	DISCOUNT RATES									
	0 %	2 %	4 %	6 %	8 %	10 %	12 %	14 %	16 %	
ACCOUNTING	706116	434910	282115	191542	135157	98412	73451	55860	43061	
AFRIKAANS	556649	333128	209400	137427	93487	65411	46706	33765	24526	
AGRICULTURE	563771	334917	208554	135988	91564	63220	44349	31303	21986	
BOTANY	529988	314131	195150	126296	84515	57998	40462	28428	19899	
BUSINESS ECONOMICS	690942	413625	260723	172085	118117	83693	60777	44924	33584	
CHEMISTRY	664190	397932	250945	165624	113610	80392	58254	42926	31952	
ECONOMICS	688937	412515	259280	170119	115744	81078	58060	42206	30932	
ENGLISH	546975	326387	204121	132988	89612	61964	43611	30579	22002	
GEOGRAPHY	516309	308252	192754	125455	84358	58129	40698	28690	20150	
HISTORY	517877	311992	197395	130342	89160	62690	44953	32621	23765	
MATHEMATICS	644791	385357	242214	159203	108666	76448	55021	40221	29652	
PHYSICS	664183	398158	251341	166122	114155	80950	58802	43452	32449	
PSYCHOLOGY	595901	361964	230927	153807	106200	75466	54799	40389	30017	
SOCIOLOGY	538023	326265	207308	137171	93847	65896	47134	34088	24733	
ZOOLOGY	545187	321990	199102	128132	85196	58051	40180	27977	19373	

TABLE 9.5

RANK ORDER OF PROFITABILITY OF OCCUPATIONS PRACTISED BY EMPLOYEES
BY CASH VALUE DISCOUNTED AT 0 % PER ANNUM

RANK ORDER	OCCUPATION	CASH VALUE (RAND)
1	INSURANCE AGENT, BROKER	910000
2	MEDICAL SPECIALIST	785000
3	ECONOMIC ADVISER	760000
4	GENERAL MEDICAL PRACTITIONER	755000
4	DENTIST	755000
5	ACCOUNTANT (R/C/FCC)	745000
6	MECHANICAL ENGINEER	740000
7	LEGAL ADVISER	715000
8	ELECTRICAL ENGINEER	705000
9	ECONOMIST	700000
10	CIVIL ENGINEER	685000
11	GEOLOGIST	670000
12	QUANTITY SURVEYOR	655000
13	COMPUTER SCIENTIST	630000
13	LAND SURVEYOR	630000
14	TOWN AND REGIONAL PLANNER	620000
14	PHYSICIST	620000
14	ACCOUNTANT (N.R./N.C./NOT FCC)	620000
15	CHEMIST	615000
16	ARCHITECT	605000
16	LECTURER	605000
17	ATTORNEY, LAWYER	600000
18	VETERINARIAN	590000
18	METALLURGIST	590000
19	BIOLOGICAL SCIENTIST	535000
20	PHARMACIST	525000
21	AGRICULTURAL EXTENSION OFFICER	520000
22	AGRICULTURAL RESEARCHER	510000
23	ARCHIVIST, LIBRARIAN	490000
24	TEACHER	440000
25	CHAPLAIN, CLERGYMAN, MINISTER	385000

and the chaplain occupy the lowest positions. Since this survey took place at 1 March 1981, the improved position of the teacher after the salary increase on 1 April 1981 is not reflected in the position of the teacher in Table 9.5.

The occupations practised by self-employed persons are arranged in order of profitability in Table 9.6. The medical specialist in own practice earns most, followed by the civil engineer. The chartered, registered accountant and advocate are third in the rank order. Of the 13 occupations, the farmer occupies the lowest position.

To place the differences in cash values somewhat in perspective, it should be mentioned that a difference of R10 000 in Table 9.5 would mean a difference of about R20 per month in salary over the working life.

It is interesting to note that the professions (doctors, lawyers, etc.) are mostly to be found among the top half of the rank order. It should also be remembered that people reaching managerial ranks are excluded from the calculations and this will influence the discounted income of an occupation.

9.2 FIELDS OF STUDY

A B.Com. degree appears to be the most profitable of the three degrees B.A., B.Com., and B.Sc. for employees not studying further than a B. degree (Table 9.7). There is only a small difference between the B.Sc. and B.Com. fields.

