Statistics for Management and Economics Abbreviated 10th edition Gerald Keller Solutions Manual

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Chapter 2

2.1 Nominal: Occupation, undergraduate major. Ordinal: Rating of university professor, Taste test ratings. Interval: age, income

2.2 a Interval

b Interval

c Nominal

d Ordinal

2.3 a Interval

b Nominal

c Ordinal

d Interval

e Interval

2.4 a Nominal

b Interval

c Nominal

d Interval

e Ordinal

2.5 a Interval

b Interval

c Nominal

d Interval

e Nominal

2.6 a Interval

b Interval

c Nominal

d Ordinal

e Interval

2.7 a Interval

b Nominal

c. Nominal

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d Interval

e Interval

f Ordinal

2.8 a Interval

b Ordinal

c Nominal

d Ordinal

2.9 a Interval

b Nominal

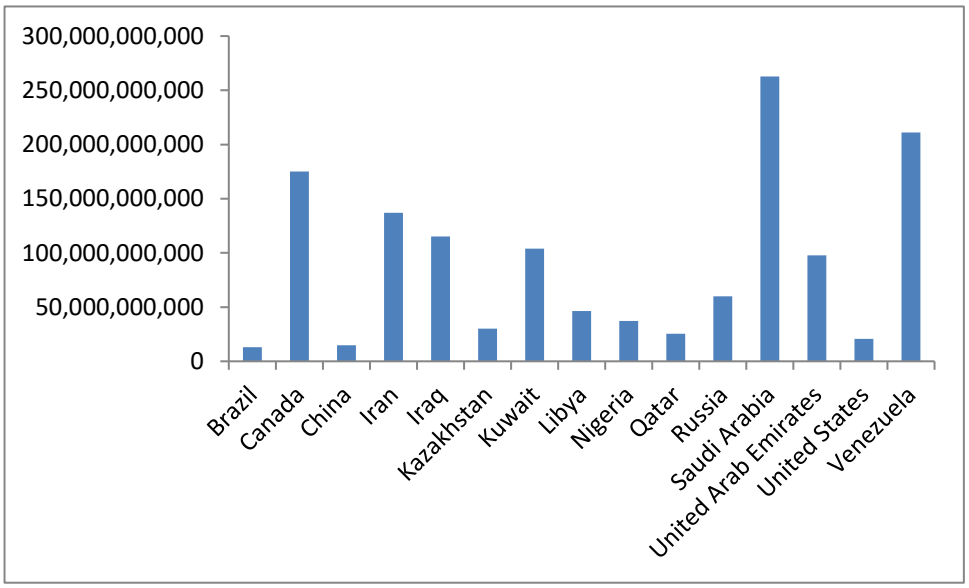
c Nominal

2.10 a Ordinal

b Ordinal

c Ordinal

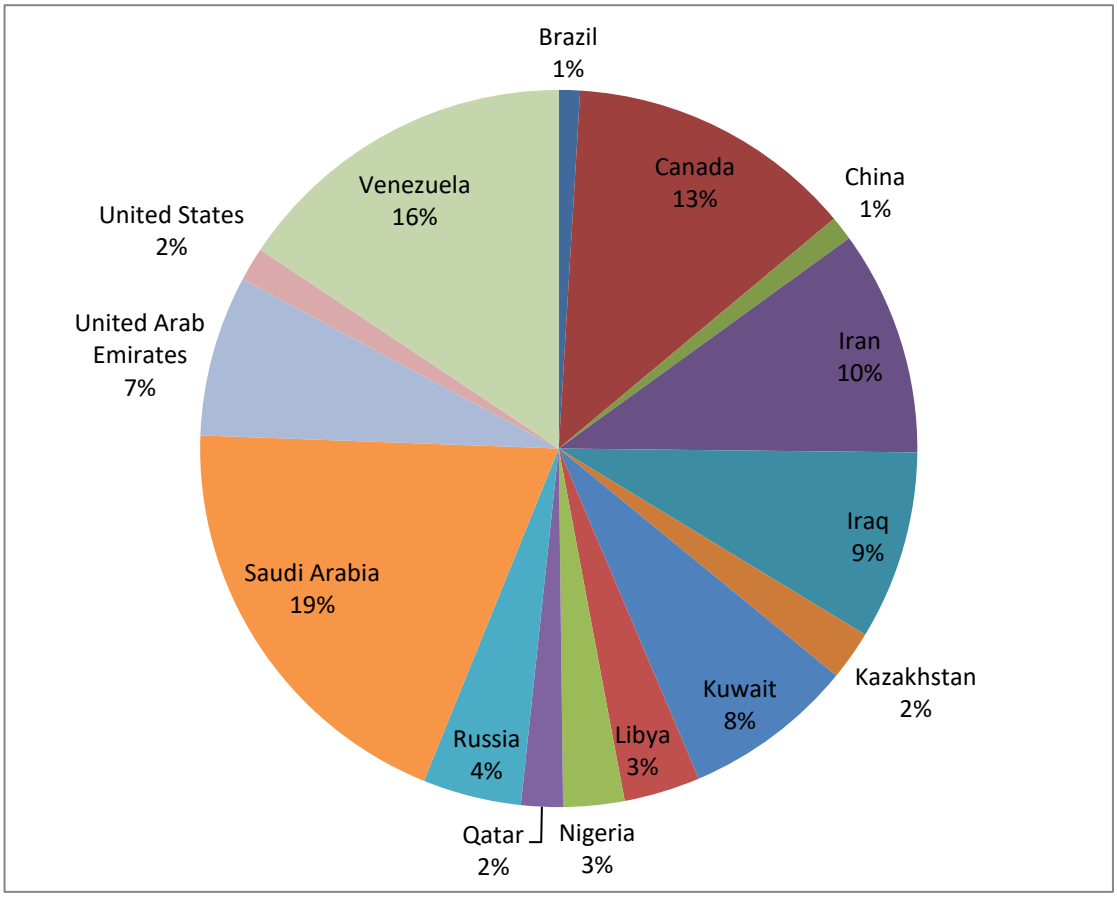
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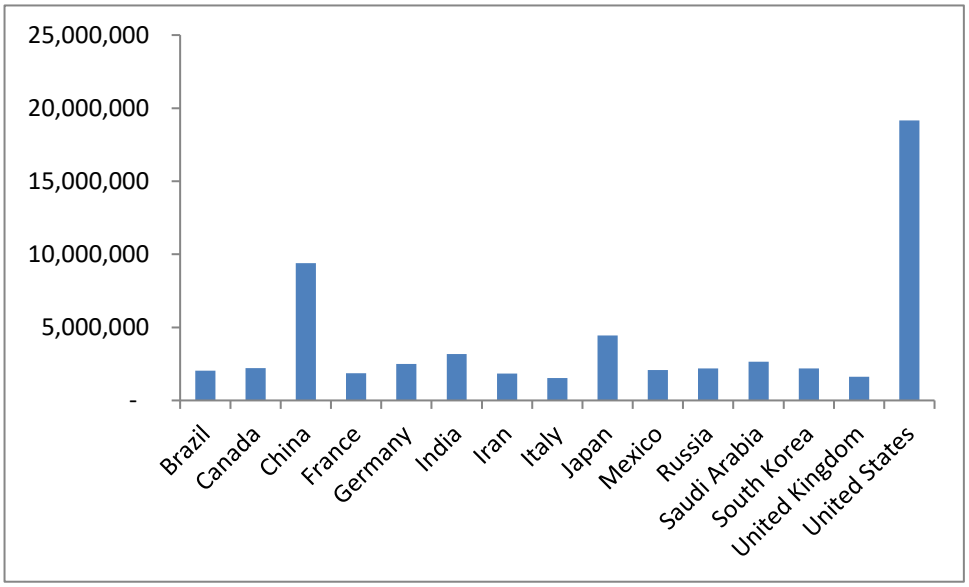
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2.12

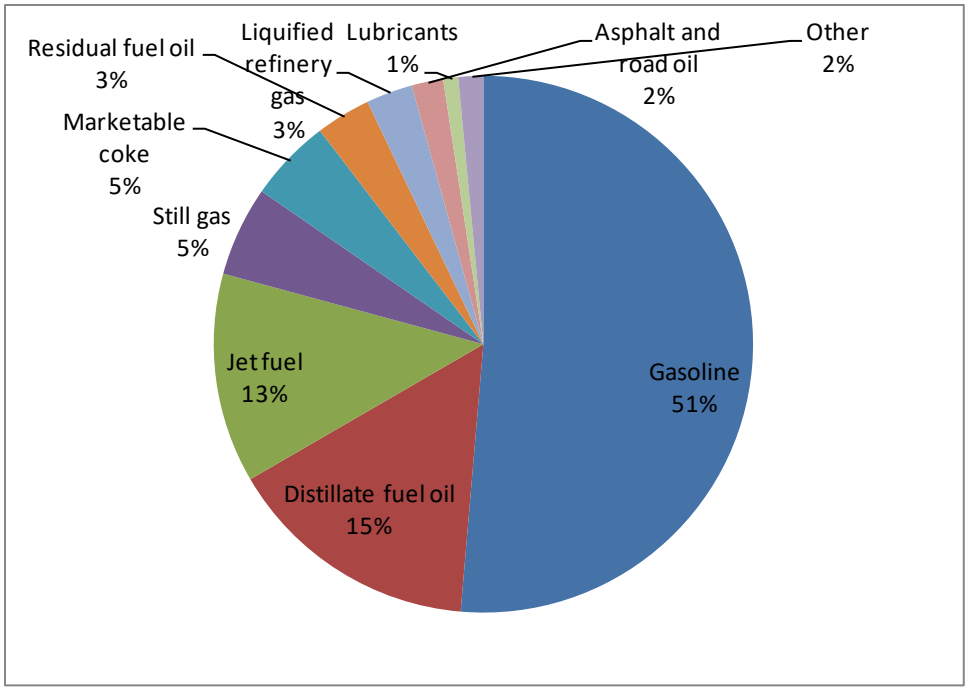


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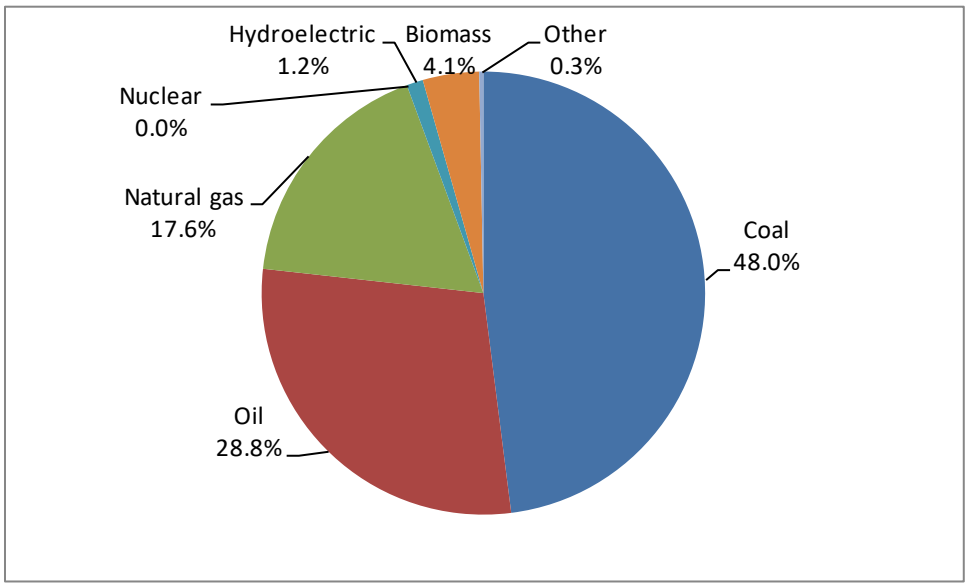


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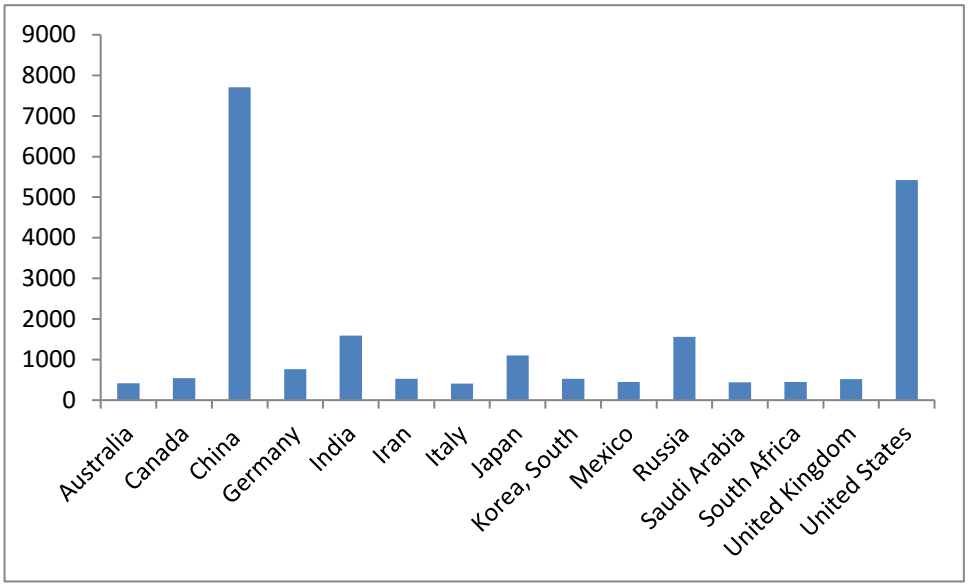


