



1.0 UNDERGROUND BARRING QUESTIONNAIRE RESPONDENT STATISTICS ON ATTRIBUTE DATA

The following statistics are completed on the data set of 273 responses to the Underground Barring Questionnaire – Shown in Appendix A. Each observation represents a category into which an attribute has been classified rather than measured.

Most of the charts below are descriptive, informative and are not accompanied by explanatory text.

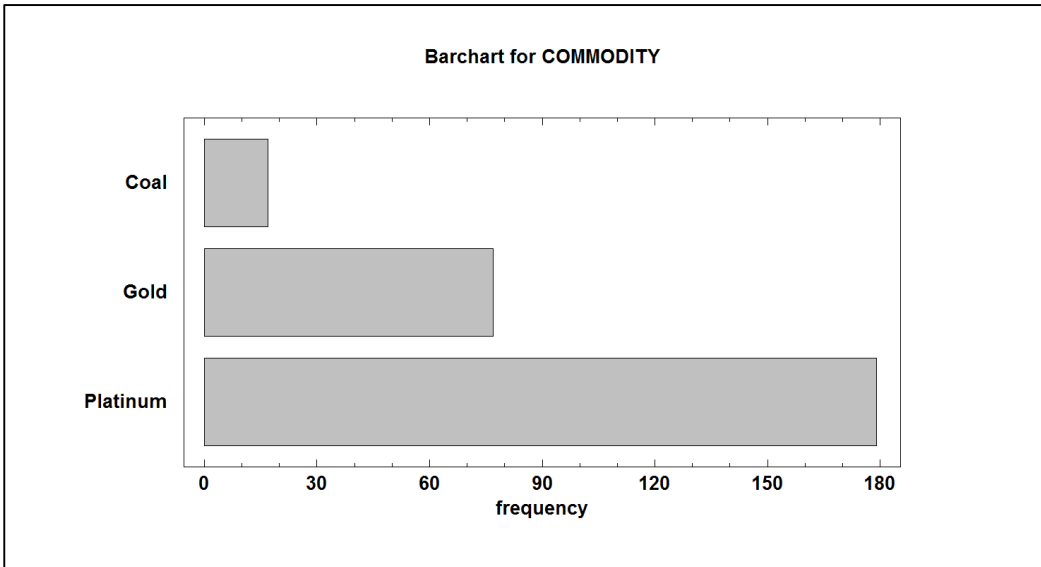


Figure 1: Frequency of questionnaire respondents per commodity

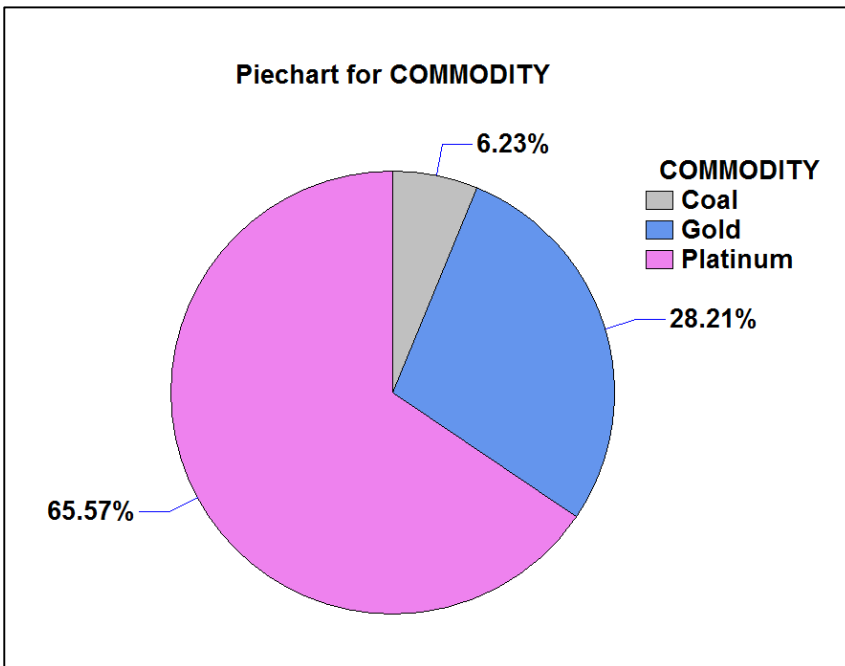


Figure 2: Percentage of questionnaire respondents per commodity

As most of the visits made underground were completed at platinum mines, it follows that the number of survey respondents in the platinum sector is higher i.e. 179 respondents in platinum, versus 77 in gold and 17 in coal - Figure 1 & Figure 2.