According to Table 9.8, accounting is the most profitable field of study followed by business economics and economics. Geography occupies the lowest position in the rank order.

The profitability of fields of study was calculated irrespective of the occupation practised by the persons. The effect of leaving managerial occupations out of the analyses can, to an extent, be estimated by comparing the information in Table 9.8 with the information in Table 9.5. Agriculture shows a cash value of R565 000 against the R520 000 for the agricultural extension officer. The difference for chemist and chemistry is even more pronounced, namely R615 000 and R665 000.

TABLE 9.6

RANK ORDER OF PROFITABILITY OF OCCUPATIONS PRACTISED BY SELF-EMPLOYED PERSONS
BY CASH VALUE DISCOUNTED AT 0 % PER ANNUM

RANK ORDER	OCCUPATION	CASH VALUE (RAND)
1	MEDICAL SPECIALIST	995000
2	CIVIL ENGINEER	950000
3	ACCOUNTANT(R/C/FQC)	925000
3	ADVOCATE	925000
4	ATTORNEY, LAWYER	880000
5	GENERAL MEDICAL PRACTITIONER	870000
6	QUANTITY SURVEYOR	835000
7	DENTIST	800000
8	VETERINARIAN	785000
9	ARCHITECT	760000
10	PHARMACIST	725000
11	LAND SURVEYOR	680000
12	FARMER	650000

TABLE 9.7

RANK ORDER OF PROFITABILITY OF FIELDS OF STUDY OF EMPLOYEES WITH A B.DEGREE AS HIGHEST QUALIFICATION BY CASH VALUE DISCOUNTED AT 0 % PER ANNUM

RANK ORDER	FIELD OF STUDY	CASH VALUE (RAND)
1	B.COM.DEGREE	650000
2	B.SC.DEGREE	640000
3	B.A.DEGREE	540000

TABLE 9.8

RANK ORDER OF PROFITABILITY OF FIELDS OF STUDY OF EMPLOYEES WITH A B.HONS. OR HIGHER DEGREE BY CASH VALUE DISCOUNTED AT 0 % PER ANNUM

RANK ORDER	FIELD OF STUDY	CASH VALUE (RAND)
1	ACCOUNTING	705000
2	BUSINESS ECONOMICS	690000
2	ECONOMICS	690000
3	CHEMISTRY	665000
3	PHYSICS	665000
4	MATHEMATICS	645000
5	PSYCHOLOGY	595000
6	AGRICULTURE	565000
7	AFRIKAANS	555000
8	ENGLISH	545000
8	ZOOLOGY	545000
9	SOCIOLOGY	540000
10	BOTANY	530000
11	HISTORY	520000
12	GEOGRAPHY	515000

The profitability of occupations in 1981 is compared with the corresponding data for 1971 to 1979 (Boshoff 1972 : 59; De Klerk 1975 : 53-54; De Klerk 1976 : 45-46; Kruger 1980 : 36-37). The aim of the comparison is to indicate the changes in the profitability of an occupation or field of study over a given period of time.

In 1979 the profitability of fields of study was investigated for the first time. The following aspects should be considered when comparisons are made:

(a) The 1981 questionnaire was extended to collect information on director's fees, profit-sharing bonuses of employees and the additional earnings of self-employed persons as described in Paragraph 3.2 b, c and d. These amounts are included in the incomes reported for 1981, but not in the income reported for previous years. These sources can be responsible for part of the increase in income when comparisons are made of the income structures. The effect of the omission in the data of previous years when comparisons are made of the rank order, is probably small.

(b) For the purposes of the 1981 report the retirement age is assumed to be 64 years of age. In the 1971 to 1979 reports the retirement age was assumed to be 65 years of age. The effect of the omission of the income at the end of the working life is probably small (see the income in the 64th year of working life in Tables 8.5 to 8.8).

For comparability, approximated cash values are used to give every occupation and field of study a rank order. In the interpretation of the results no attention should, however, be given to small differences in the cash values of occupations and fields of study since the calculation of the cash values is based on certain assumptions, see Paragraph 5 to 8.