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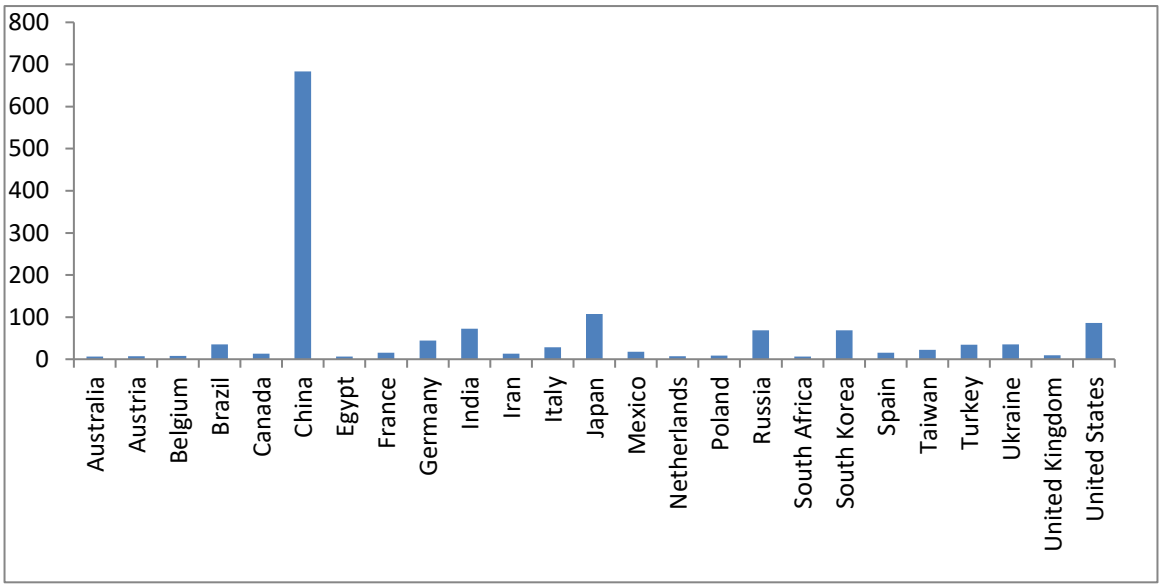


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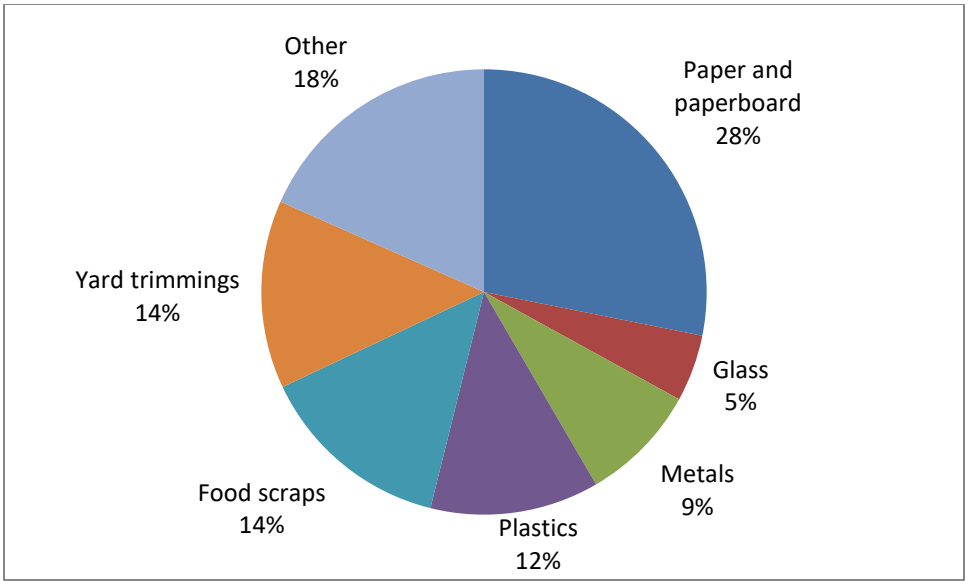
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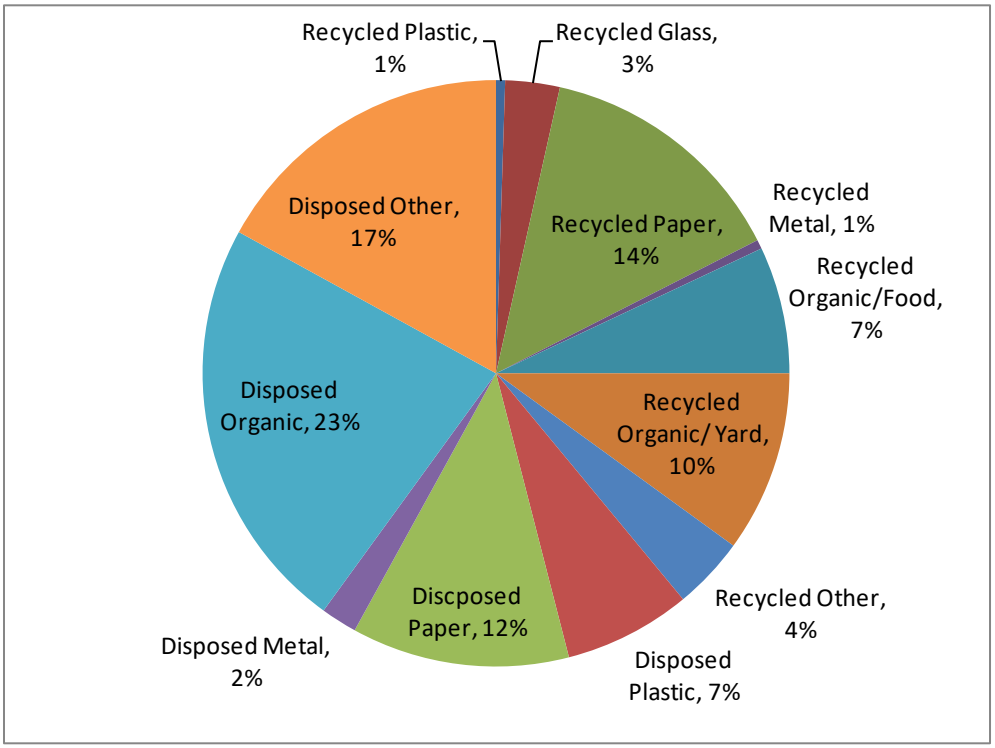
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2.18



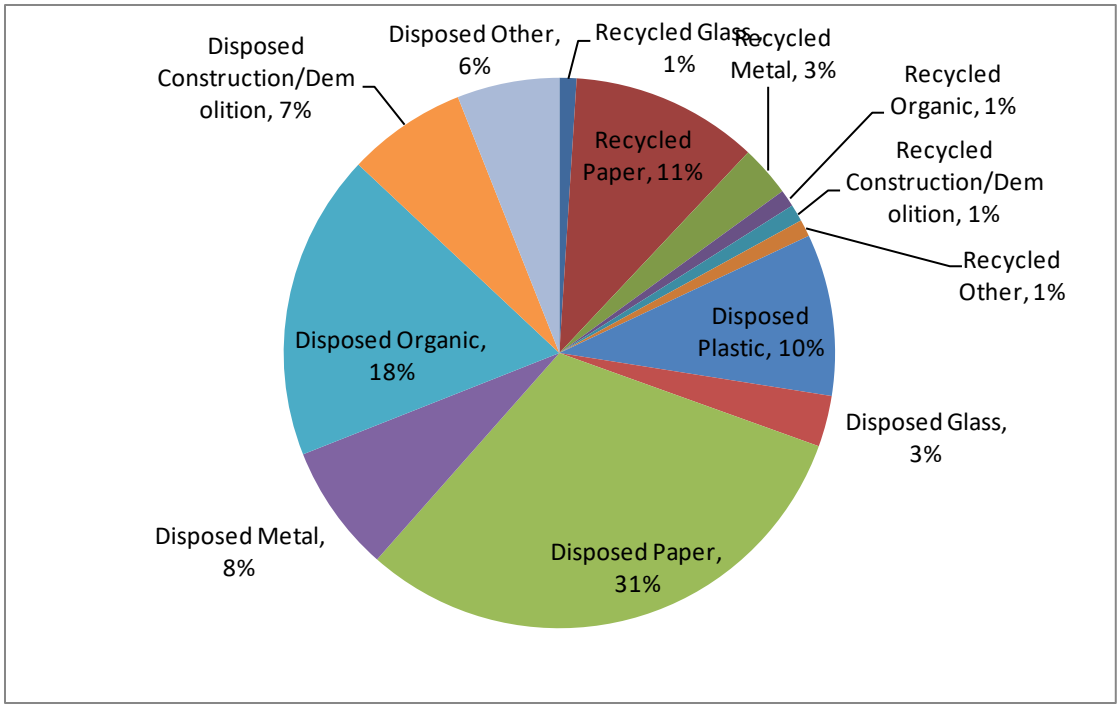
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Residential

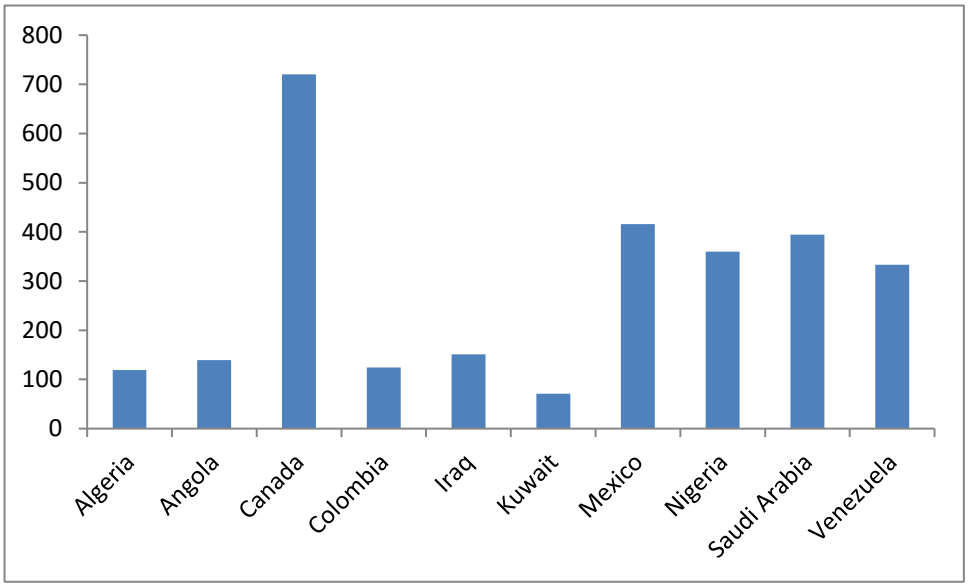


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Non-Residential

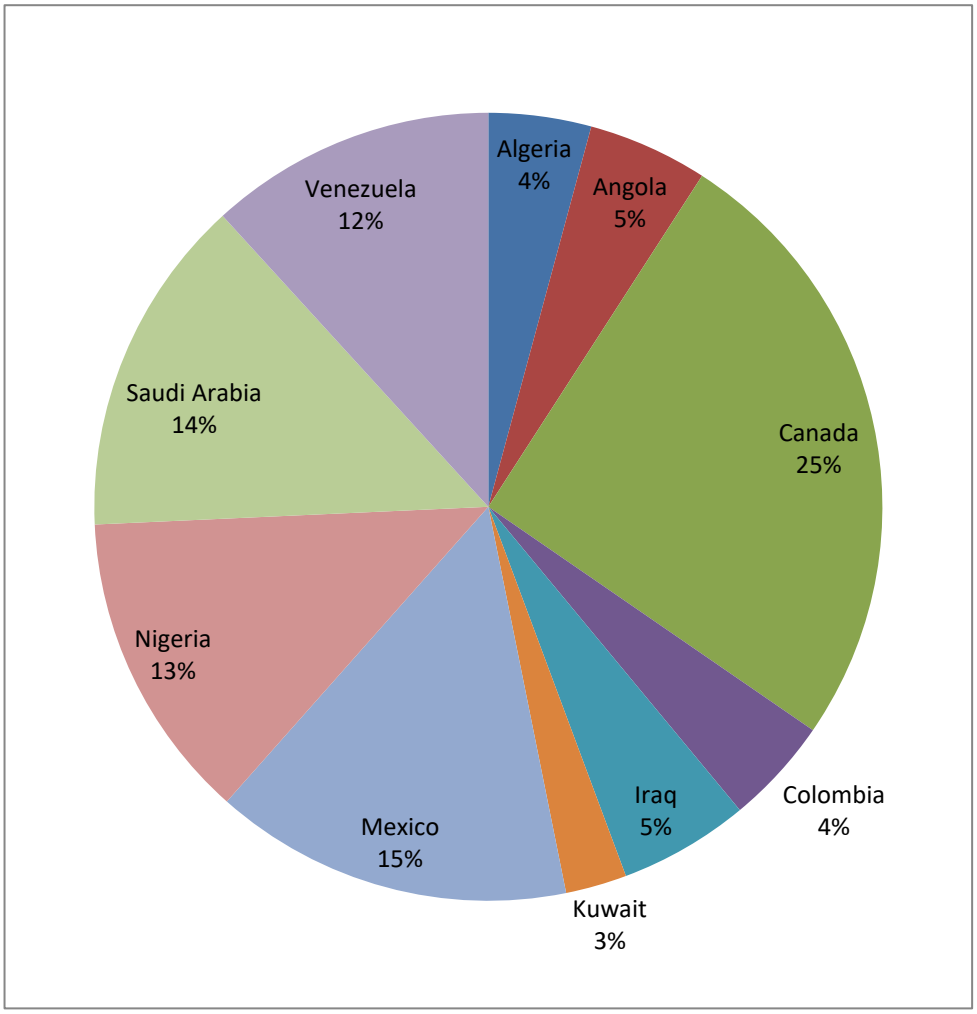


2.20 a.