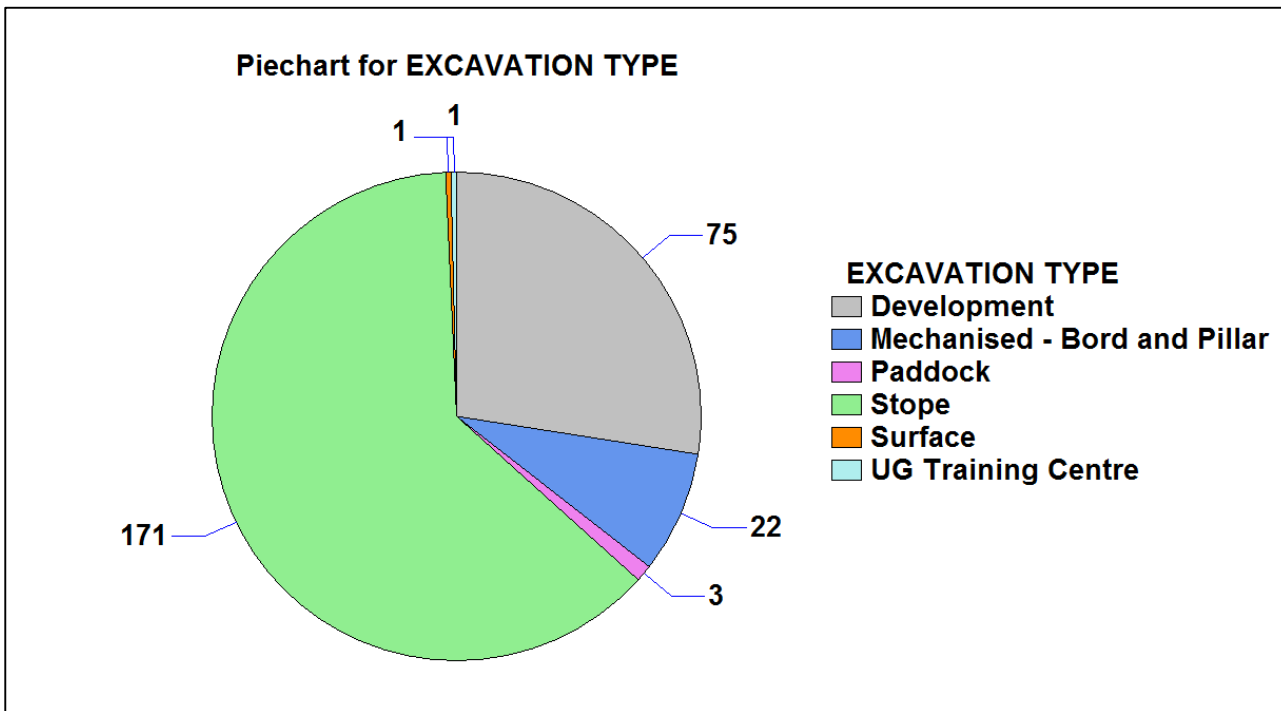


Figure 3: Type of Mine Excavations visited where respondents were observed and surveyed

The stoping environments (Figure 3) were most visited as this is where FOG gravity accidents, historically, occurred the most.

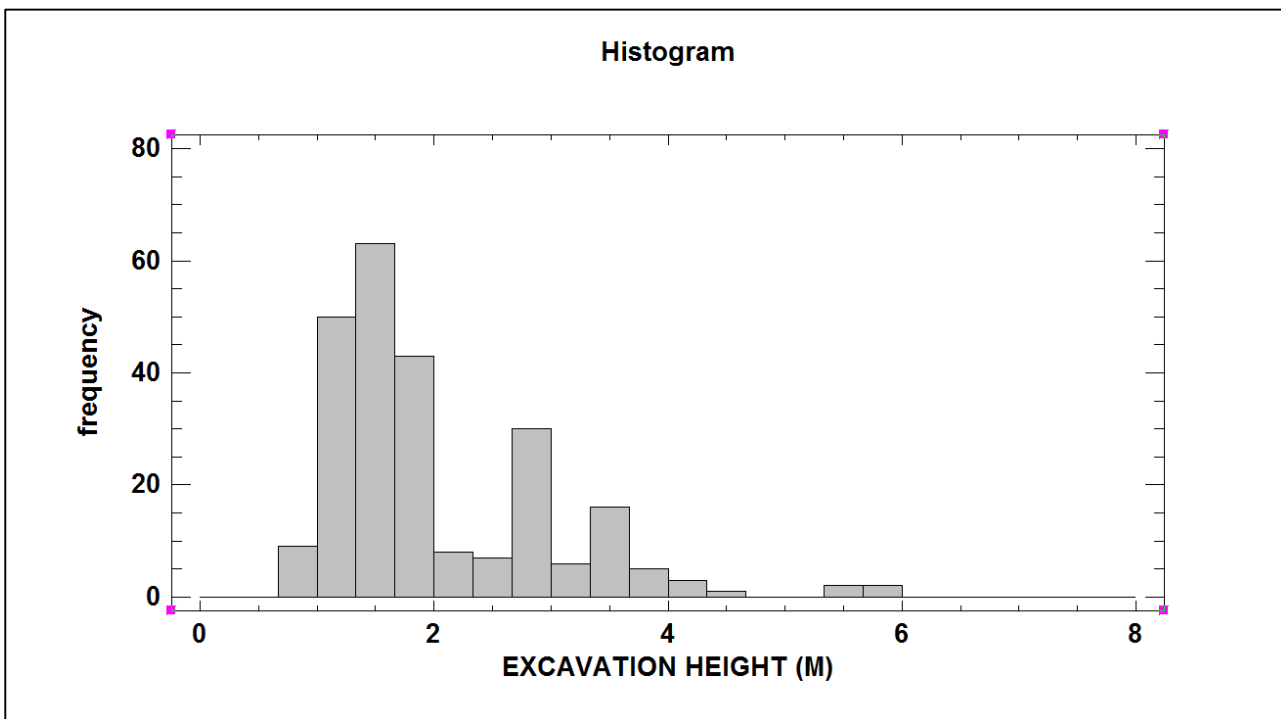


Figure 4: Frequency of Excavation height of working places visited

As 171 respondents were observed and questioned in-stope, it corresponds that most of the stopes had a height of below 2m (Figure 4).