The profitability of occupations practised by self-employed persons and employees is compared in Tables 10.1 and 10.2 and that of the fields of study of employees in Tables 10.3 and 10.4. Occupations and fields of study for which data are not available for at least two years, including 1979 and 1981, have been omitted. Exceptions were made in the following cases:

TABLE 10.1
COMPARISON OF PROFITABILITY OF OCCUPATIONS (1971 TO 1981) PRACTISED BY EMPLOYEES

Occupation	Cash value in Rands of the expected income discounted at 0 % per annum						Rank order of profitability					
	1971	1973	1975	1977	1979	1981	1971	1973	1975	1977	1979	1981
Insurance agent/broker	-	-	-	-	635 000	910 000	-	-	-	-	1	1
Medical specialist	305 000	305 000	435 000	450 000	550 000	785 000	1	2	1	4	2	2
General medical practitioner	285 000	300 000	395 000	405 000	505 000	755 000	3	3	3	10	6	3
Dentist	295 000	-	-	430 000	540 000	755 000	2	-	-	6	3	3
Accountant (r/c/FQC)	270 000	325 000	430 000	485 000	535 000	745 000	5	1	2	1	4	4
Graduate engineer	270 000	290 000	395 000	435 000	505 000	705 000	5	5	3	5	6	5
Business economist, economist	-	275 000	395 000	400 000	470 000	705 000	-	7	3	11	7	5
Geologist	-	-	-	460 000	530 000	670 000	-	-	-	2	5	6
Quantity surveyor	295 000	305 000	390 000	420 000	450 000	655 000	2	2	4	8	9	7
Computer scientist	-	-	-	-	435 000	630 000	-	-	-	-	11	8
Land surveyor	295 000	300 000	385 000	410 000	430 000	630 000	2	3	5	9	12	8
Town and regional planner	-	280 000	385 000	425 000	450 000	620 000	-	6	5	7	9	9
Physicist	-	270 000	360 000	385 000	450 000	620 000	-	8	8	13	9	9
Accountant (n.r./r.c./not FQC)	-	-	-	-	465 000	620 000	-	-	-	-	8	9
Architect	270 000	280 000	360 000	380 000	425 000	605 000	5	6	8	14	13	10
Lecturer	-	290 000	390 000	400 000	445 000	605 000	-	5	4	11	10	10
Attorney, lawyer	275 000	295 000	380 000	430 000	430 000	600 000	4	4	6	6	12	11
Veterinarian	245 000	235 000	365 000	390 000	445 000	590 000	6	10	7	12	10	12
Metallurgist	-	-	-	455 000	535 000	590 000	-	-	-	3	4	12
Biological scientist	-	-	315 000	360 000	410 000	535 000	-	-	10	16	14	13
Pharmacist	230 000	240 000	320 000	370 000	400 000	525 000	7	9	9	15	15	14
Agricultural extension officer	-	190 000	280 000	335 000	370 000	520 000	-	11	12	18	17	15
Archivist, librarian	-	240 000	320 000	350 000	370 000	490 000	-	9	9	17	17	16
Teacher, headmaster	-	235 000	310 000	325 000	375 000	460 000	-	10	11	19	16	17

- Data not available

TABLE 10.2
COMPARISON OF PROFITABILITY OF OCCUPATIONS (1971 TO 1981) PRACTISED BY SELF-EMPLOYED PERSONS

Occupation	Cash value in Rands of the expected income discounted at 0 % per annum						Rank order of profitability					
	1971	1973	1975	1977	1979	1981	1971	1973	1975	1977	1979	1981
Medical specialist (all fields)	465 000	530 000	630 000	670 000	690 000	995 000	1	1	1	2	2	1
Graduate engineer (all fields)	430 000	475 000	570 000	560 000	645 000	935 000	3	4	5	8	3	2
Accountant (r/c/FQC)	445 000	495 000	620 000	680 000	700 000	925 000	2	2	2	1	1	3
Advocate	350 000	430 000	615 000	665 000	630 000	925 000	8	9	3	3	4	3
Attorney, lawyer	390 000	445 000	585 000	600 000	620 000	880 000	5	7	4	4	5	4
General medical practitioner	405 000	460 000	555 000	585 000	620 000	870 000	4	5	6	5	5	5
Quantity surveyor	465 000	485 000	570 000	570 000	630 000	835 000	1	3	5	7	4	6
Dentist	375 000	435 000	510 000	575 000	600 000	800 000	6	8	8	6	6	7
Veterinarian	315 000	345 000	415 000	470 000	515 000	785 000	9	11	11	12	9	8
Architect	390 000	450 000	515 000	535 000	545 000	760 000	5	6	7	9	7	9
Pharmacist	315 000	375 000	445 000	490 000	540 000	725 000	9	10	9	11	8	10
Land surveyor	360 000	450 000	510 000	455 000	490 000	680 000	7	6	8	13	10	11
Farmer	-	305 000	420 000	495 000	470 000	650 000	-	12	10	10	11	12