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b.

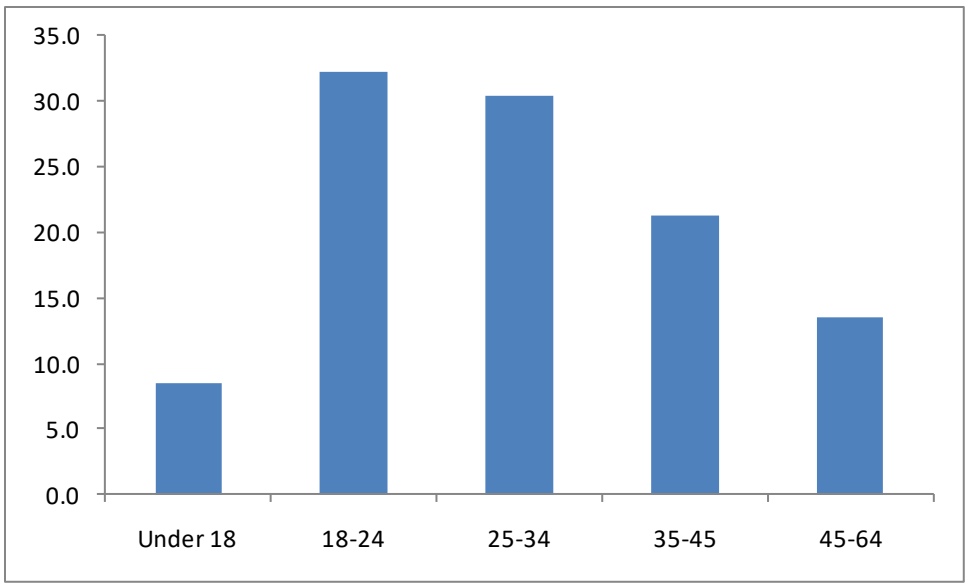


c. The bar chart provides the frequencies and the pie chart displays the relative frequencies.

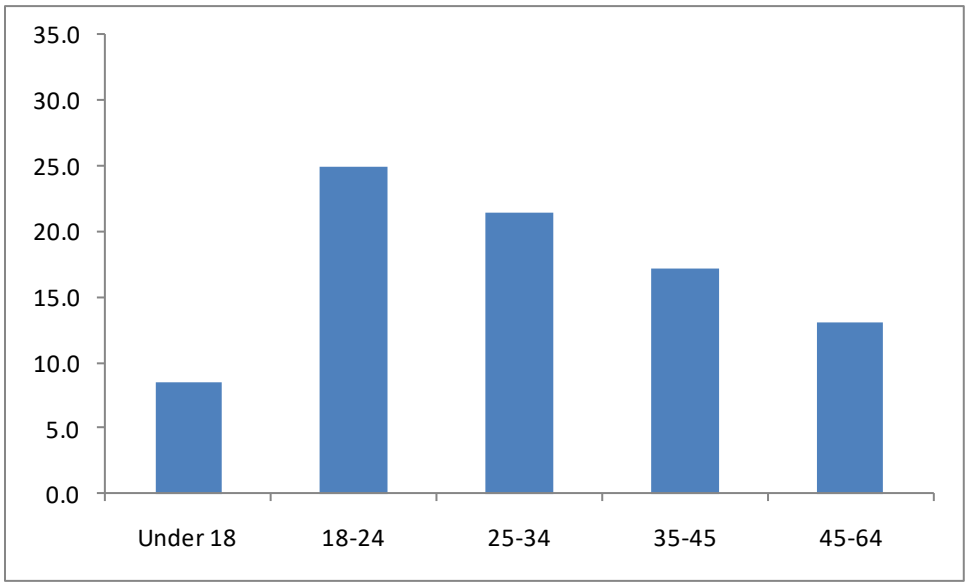
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2.21

Males



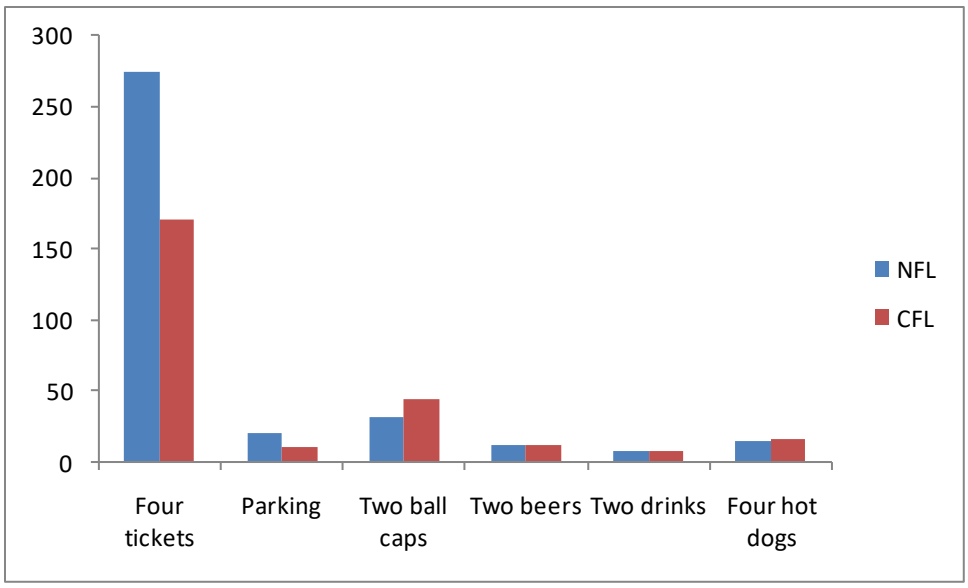
Females



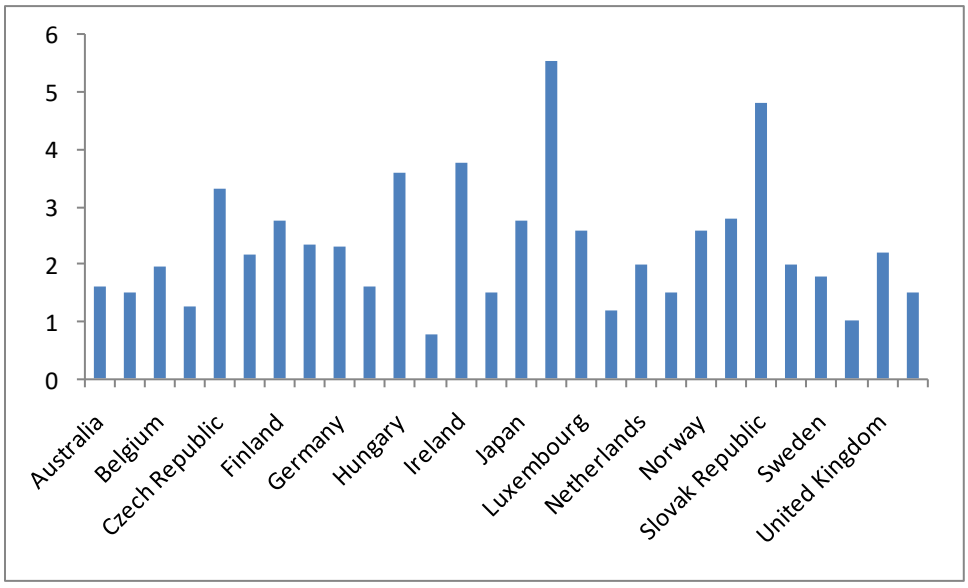
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2.22

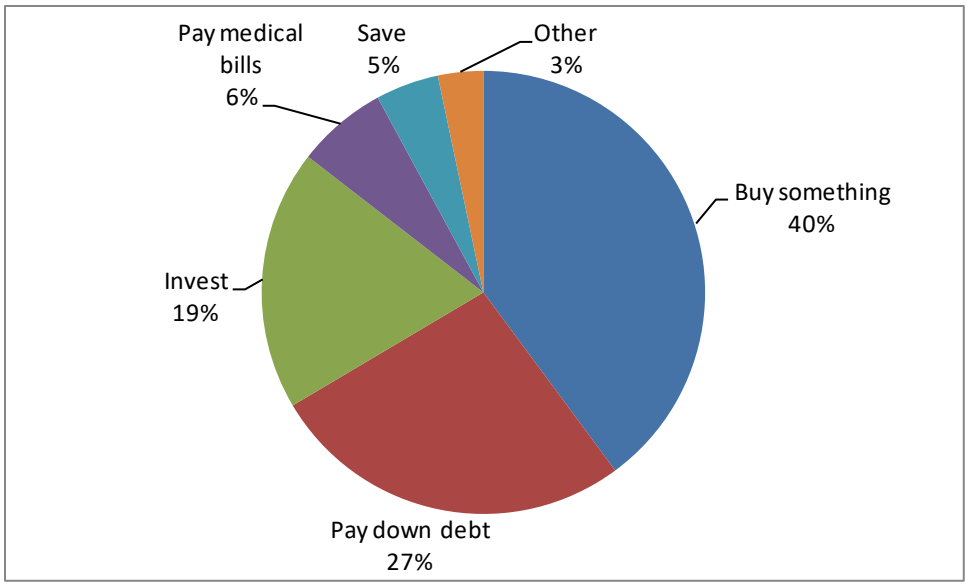


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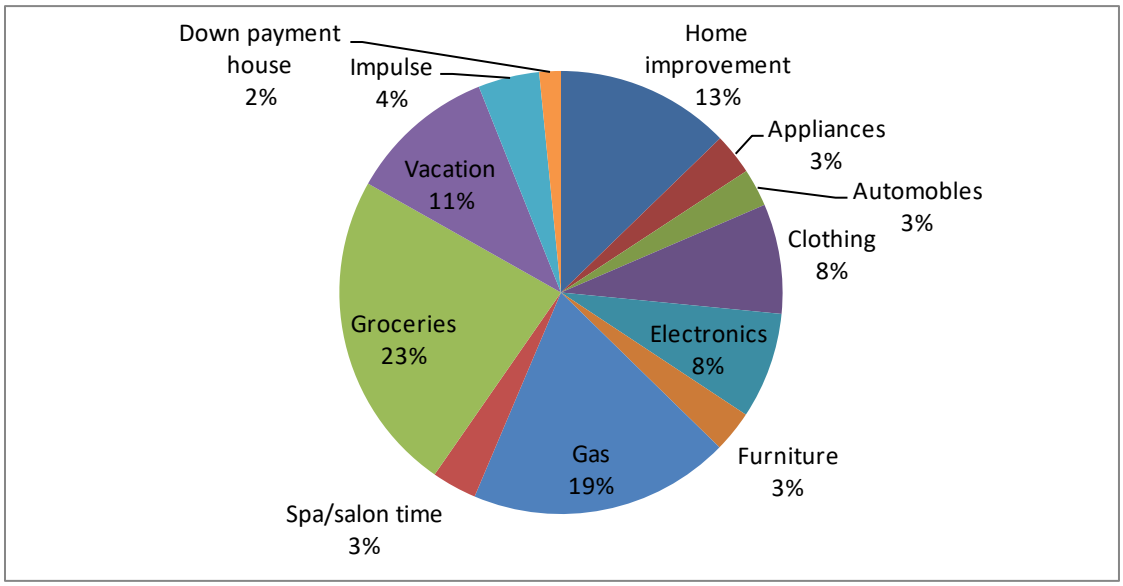


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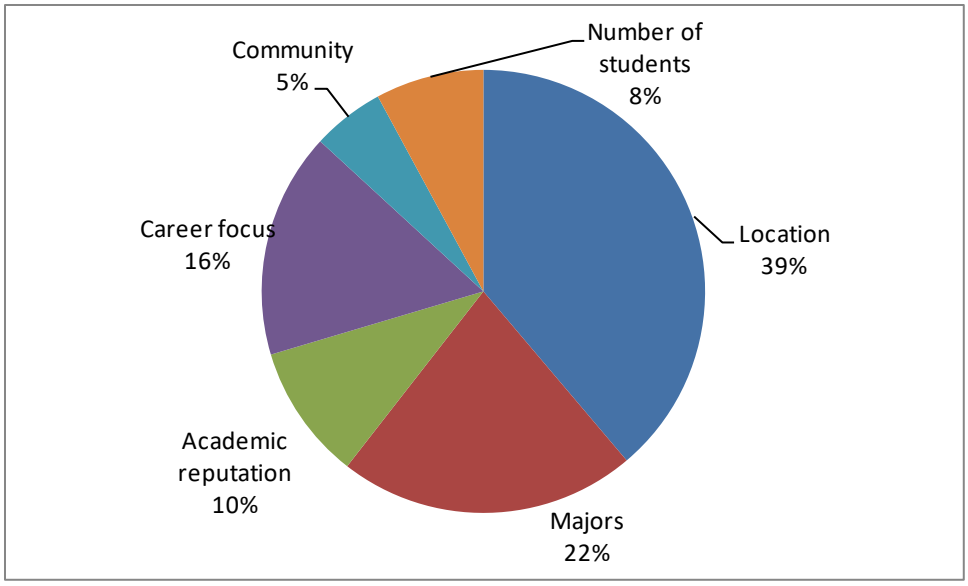