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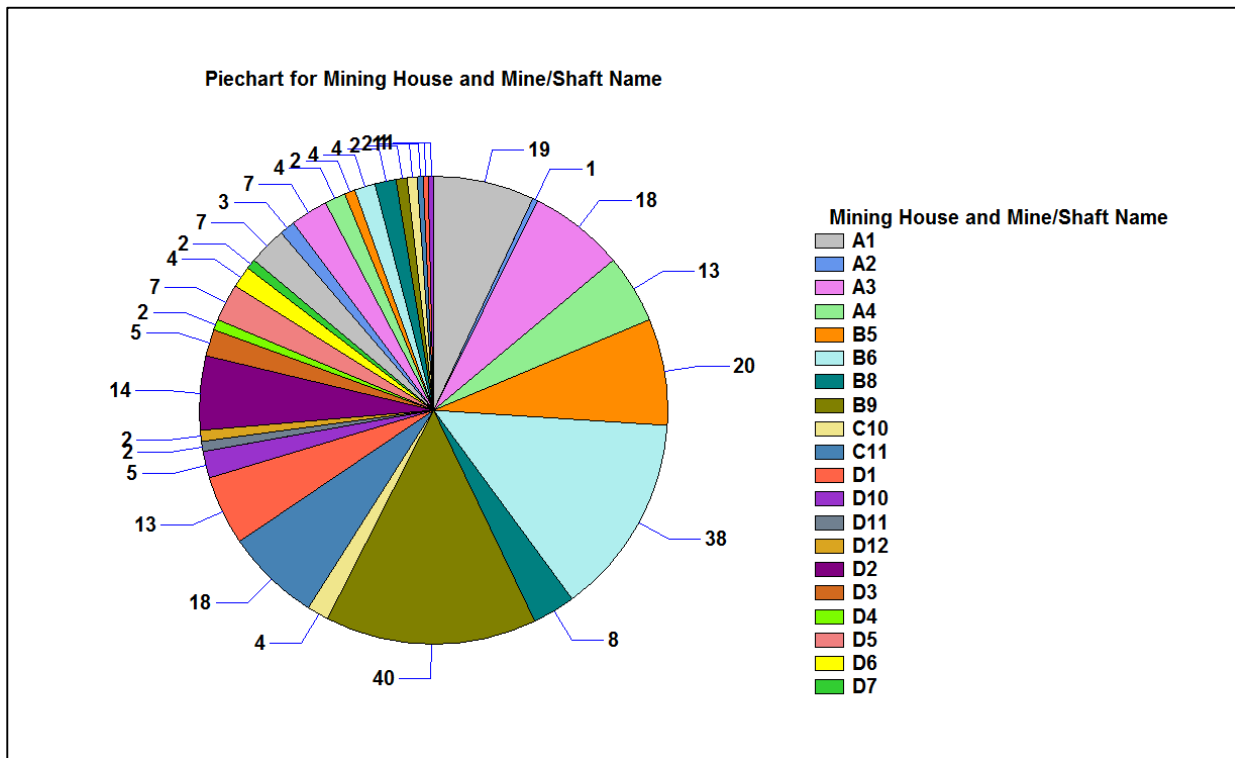


Figure 5: Frequency of respondents per Mining House and Mine/ Shaft Classification

Figure 5 shows that the most survey respondents are from Mining House B – Shaft 9 as per the classification system for the study - platinum.

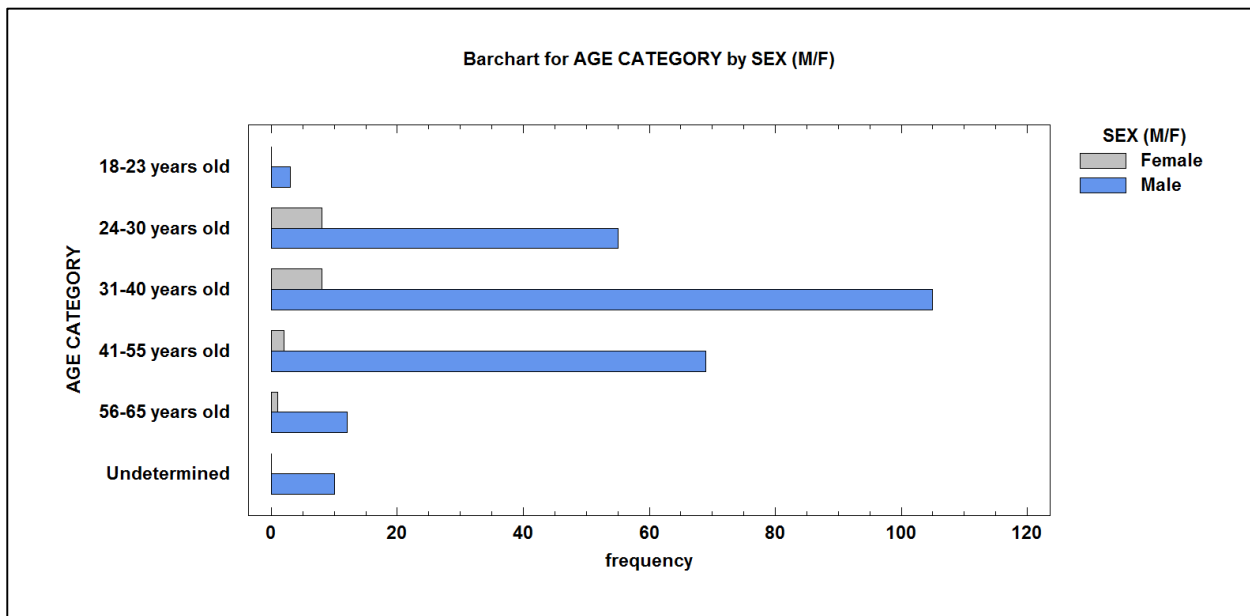


Figure 6: Frequency of Age Category Classification of respondents by Gender

The most barraging survey respondents were found to be from the age category of between 31 to 40 years old. The smallest age group is that of 18 to 23 years old - Figure 6. This group is mostly new mine employees and trainees interviewed at the underground training centres.