- Data not available

TABLE 10.3
COMPARISON OF PROFITABILITY OF FIELDS OF STUDY (1979 TO 1981) OF EMPLOYEES
WITH A B. DEGREE AS HIGHEST QUALIFICATION

Field of study	Cash value in Rands at the expected in- come discounted at 0 % per annum		Rank order of profitability	
	1979	1981	1979	1981
B.Com. degree	465 000	650 000	1	1
B.Sc. degree	460 000	640 000	2	2
B.A. degree	390 000	540 000	3	3

TABLE 10.4
COMPARISON OF PROFITABILITY OF FIELDS OF STUDY (1979 TO 1981) OF EMPLOYEES
WITH A B.HONS. OR HIGHER DEGREE

Field of study	Cash value in Rands of the expected in- come discounted at 0 % per annum		Rank order of profitability	
	1979	1981	1979	1981
Business economics	475 000	690 000	2	1
Economics	510 000	690 000	1	1
Chemistry	455 000	665 000	3	2
Physics	455 000	665 000	3	2
Psychology	415 000	595 000	4	3

(i) Teacher, headmaster: The data for all graduate teachers and headmasters employed in primary and secondary schools were grouped together to make comparison in 1981 possible.

(ii) Economist, business economist: This includes the data for the economist and the business economist.

(iii) Graduate engineer: This includes the data for the different branches such as civil, electrical and mechanical engineers.

Since 1979 the insurance agent in the case of employees holds first place in the profitability rank order and the medical specialist second place. The position of the general medical practitioner in the rank order improved from sixth to third position in the period 1979 to 1981 (Table 10.1), mainly because of overtime pay.

The position of the chartered accountant dropped from first position in 1977 to fifth position in 1981.

The positions of the graduate engineer, quantity surveyor, architect and land surveyor show an improvement in the rank order in the period 1979 to 1981, a period of high economic growth.

Since 1973 there has been a consistent deterioration in the position of the lecturer and teacher/headmaster. The position of the teacher, for example, dropped from tenth position in 1973 to the last position in the rank order in 1981. What the effect of the April increases will be, is unknown.

In the case of self-employed persons, the positions of the medical specialist and graduate engineer improved from second to first position and from third to second position in the rank order (Table 10.2).

The position of the chartered accountant dropped from first position to third position in the period 1979 to 1981.

Since 1971 the rank order position of pharmacists, architects, veterinarians and land surveyors has remained relatively low. Furthermore, the position of the architect has deteriorated since 1973.

The cash values in Table 10.1 to 10.4 show a considerable rise in the period 1979 to 1981. Increases in the cash value of as much as 40% are common. Although the additional earnings (see Par. 10(a)) may be responsible for part of the rise in income, a larger percentage of the rise can be attributed to a high growth in the GDP (Gross Domestic Product) of at least part of the period, and this reflects the demand for high-level manpower.

According to Table 10.3 the positions in the rank order in 1981 of employees with a B.A., B.Com. or B.Sc. degree as highest qualification remained the same as in 1979.

Table 10.4 shows that the position of employees with a B.Hons. or higher degree in business economics improved from second to first position in 1981.

11 PROFITABILITY IF WORKING HOURS ARE TAKEN INTO CONSIDERATION

It is known that the number of working hours a worker devotes to the pursuit of his occupation has an effect on his income. In this chapter the effect of working hours on the profitability rank order is calculated and the rank order adjusted.

The calculation is done only for self-employed persons since the income of this group is affected by the number of hours worked. A self-employed person could increase his income by working more hours every week and thus increasing services rendered, whereas this is usually not the case with an employee. The calculation is done only for respondents who supplied the information on working hours and weeks.