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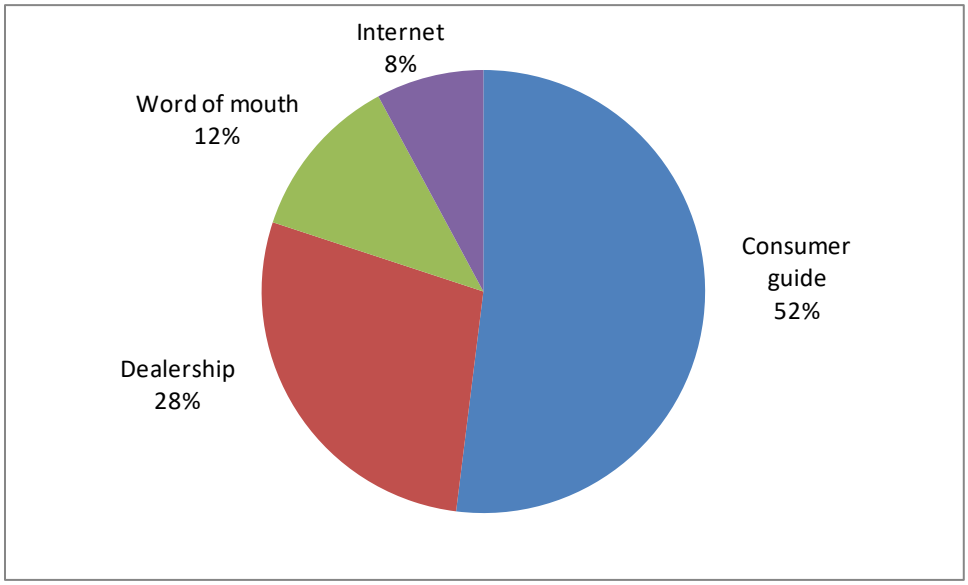


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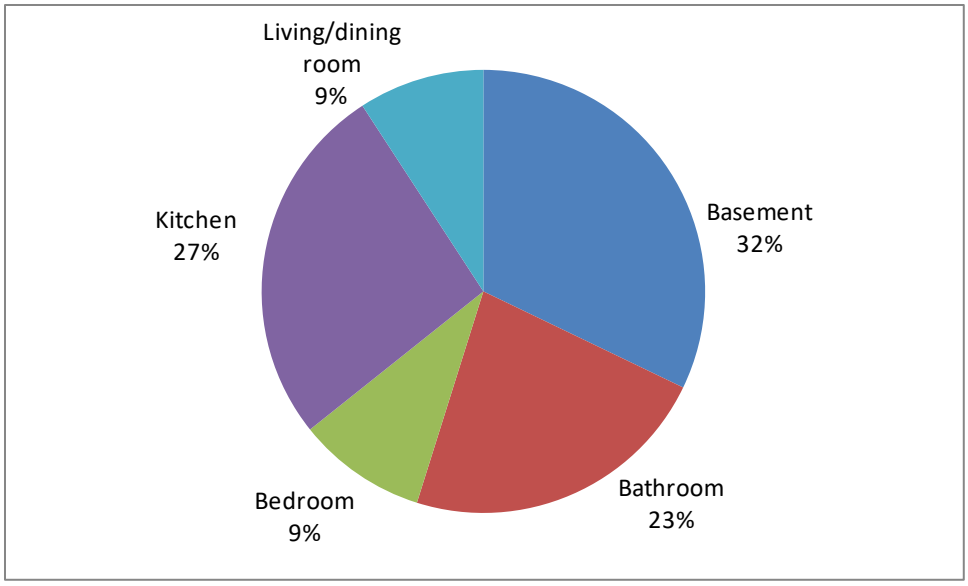


2.27



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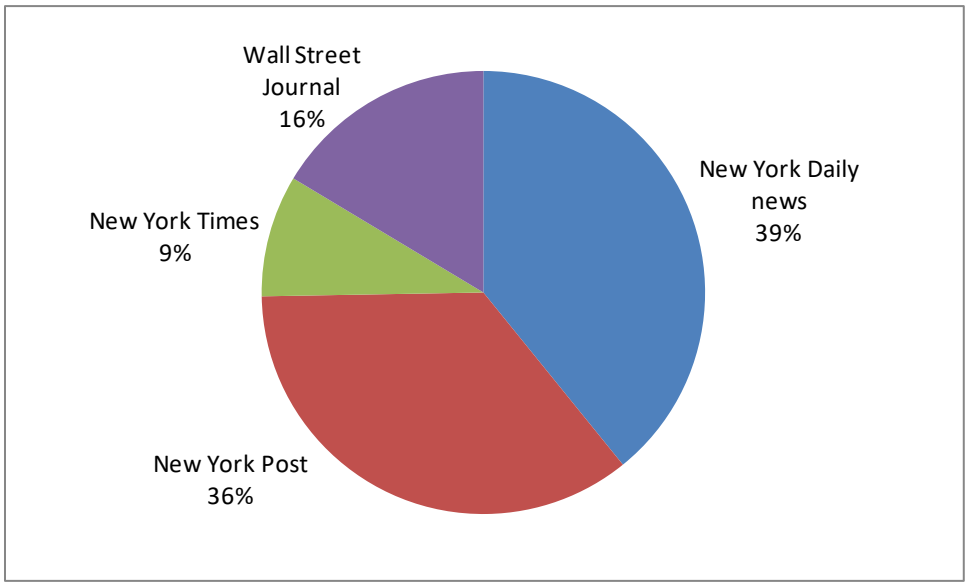
2.28



2.29 a

Newspaper	Frequency	Relative Frequency
Daily News	141	.39
Post	128	.36
Times	32	.09
WSJ	59	.16

b



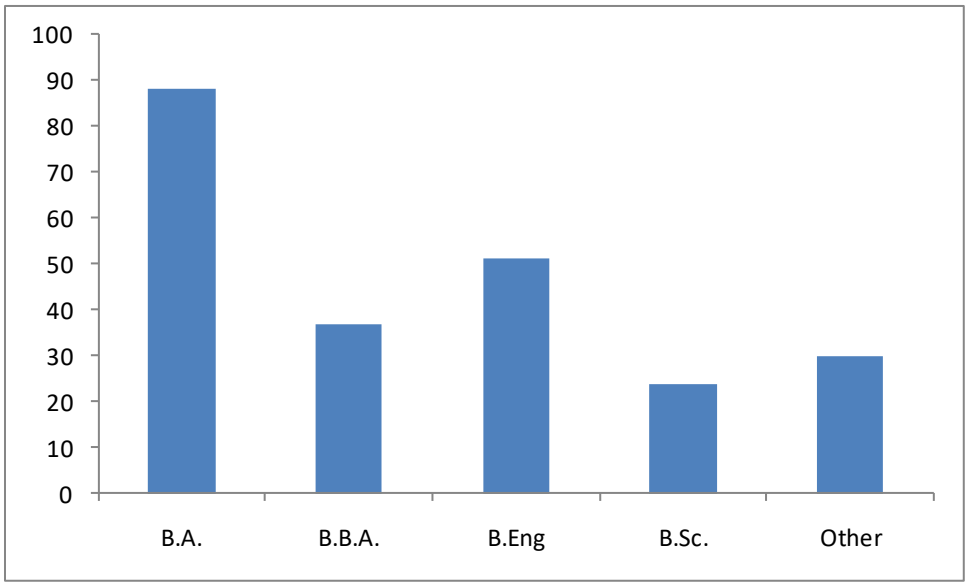
The Daily News and the Post dominate the market

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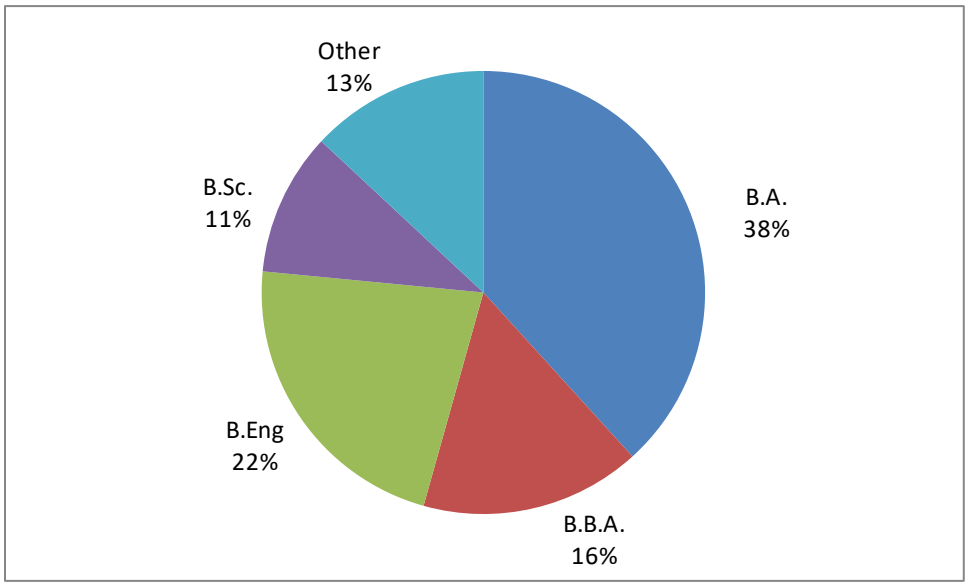
2.30a

Degree	Frequency
BA	88
BBA	37
B Eng	51
B Sc	24
Other	30

b.



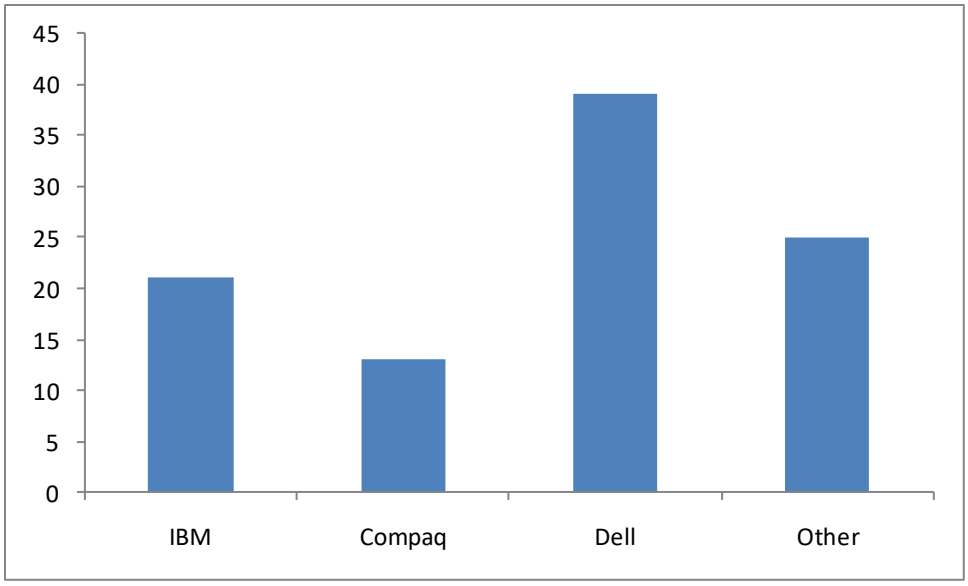
c



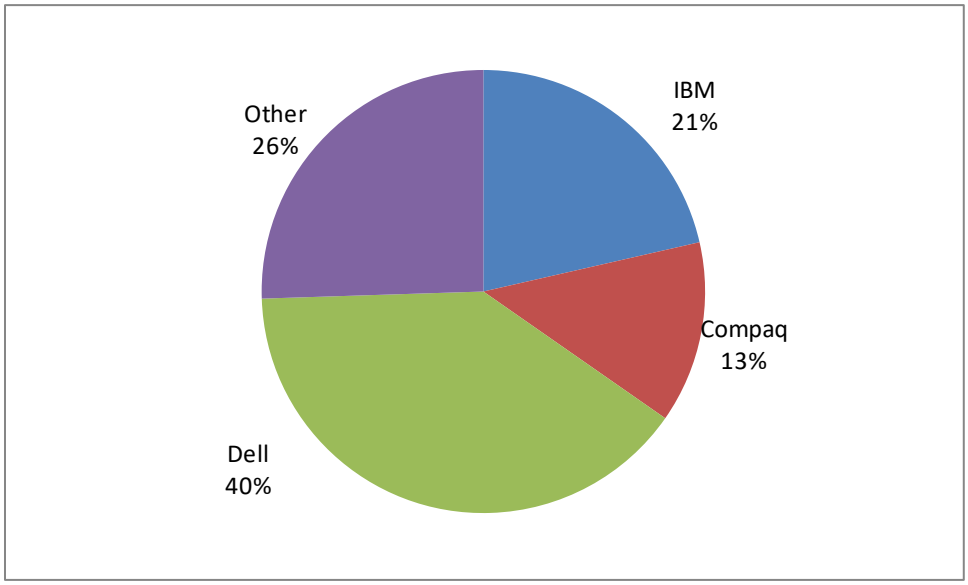
d. About 4 applicants in 10 have the BA degree, about one-fifth have a BEng. and one-sixth have a BBA.