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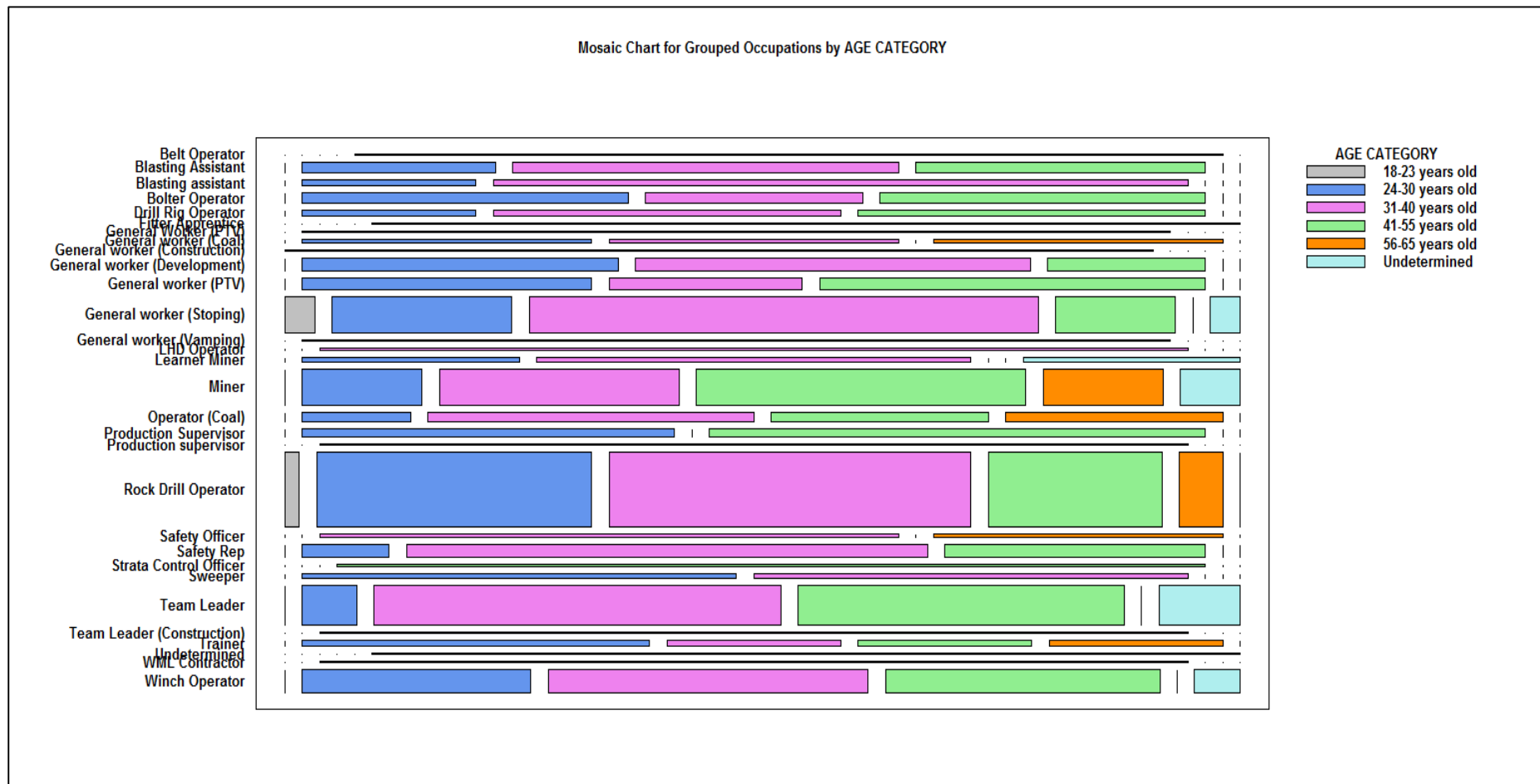


Figure 7: Distributions of Occupations per Age Category

RDO's who are between 31 to 40 years old formed the largest group of the respondents - Figure 7.



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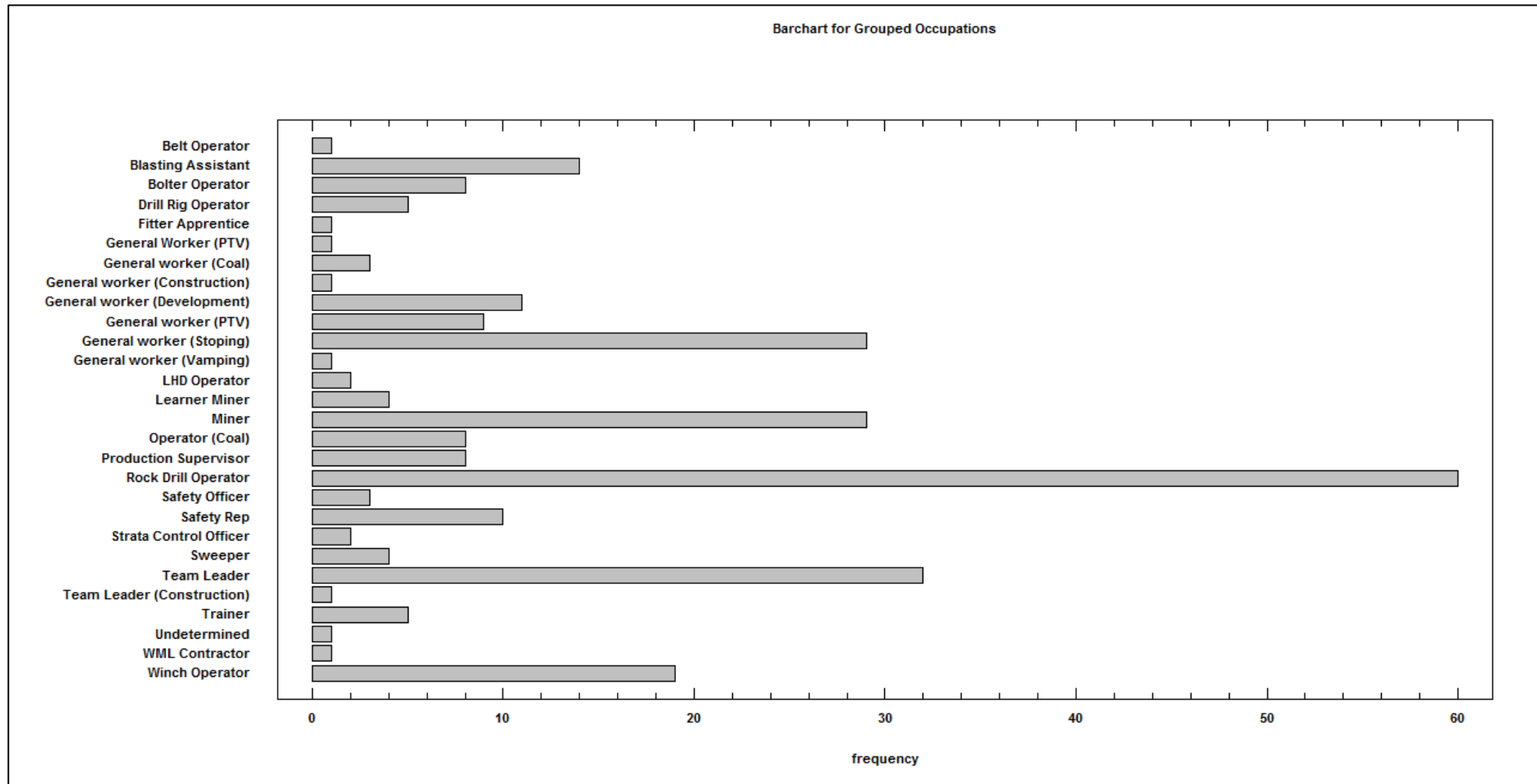