In the questionnaire respondents were asked to indicate the number of hours a week (i.e. office hours, overtime and after hours) normally devoted to occupational activities for financial gain. Since leave benefits can also affect working hours, respondents were asked to indicate the number of working weeks per annum normally devoted to occupational activities. By using the indicated working hours and working weeks, the working hours per annum of respondents were calculated (working hours x working weeks) so that the working hours of respondents were comparable.

The following procedure is followed to adjust a respondent's income:

The median working hours per annum was calculated for the 13 occupations jointly, namely 2 444 hours. The income per hour was completed for every individual in every occupation (with the aid of the indicated income and working hours) and multiplied by 2 444 hours which results in the adjusted income per annum. For example, the adjusted income per annum of a person who indicated that he earned R20 000 p.a. and worked 2 600 hours, is R18 800 $((20\ 000 \div 2\ 600) \times 2\ 444 = R18\ 800)$.

Table 11.1 shows the median income per age group for the occupations before the income was adjusted and Table 11.2 shows the adjusted median income per age group. It is clear that persons in some occupations work far more hours per week than others. For example, the income of the medical specialist in Table 11.1 is higher than his adjusted income in Table 11.2.

The profitability of the occupations was again calculated as previously explained. The cash values of the expected income flows discounted at rates of interest 0 % to 16 %, are shown in Tables 11.3 and 11.4. Table 11.5 shows the profitability rank order of the occupations before and after adjustment of income. It will be noted that the rank order before adjustment given in Table 11.5 differs slightly from the rank order given in Table 9.6 because the information in Table 11.5 refers only to respondents who supplied the information on working hours.

The adjusted rank order shows that the position of the chartered accountant has improved from fourth to first position and the position of the medical specialist has dropped from first to third position. The chartered accountant receives the highest payment per hour but the medical specialist works far more hours per week than the accountant and therefore earns more.

The position of the general medical practitioner has dropped from fourth to tenth position.

TABLE 11.1
 MEDIAN INCOME (R.P.A.) OF SELF-EMPLOYED PERSONS IN 1981 BEFORE TAKING WORKING HOURS INTO CONSIDERATION BY OCCUPATION
 AND AGE

Occupation		Age									Total
		20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	
Accountant (r/c/FQC)	N	1	43	193	233	182	149	100	97	62	1 060
	Me	-	21 000	27 000	30 000	33 500	38 000	34 750	30 000	35 000	30 000
Advocate	N	-	12	25	17	20	15	10	10	8	117
	Me	-	15 140	26 000	40 000	35 500	40 000	45 000	44 000	16 900	32 280
Architect	N	-	5	31	34	65	66	66	51	39	357
	Me	-	17 200	21 500	24 000	30 000	28 000	29 500	27 000	24 000	26 000
Attorney, lawyer	N	-	45	202	191	148	133	122	85	57	983
	Me	-	17 000	25 000	34 000	36 000	35 000	31 000	30 000	30 000	30 000
Civil engineer	N	1	10	29	44	73	52	50	38	17	314
	Me	-	25 830	30 000	31 940	35 000	32 000	35 500	35 850	30 000	34 000
Dentist	N	-	27	46	27	28	51	40	28	23	270
	Me	-	24 000	30 000	28 000	24 500	30 000	24 400	27 930	24 000	26 000
Farmer	N	8	93	96	117	86	59	46	42	35	582
	Me	9 100	10 900	20 000	20 000	20 000	23 420	23 000	20 000	20 000	18 650
General medical practitioner	N	-	19	115	116	100	71	95	122	75	713
	Me	-	30 000	33 000	33 520	31 000	35 000	34 000	30 000	27 000	32 000
Land surveyor	N	-	4	10	5	11	17	27	13	13	100
	Me	-	-	24 700	20 000	21 000	22 000	20 000	20 000	21 150	20 090
Medical specialist (all fields)	N	-	-	12	58	59	60	69	66	42	366
	Me	-	-	46 450	45 000	48 000	46 800	42 000	40 200	32 930	42 850
Pharmacist	N	-	22	90	93	73	84	61	49	16	488
	Me	-	22 500	24 800	22 000	24 000	25 000	24 000	20 000	21 020	24 000
Quantity surveyor	N	-	9	54	35	36	43	25	27	17	246
	Me	-	17 400	25 000	29 000	24 000	30 000	35 000	30 000	35 000	26 700
Veterinarian	N	-	16	28	40	13	7	8	2	3	117
	Me	-	19 500	20 000	29 000	23 000	25 000	30 200	-	-	25 000