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2.31a



b



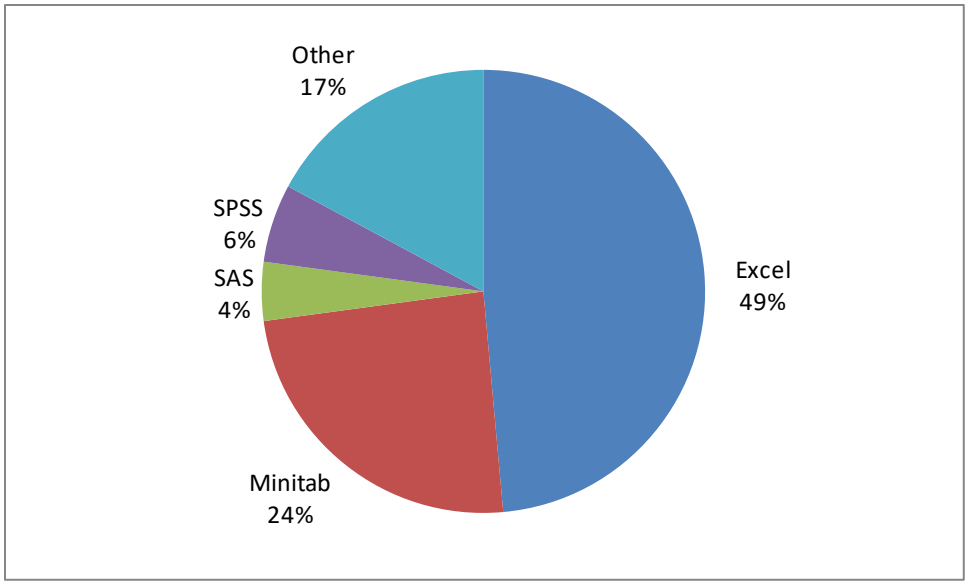
c Dell is most popular with 40% proportion, followed by other, 26%, IBM, 21% and Compaq, 13%.

2.32 a

Software	Frequency
Excel	34
Minitab	17
SAS	3
SPSS	4
Other	12

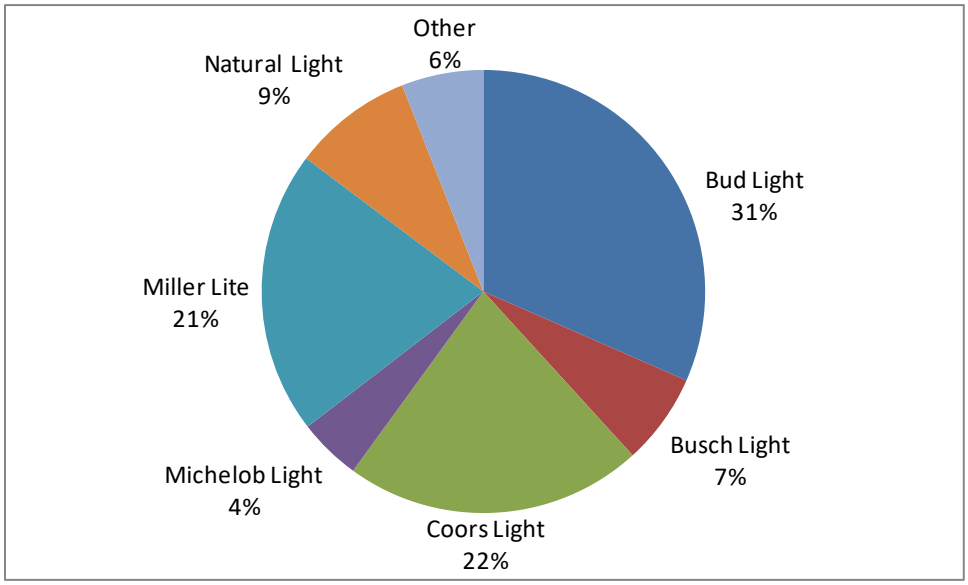
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b



c Excel is the choice of about half the sample, one-quarter have opted for Minitab, and a small fraction chose SAS and SPSS.

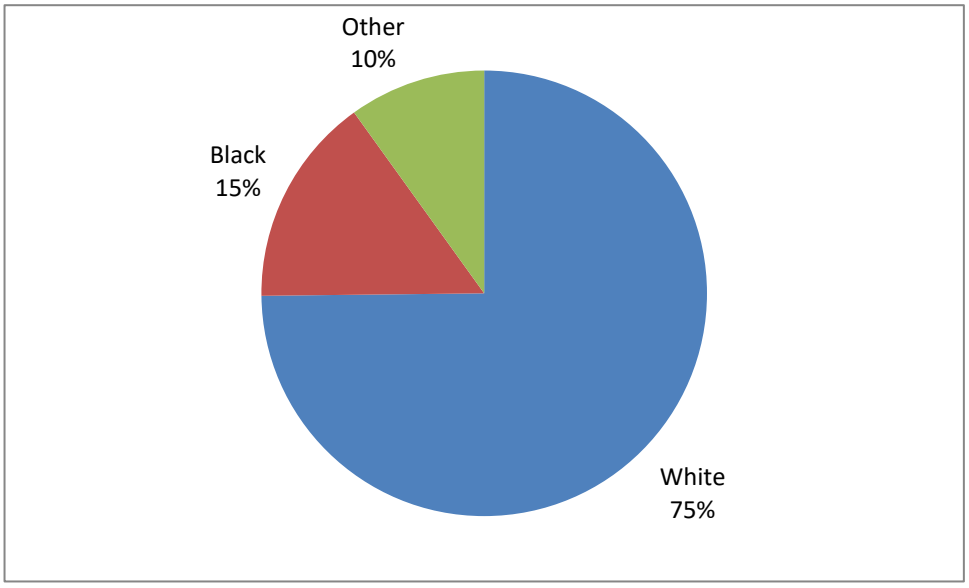
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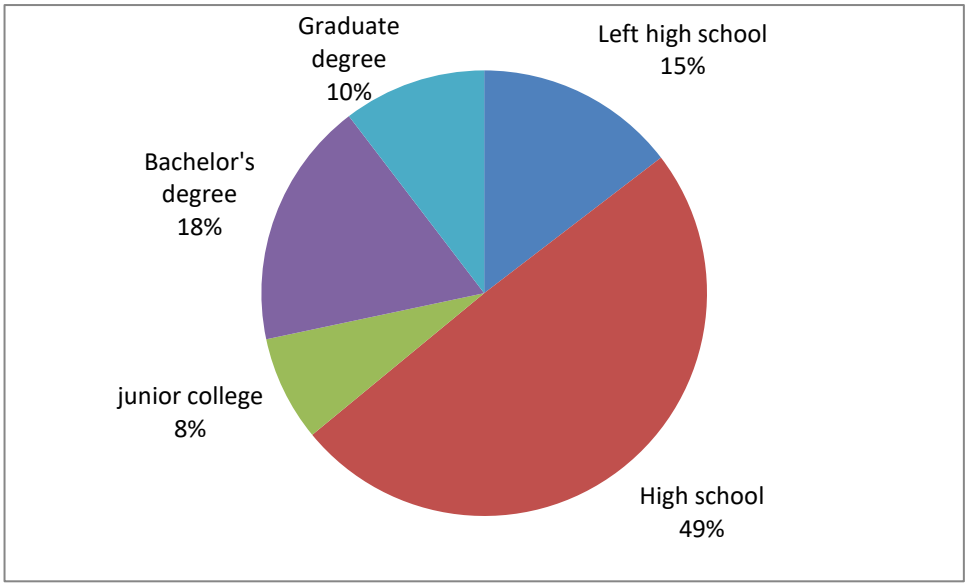
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2.34



Three out of four Americans are White. Note that the survey did not separate Hispanics.

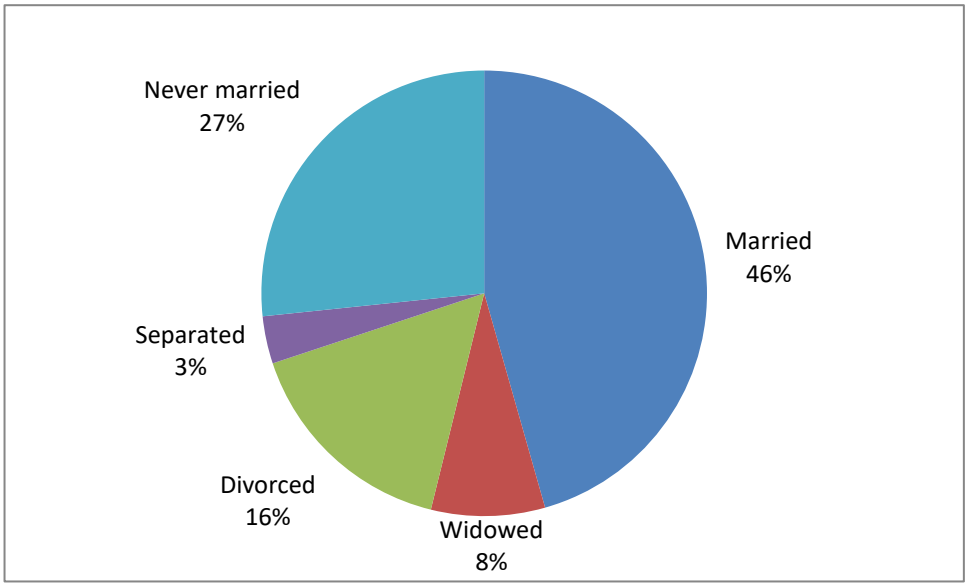
2.35



Half of American adults finished high school only. More than one-third received some kind of post-secondary education.

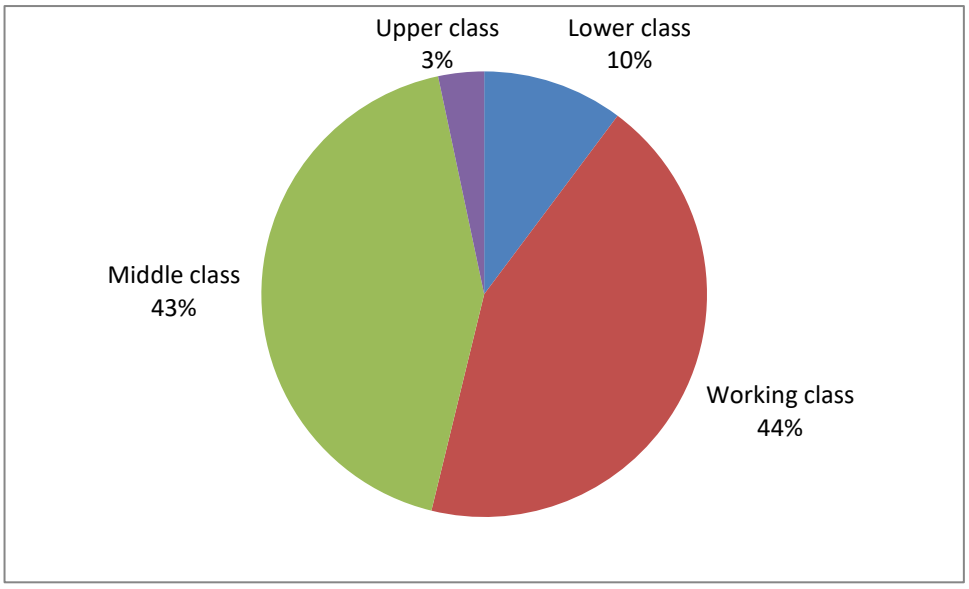
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2.36



Almost half the sample is married and about one out of four were never married.

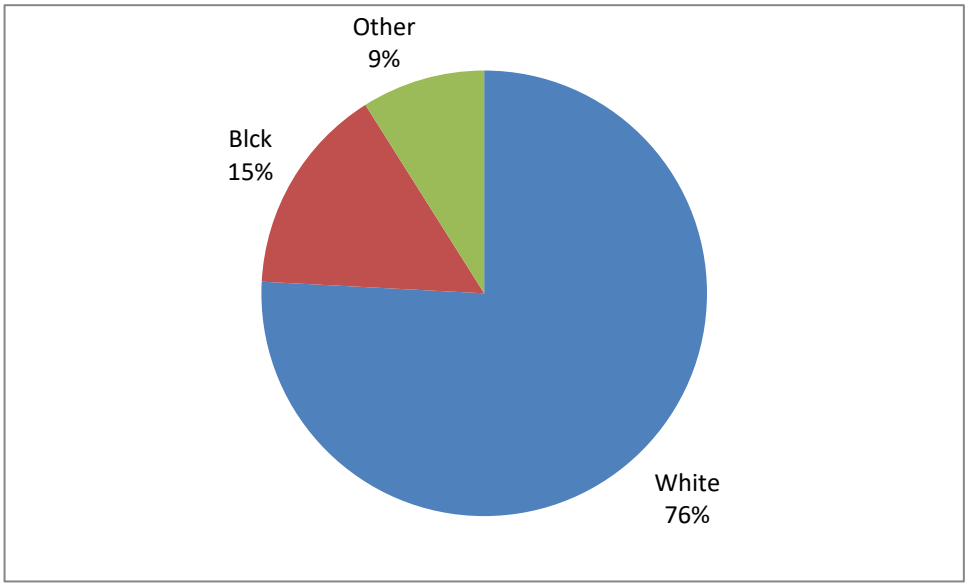
2.37



Nine of out of 10 Americans classify themselves as middle or working class.

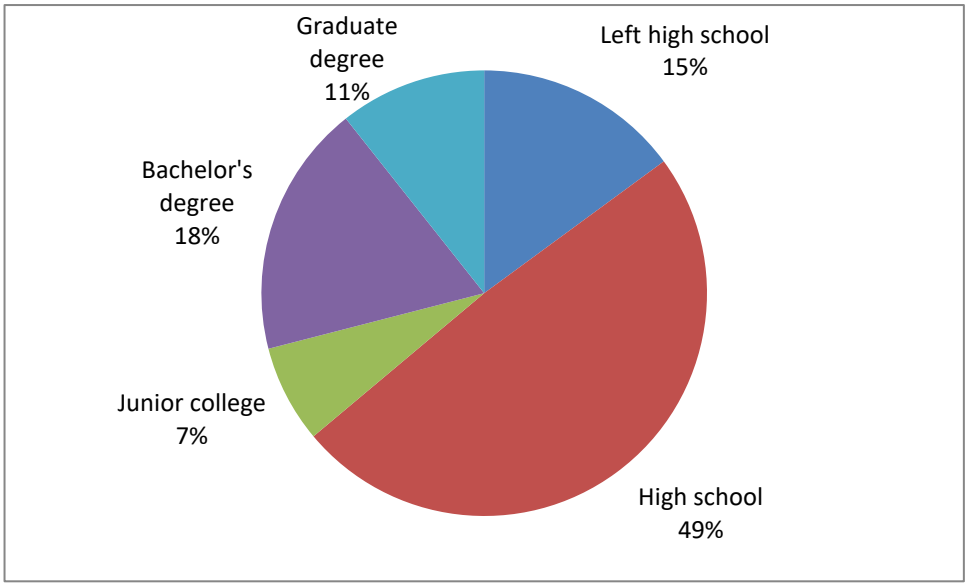
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2.38



Three out of four Americans are White.