Figure 8: Frequency of occupations

RDO's were mostly interviewed as they are on the face the most and therefore most exposed to FOG accidents either from the hangingwall or the face - Figure 8:

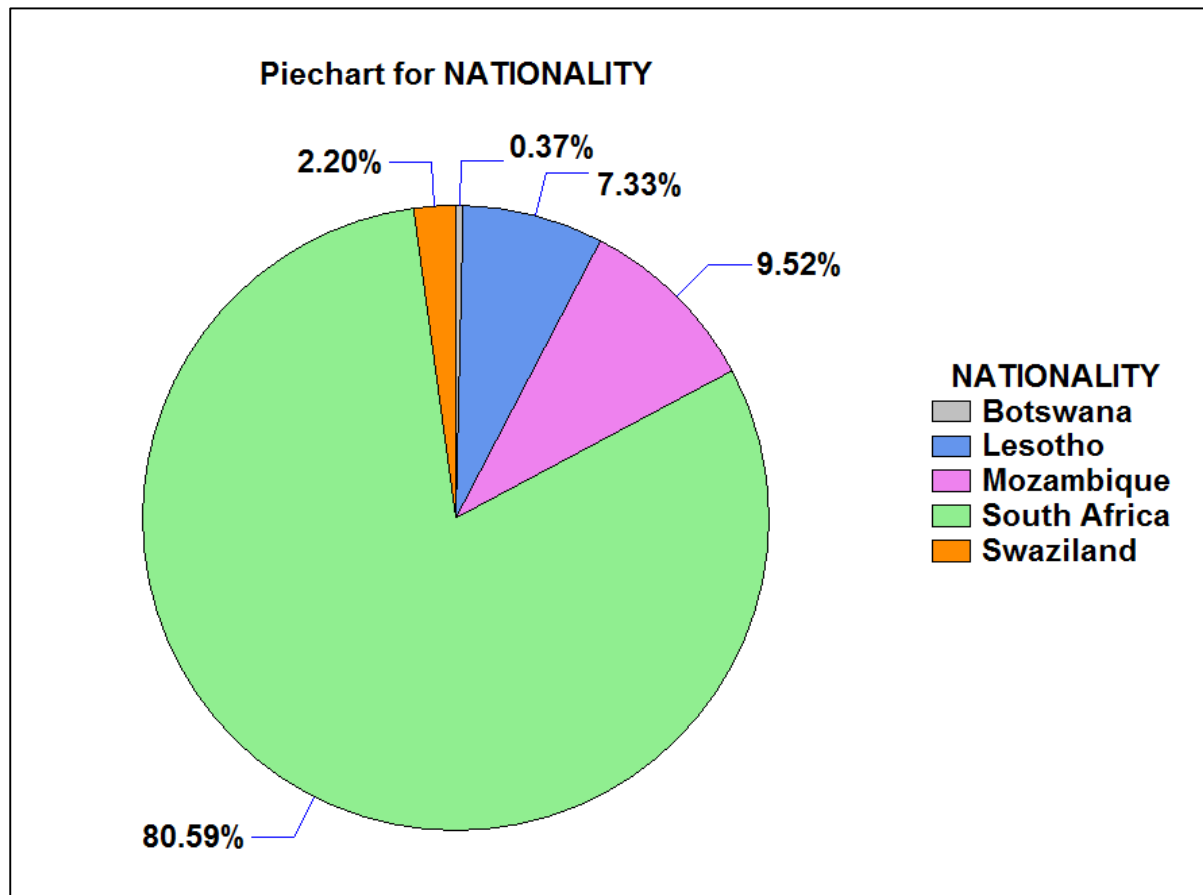


Figure 9: Percentage of survey respondents per Nationality

Most respondents were South African with almost 10% being from Mozambique (Figure 9).