TABLE 11.2

ADJUSTED MEDIAN INCOME (R.P.A.) IN 1981 OF SELF-EMPLOYED PERSONS BY OCCUPATION AND AGE

Occupation		Age									Total
		20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	
Accountant (r/c/FQC)	N	1	43	193	233	182	149	100	97	62	1 060
	Me	-	25 000	31 330	35 760	38 410	41 780	41 000	36 720	48 180	36 560
Advocate	N	-	12	25	17	20	15	10	10	8	117
	Me	-	16 730	24 030	31 330	33 070	33 570	47 480	43 640	18 060	30 760
Architect	N	-	5	31	34	65	66	66	51	39	357
	Me	-	16 490	19 180	25 420	30 760	29 320	32 420	30 650	27 510	28 810
Attorney, lawyer	N	-	45	202	191	148	133	122	85	57	983
	Me	-	17 760	26 160	34 270	36 080	39 170	35 230	36 780	35 250	33 390
Civil engineer	N	1	10	29	44	73	52	50	38	17	314
	Me	-	28 440	31 940	36 970	36 560	35 830	38 810	40 870	39 170	36 640
Dentist	N	-	27	46	27	28	51	40	28	23	270
	Me	-	30 000	31 780	33 570	31 130	34 180	29 380	30 910	27 950	31 800
Farmer	N	8	93	96	117	86	59	46	42	35	582
	Me	8 650	8 400	15 670	14 690	16 030	18 800	17 230	18 680	19 140	14 710
General medical practitioner	N	-	19	115	116	100	71	95	122	75	713
	Me	-	21 570	25 180	25 800	24 450	26 350	26 980	25 220	23 500	25 180
Land surveyor	N	-	4	10	5	11	17	27	13	13	100
	Me	-	-	24 750	22 930	28 400	26 440	22 500	23 500	17 440	23 270
Medical specialist (all fields)	N	-	-	12	58	59	60	69	66	42	366
	Me	-	-	43 080	37 500	38 340	40 870	37 600	39 170	34 740	39 070
Pharmacist	N	-	22	90	93	73	84	61	49	16	488
	Me	-	18 700	21 060	18 950	21 490	21 170	21 100	20 000	19 980	20 580
Quantity surveyor	N	-	9	54	35	36	43	25	27	17	246
	Me	-	19 050	27 630	27 030	25 120	34 910	33 940	34 910	35 760	29 460
Veterinarian	N	-	16	28	40	13	7	8	2	3	117
	Me	-	20 820	17 070	23 890	20 830	23 500	21 600	-	-	22 560

TABLE 11.3

CASH VALUE OF THE EXPECTED INCOME (RAND) OF SELF-EMPLOYED PERSONS BEFORE TAKING WORKING HOURS INTO CONSIDERATION BY OCCUPATION AND VARIOUS DISCOUNT RATES

OCCUPATION	DISCOUNT RATES									
	0 %	2 %	4 %	6 %	8 %	10 %	12 %	14 %	16 %	
ACCOUNTANT(R/C/FQC)	923606	566292	366289	248521	175689	128523	96669	74335	58157	
ADVOCATE	923685	556511	349530	227603	152705	104868	73211	51587	36398	
ARCHITECT	762897	460981	291897	192506	131304	91951	65634	47411	34407	
ATTORNEY,LAWYER	873949	530681	338034	224587	154622	109571	79402	58482	43526	
CIVIL ENGINEER	952464	592230	388795	267766	192059	142433	108498	84410	66752	
DENTIST	797181	492401	319553	216374	151711	109332	80425	60011	45159	
FARMER	643083	392274	251499	168452	117051	83774	61331	45634	34302	
GENERAL MEDICAL PRACTITIONER	881172	537403	342955	227458	155611	108987	77570	55696	40035	
LAND SURVEYOR	685130	429752	284429	197166	142007	105455	80191	62078	48682	
MEDICAL SPECIALIST	1010672	601745	372706	238599	156735	104822	70761	47738	31770	
PHARMACIST	733603	461578	306200	212649	153425	114158	87027	67594	53239	
QUANTITY SURVEYOR	845092	510718	325409	217323	151059	108481	79924	60025	45692	
VETERINARIAN	774378	464360	292556	192402	131087	91790	65537	47347	34339	