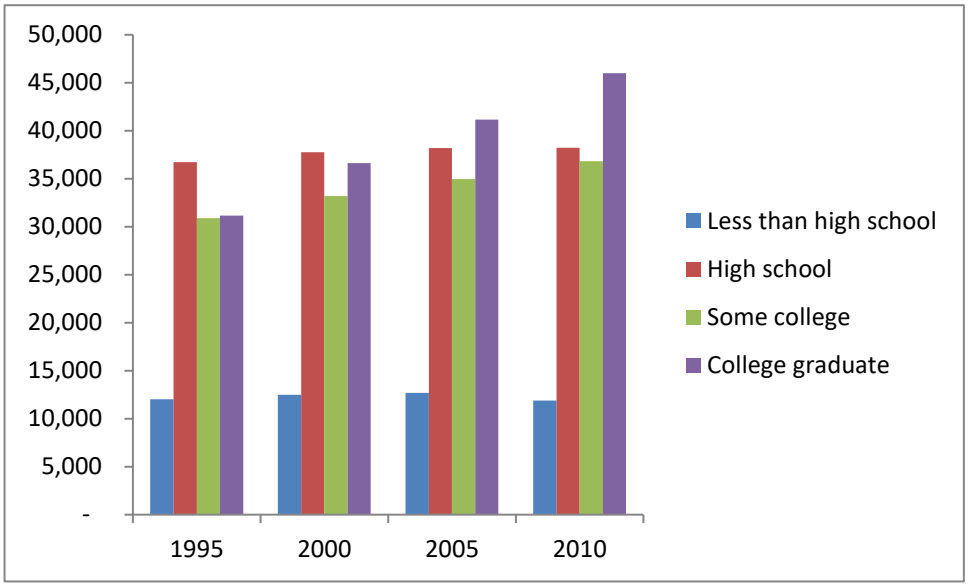
2.39



Half of American adults finished high school only. More than one-third received some kind of post-secondary education.

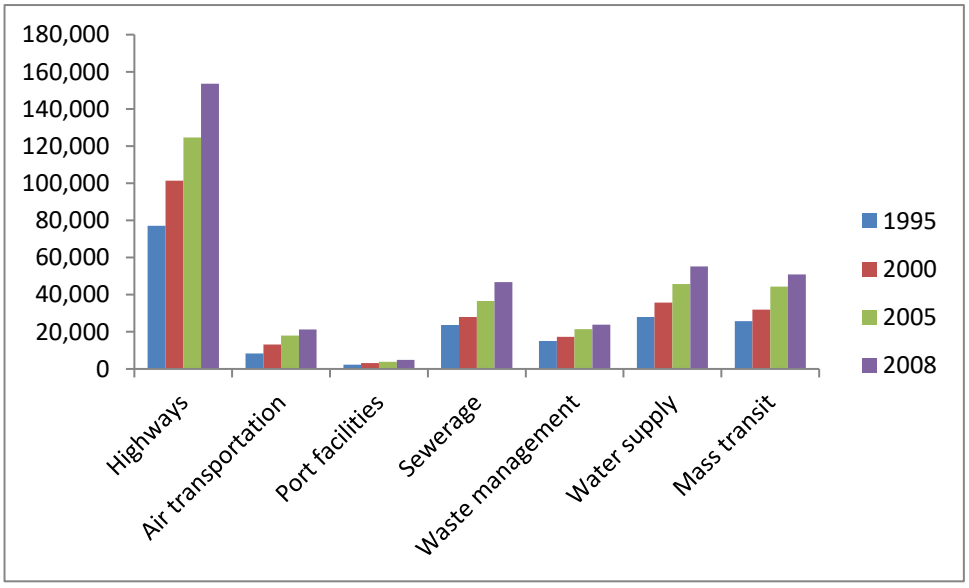
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2.40



The "Less than high school" category has remained constant, while the number of college graduates has increased.

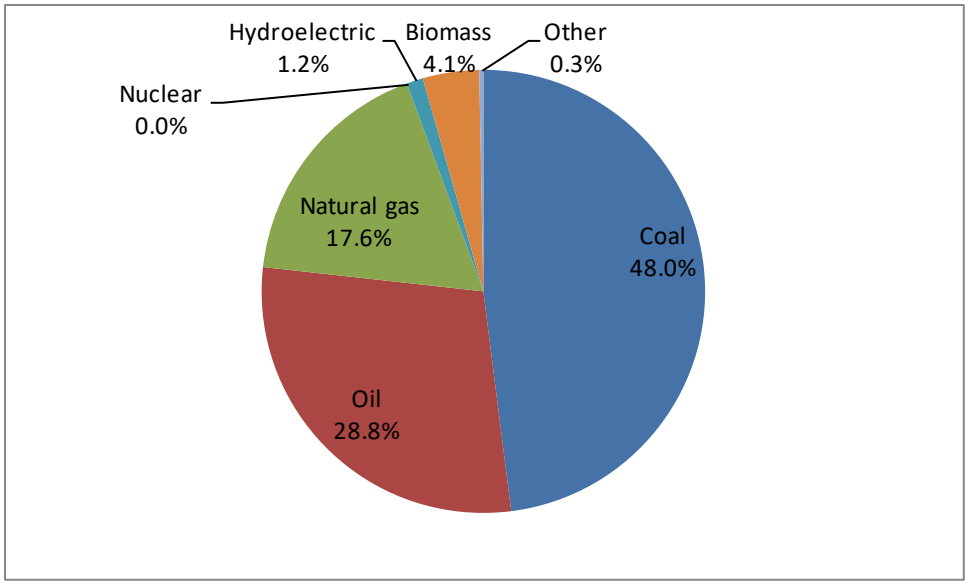
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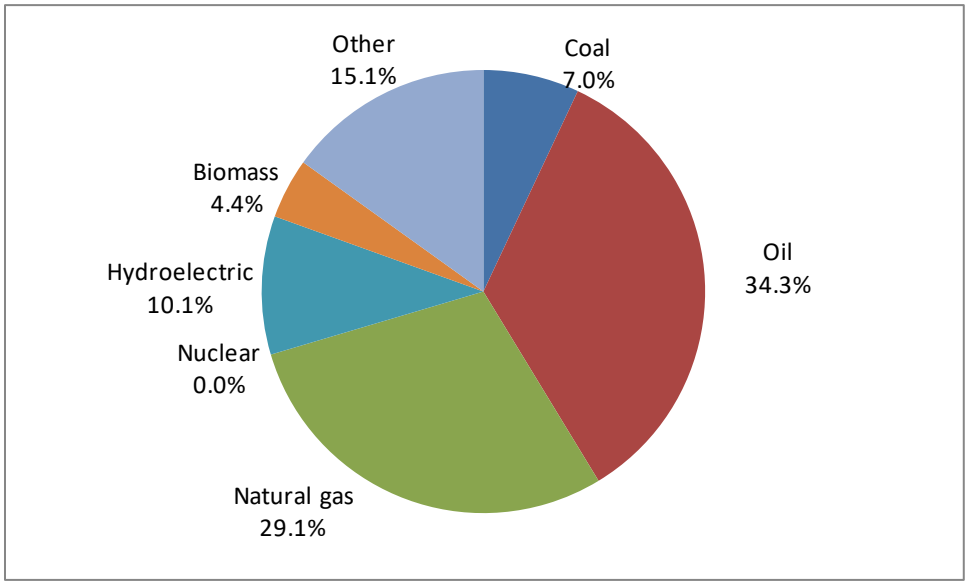
The state and local consumption has increased rapidlycompared to the other categories.

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2.42 Australian Energy Sources



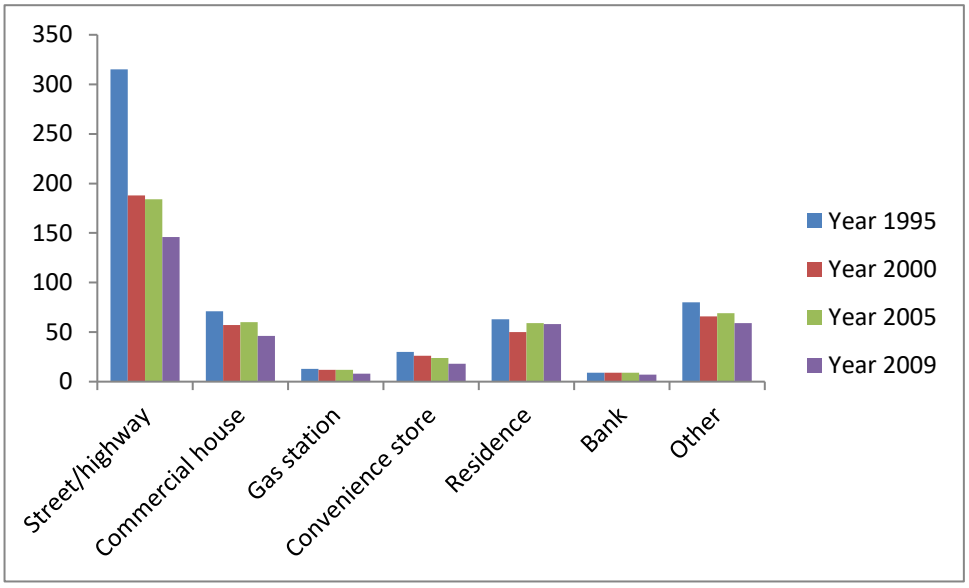
New Zealand Energy Sources



The dominant source in Australia is coal. In New Zealand it is oil.

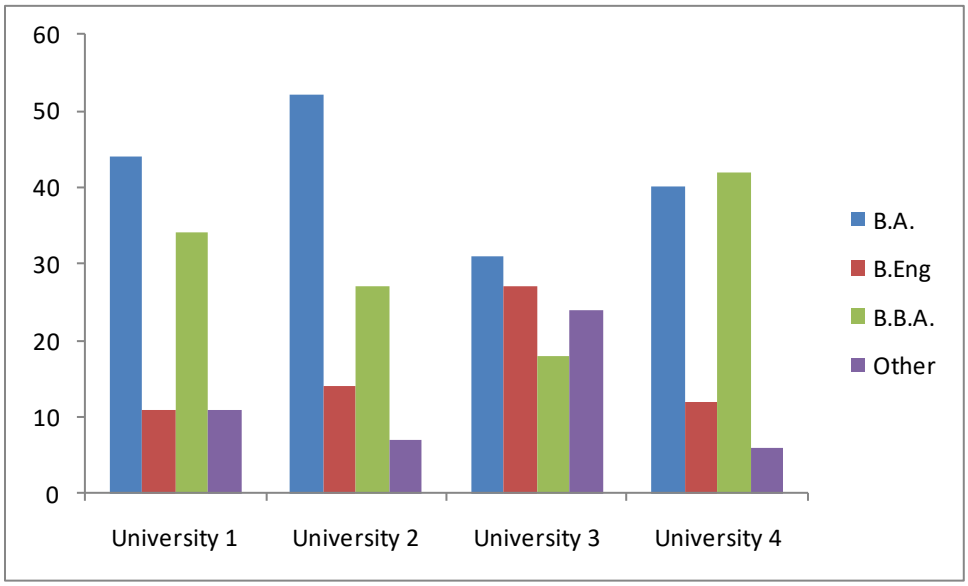
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2.43



Street crime has decreased while all the other categories have remained constant.

2.44



Universities 1 and 2 are similar and quite dissimilar from universities 3 and 4, which also differ. The two nominal variables appear to be related.

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2.45

Count of Owner	Last				
Second-last	Exxon	Amoco	Texaco	Other	Grand Total
Exxon	39	36	51	23	149
Amoco	36	32	46	20	134
Texaco	54	46	65	29	194
Other	24	20	28	10	82
Grand Total	153	134	190	82	559

Count of Owner	Last				
Second-last	Exxon	Amoco	Texaco	Other	Grand Total
Exxon	25%	27%	27%	28%	27%
Amoco	24%	24%	24%	24%	24%
Texaco	35%	34%	34%	35%	35%
Other	16%	15%	15%	12%	15%
Grand Total	100%	100%	100%	100%	100%

The column proportions are similar; the two nominal variables appear to be unrelated. There does not appear to be any brand loyalty.