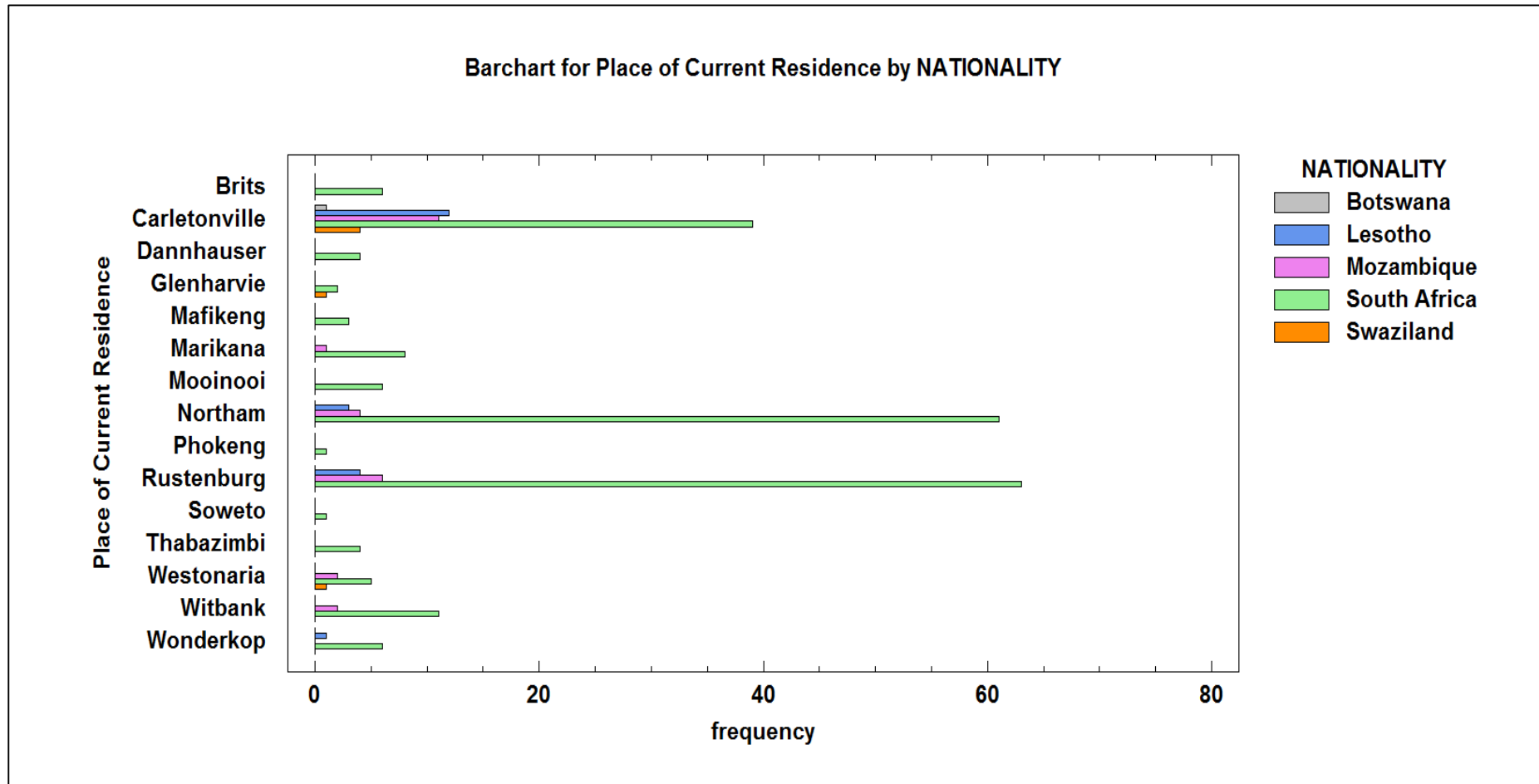


Figure 10: Frequency of places of current residence of respondents by Nationality



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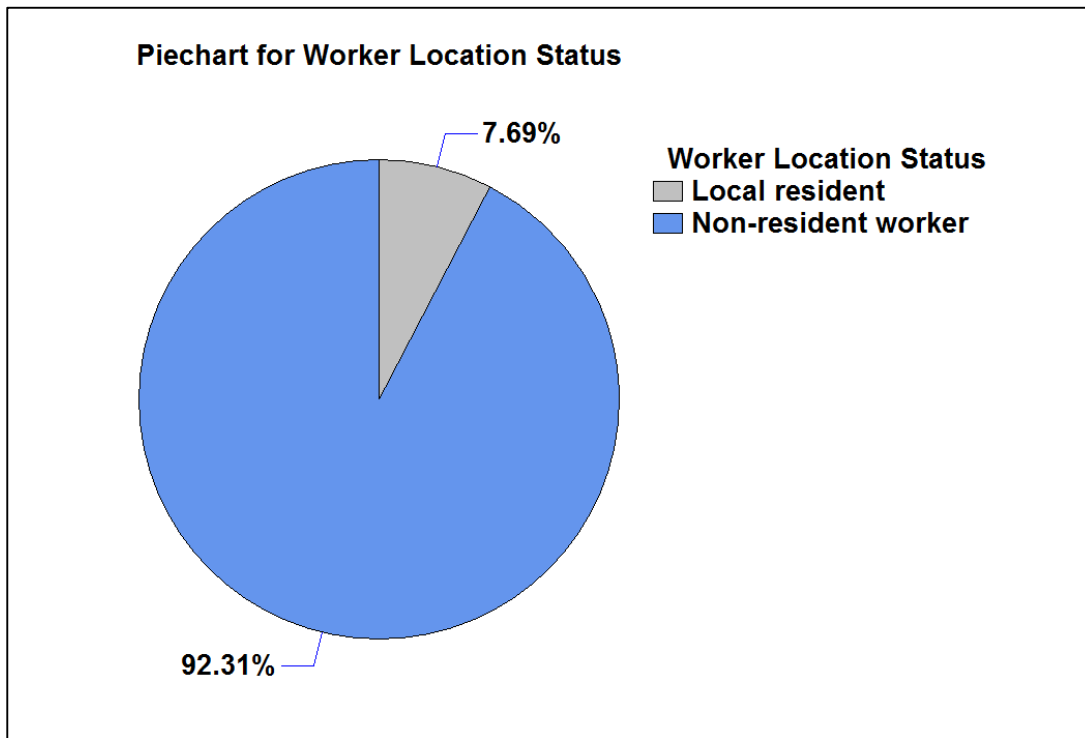