TABLE 11.4

CASH VALUE OF THE EXPECTED ADJUSTED INCOME (RAND) OF SELF-EMPLOYED PERSONS
BY OCCUPATION AND VARIOUS DISCOUNT RATES

OCCUPATION	DISCOUNT RATES								
	0 %	2 %	4 %	6 %	8 %	10 %	12 %	14 %	16 %
ACCOUNTANT (R/C/FQC)	1050379	641089	413543	280323	198298	145341	109637	84621	66496
ADVOCATE	889236	532393	332883	216153	144820	99424	69444	48980	34600
ARCHITECT	793366	474606	297601	194459	131494	91342	64698	46380	33391
ATTORNEY, LAWYER	933745	562310	355597	234840	160912	113619	82127	60391	44912
CIVIL ENGINEER	1040363	644530	422354	290862	208941	155392	118830	92890	73867
DENTIST	901010	558627	364135	247840	174829	126892	94135	70958	54064
FARMER	542818	326587	206651	136666	93761	66206	47740	34887	25643
GENERAL MEDICAL PRACTITIONER	730130	440192	277380	181380	122092	83885	58312	40621	28033
LAND SURVEYOR	747489	470699	311765	215741	154854	114492	86649	66759	52118
MEDICAL SPECIALIST	937505	554646	341840	217991	142721	95121	63933	42856	28229
PHARMACIST	664845	414622	272749	187936	134596	99437	75267	58028	45339
QUANTITY SURVEYOR	880267	531917	338939	226418	157454	113151	83441	62743	47836
VETERINARIAN	665198	405574	259483	172978	119202	84235	60566	43973	31988

TABLE 11.5

RANK ORDER OF PROFITABILITY OF OCCUPATIONS PRACTISED BY SELF-EMPLOYED PERSONS BEFORE AND AFTER ADJUSTMENTS OF INCOME BY CASH VALUE DISCOUNTED AT 0 % PER ANNUM

Rank order before adjustment	Rank order after adjustment	Occupation	Cash value (Rand) before adjustment	Adjusted cash value (Rand)
3	1	Accountant (r/c/FQC)	925 000	1 050 000
2	2	Civil engineer	950 000	1 040 000
1	3	Medical specialist	1 010 000	940 000
5	4	Attorney, lawyer	875 000	935 000
7	5	Dentist	795 000	900 000
3	6	Advocate	925 000	890 000
6	7	Quantity surveyor	845 000	880 000
9	8	Architect	765 000	795 000
11	9	Land surveyor	685 000	745 000
4	10	General medical practitioner	880 000	730 000
8	11	Veterinarian	775 000	665 000
10	11	Pharmacist	735 000	665 000
12	12	Farmer	645 000	545 000

In this investigation the profitability of a number of occupations and fields of study practised by graduates was determined as at 1 March 1981. Several other occupations and fields of study that were not included in the investigation could however change the present rank order if sufficient data for these occupations and fields of study were available for analysis.

When choosing an occupation, the relative profitability of that occupation is an important factor to take into consideration, but aspects such as conditions of work, aptitude, personality and many others should also be considered.

This report is one of a series on the wage structure of graduates. The other reports in the series are available from the HSRC and are the following:

- The wage structure of White male graduates in 1981 (MR-84)
Analyses on the wage structure of White men by occupation, employer sector, economic sector, et cetera are included. Analysis of the fringe benefits of employees is also included.
- The wage structure of White female graduates in 1981 (MR-86)
The wage structure of women in full-time and part-time posts is analyzed by occupation, employer, job experience, et cetera.
- The wage structure of Asian, Black and Coloured graduates in 1981 (MR-87)
Analyses on the wage structure by occupation, employer, economic sector, level of educational qualifications and fringe benefits are included.
- The wage structure of graduate engineers in 1981 (MR-85)
An extensive analysis on the wage structure of graduate engineers by branch of engineering, professional status, engineering field of study, et cetera is included in this report.

The profitability rank order of occupations and fields of study is not static because wages change. This study will be repeated as soon as the information on the wage structure of graduates has been updated.

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