2.46

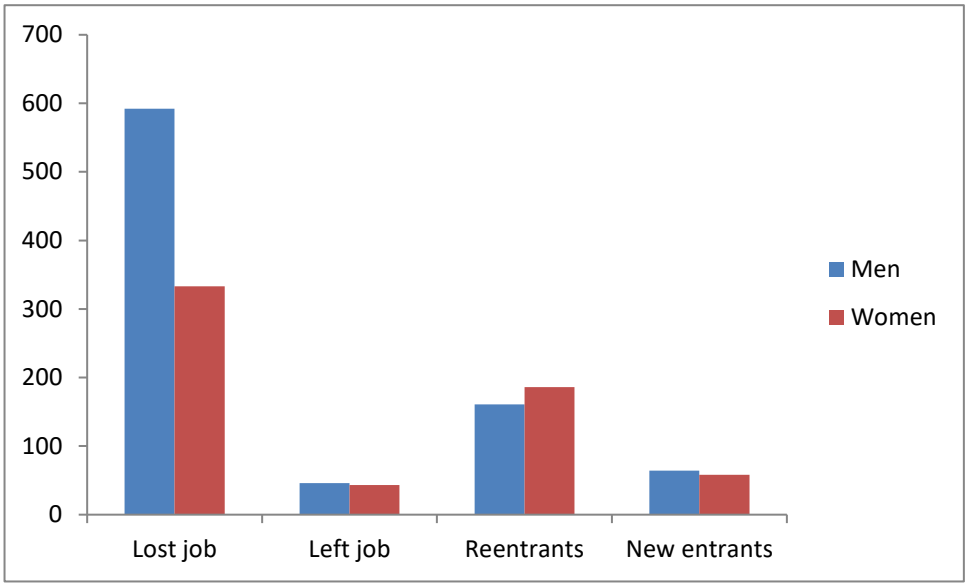
Count of Respondent	Smoke?		
Parent	Smoke?	Do not smo	Grand Total
Neither	73	14	87
Father	26	12	38
Mother	31	18	49
Both	10	41	51
Grand Total	140	85	225

Count of Respondent	Smoke?		
Parent	Smoke?	Do not smoke	Grand Total
Neither	52%	16%	39%
Father	19%	14%	17%
Mother	22%	21%	22%
Both	7%	48%	23%
Grand Total	100%	100%	100%

The two variables are related.

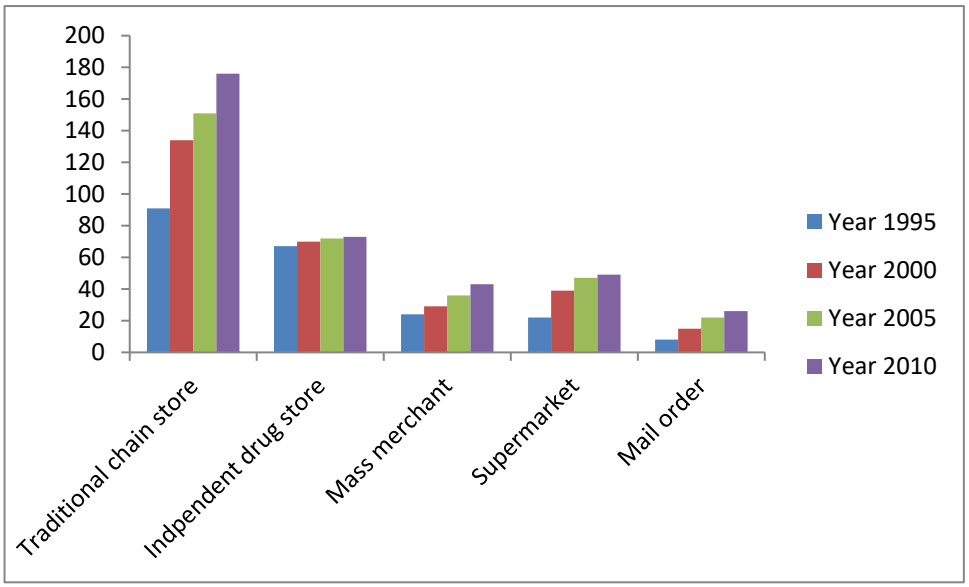
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2.47



There are large differences between men and women in terms of the reason for unemployment.

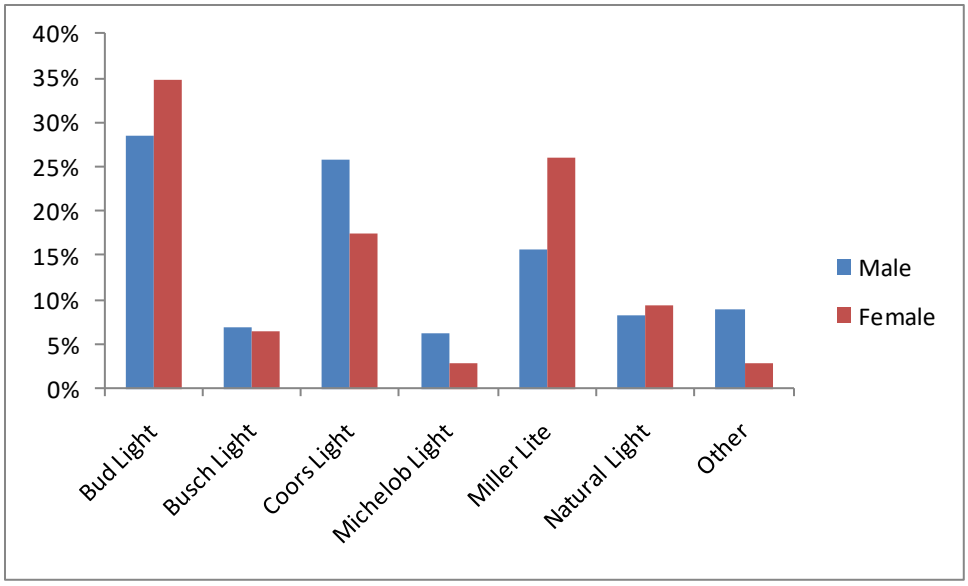
2.48



The number of prescriptions filled by all stores except independent drug stores has increased.

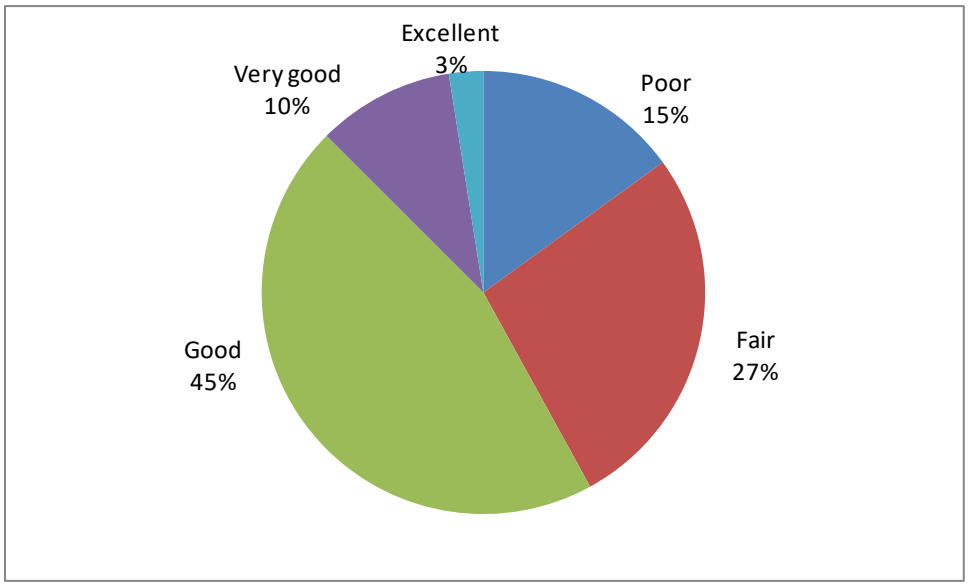
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2.49



There appears to be differences between female and male students in their choice of light beer.

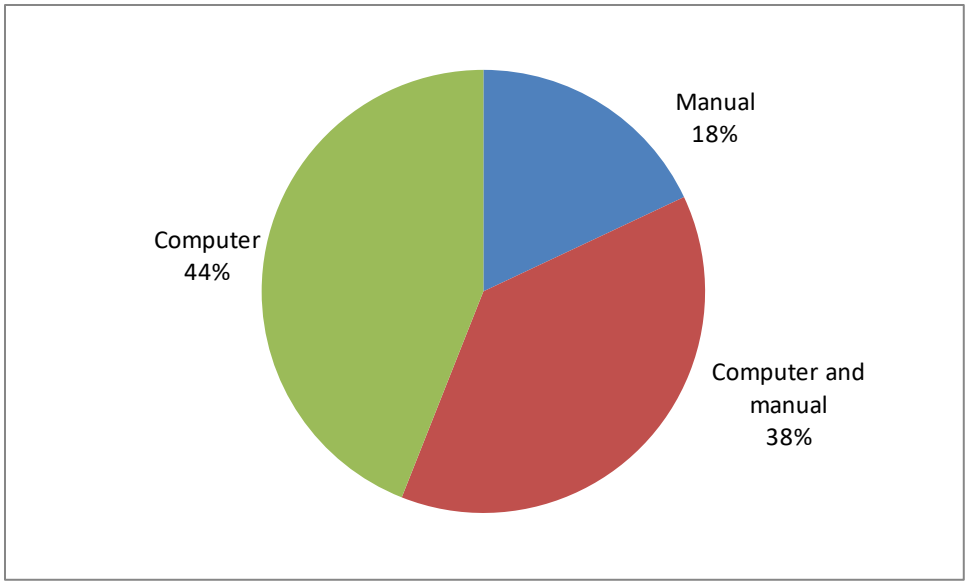
2.50



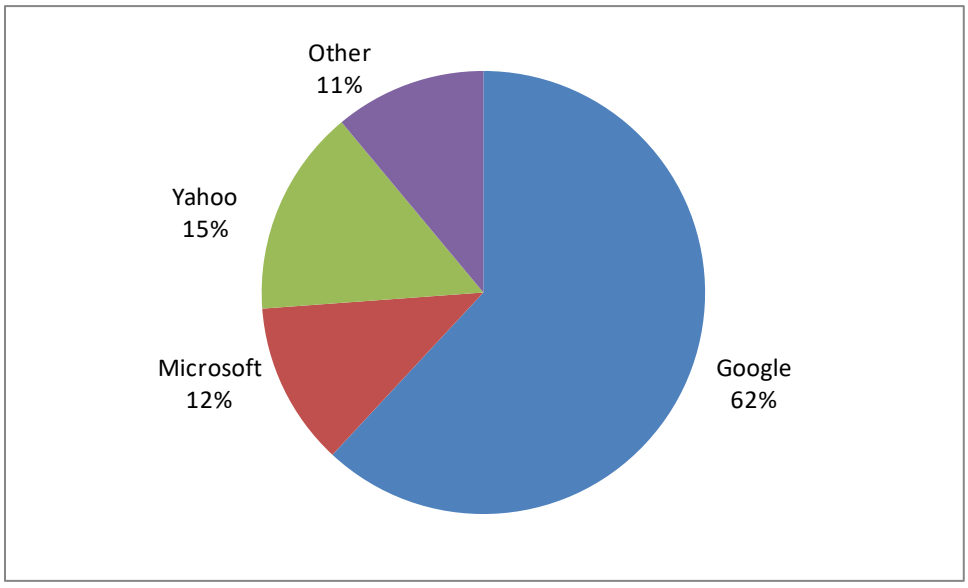
More than 40% rate the food as less than good.

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2.51

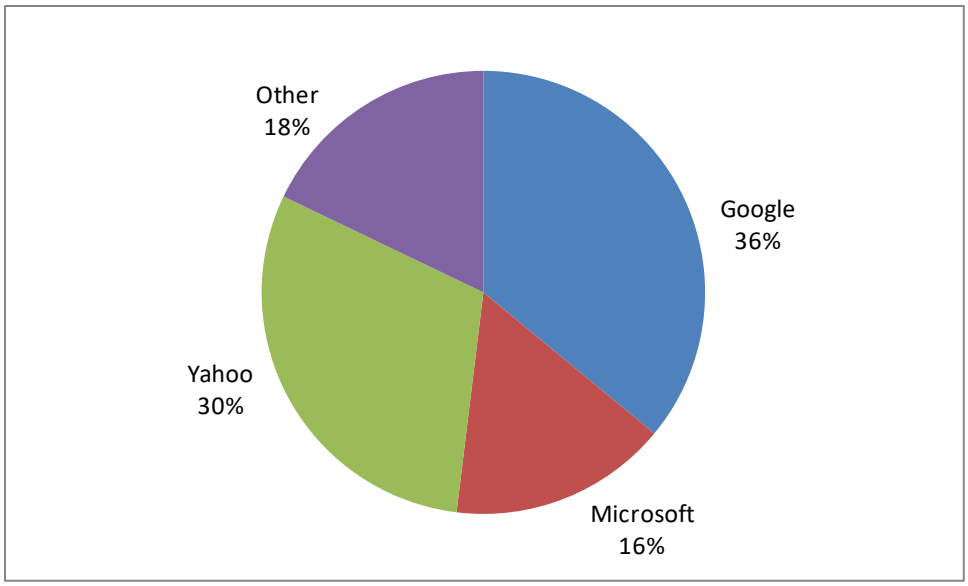


2.52 Canada



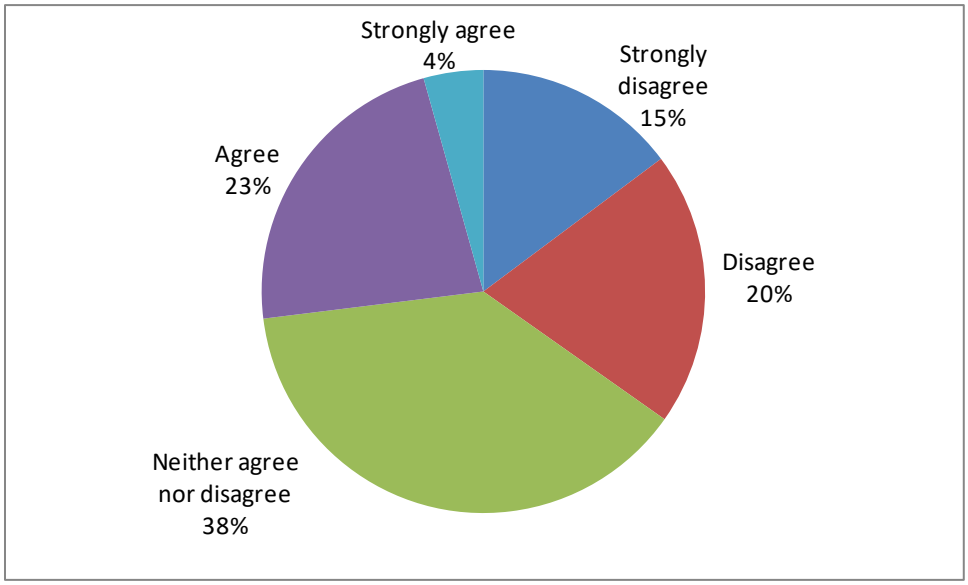
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United States



There are considerable differences between the two countries.