Figure 11: Percentage of respondents that are local residents to the mining communities they work in and the percentage that are non-residents

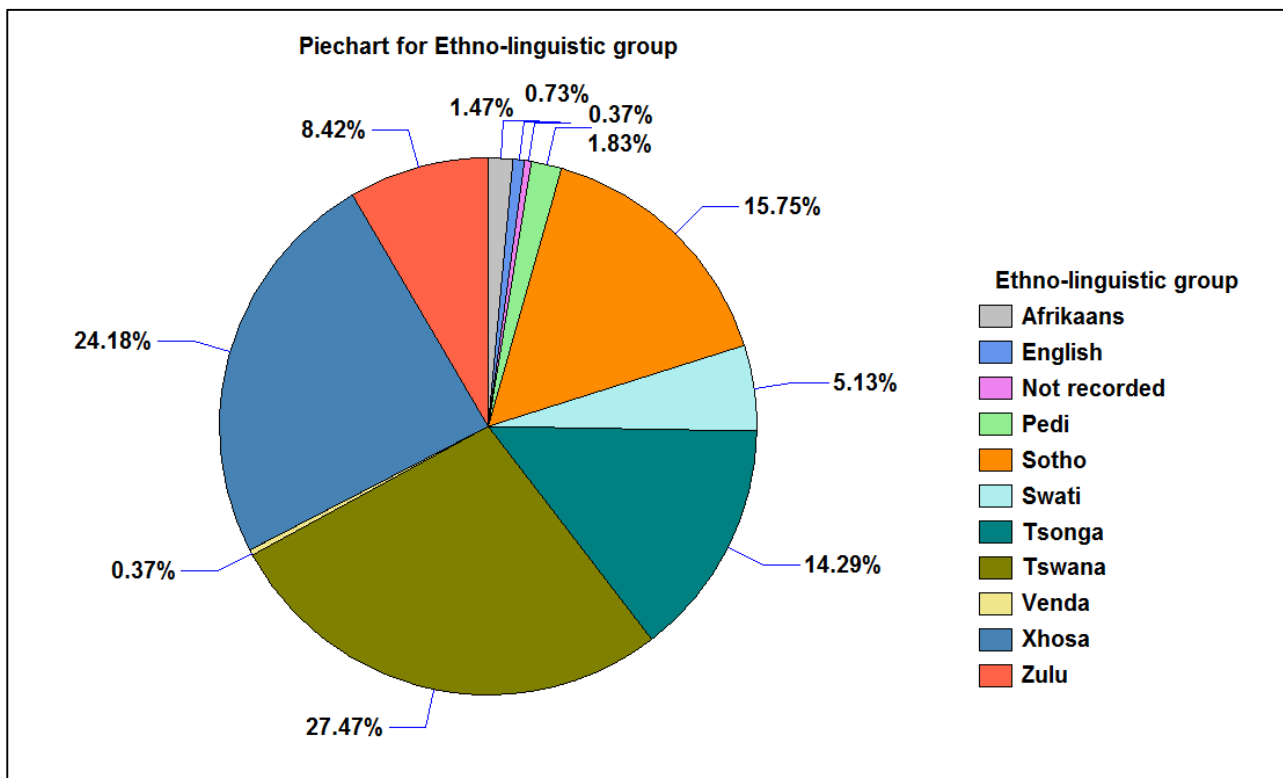


Figure 12: Percentages of respondents per Ethno-Linguistic group



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27.47% of respondents are the Tswana ethno-linguistic group - Figure 12. This is because most of the respondents were from the platinum mining environment.

Xhosa, Sotho and Tsonga persons formed a large set of respondents as well.



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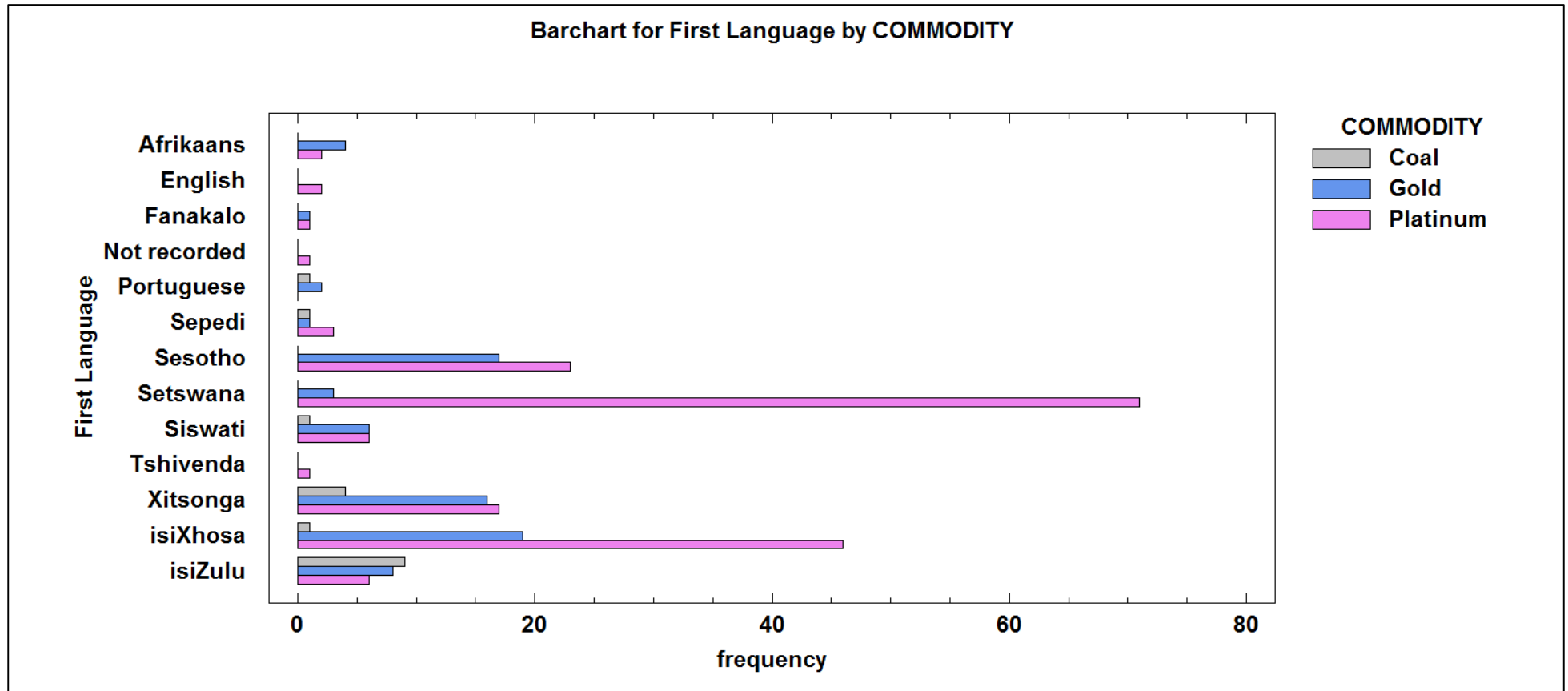