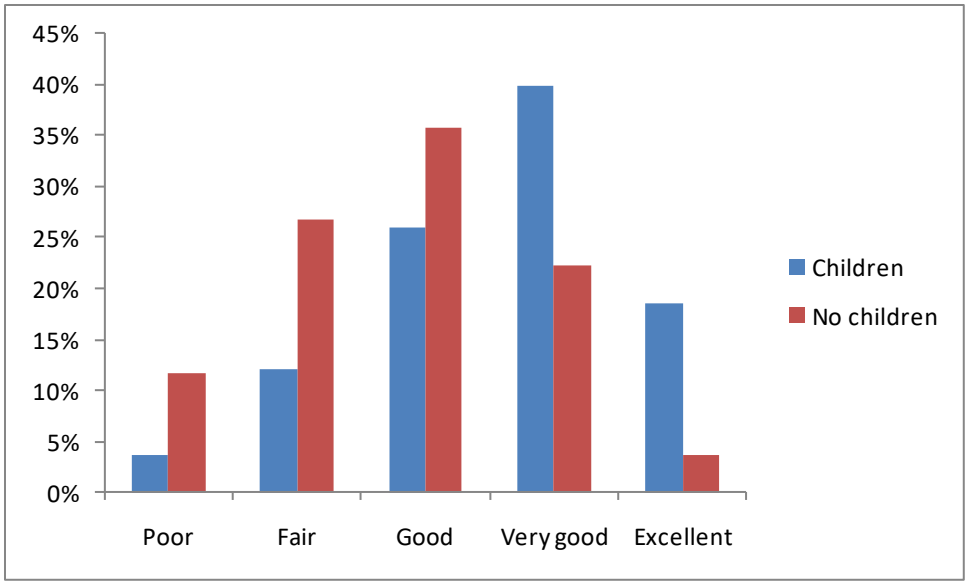
2.53



More students disagree than agree.

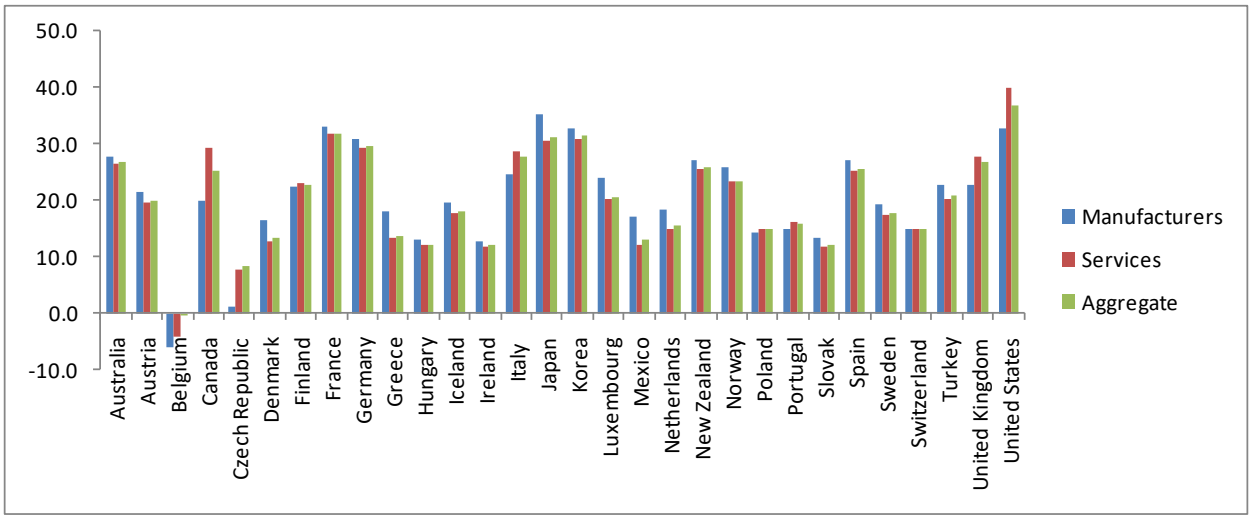
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2.54



Customers with children rated the restaurant more highly than did customers with no children.

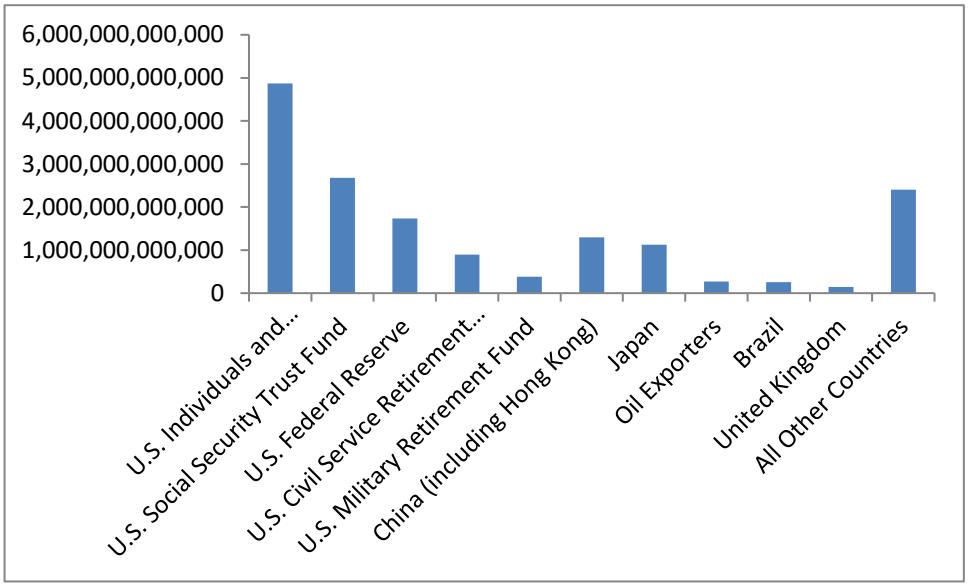
2.55

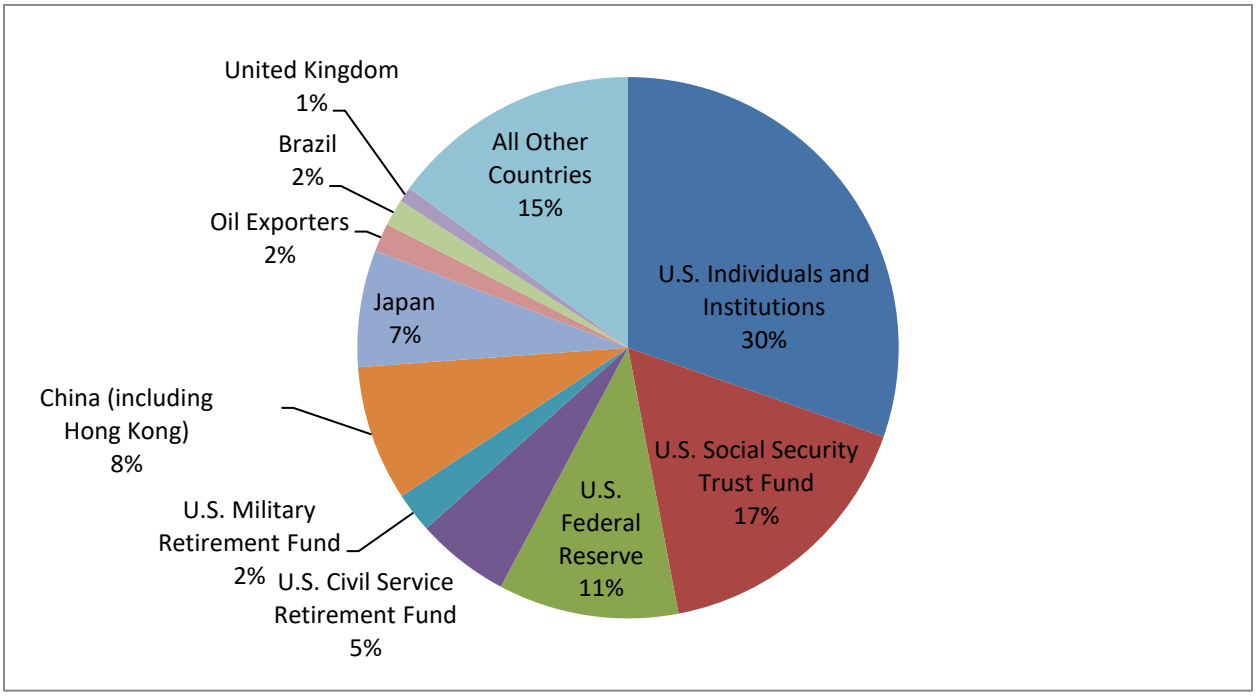


There is a great deal of variation between countries. Moreover some countries tax manufacturers more and some countries tax services more. The United States has the highest corporate tax rates.

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2.56

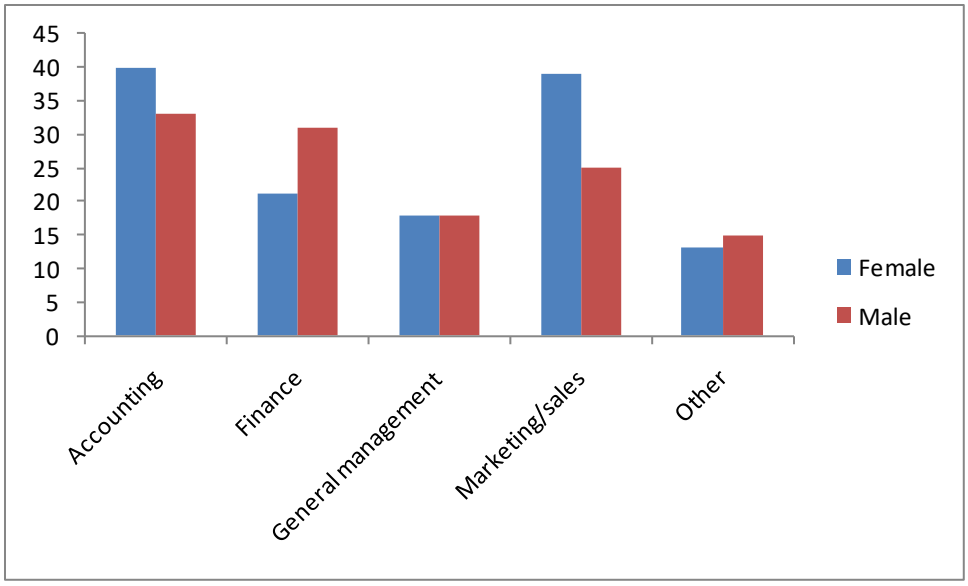




The United States owes a lot of money to many lenders.

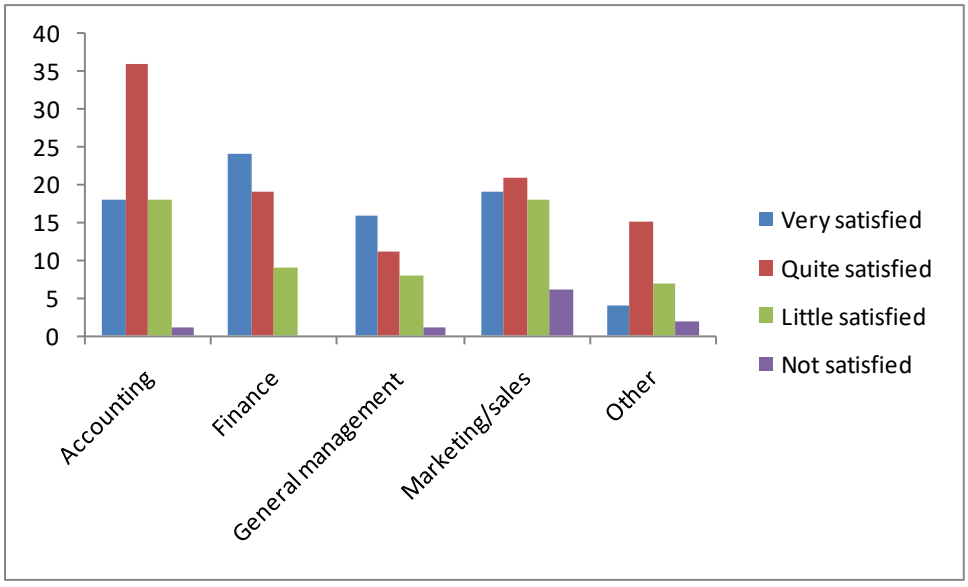
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2.57



Males and females differ in their areas of employment. Females tend to choose accounting marketing/sales and males opt for finance.

b



Area and job satisfaction are related. Graduates who work in finance and general management appear to be more satisfied than those in accounting, marketing/sales, and others.

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