Figure 13: Frequency of First Language spoken by respondents per commodity



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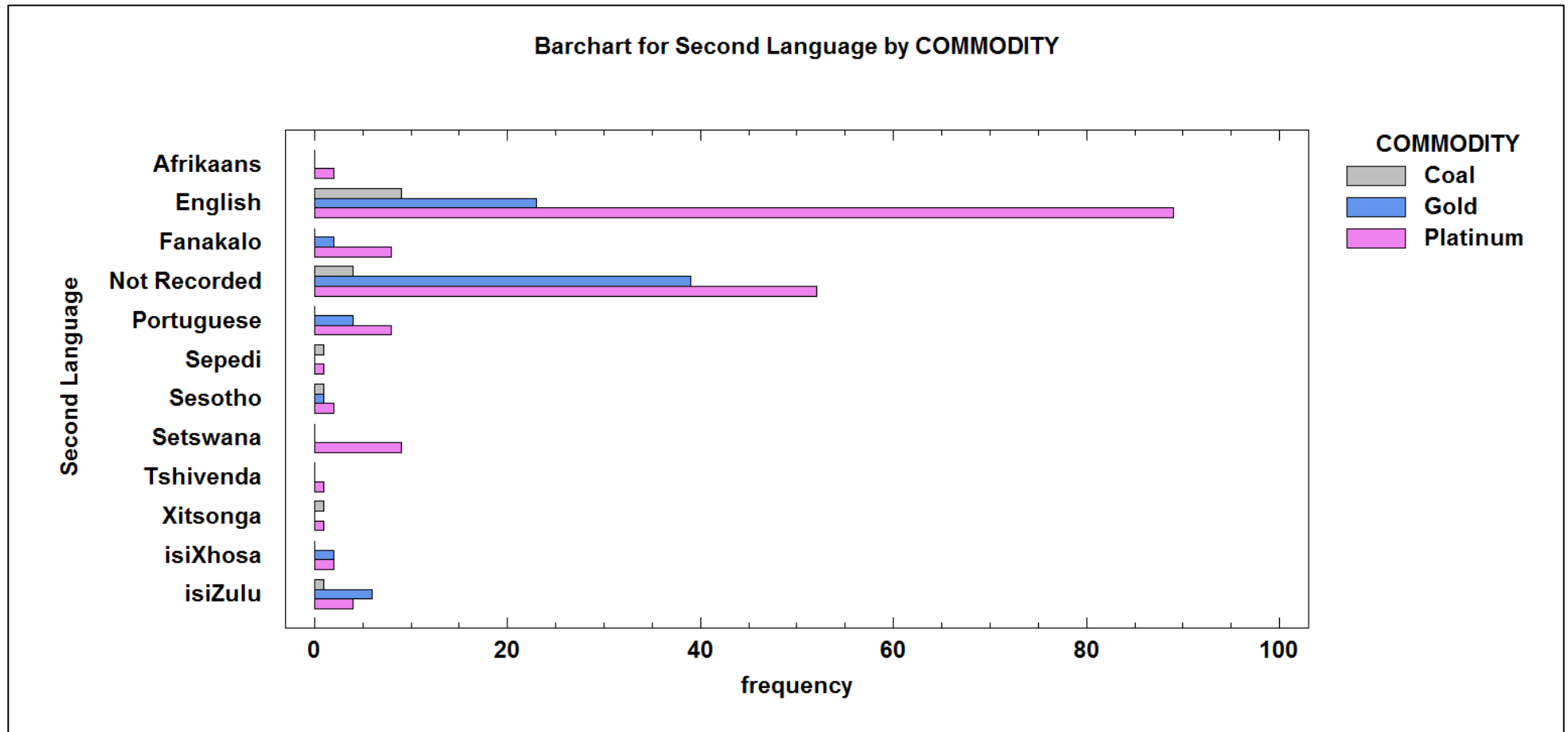


Figure 14: Frequency of Second Language spoken by respondents per commodity

Surprisingly, English is often listed as a Second language spoken by mining personnel. The group listed as 'Non Recorded' is largely comprised of people who did not respond to the question.



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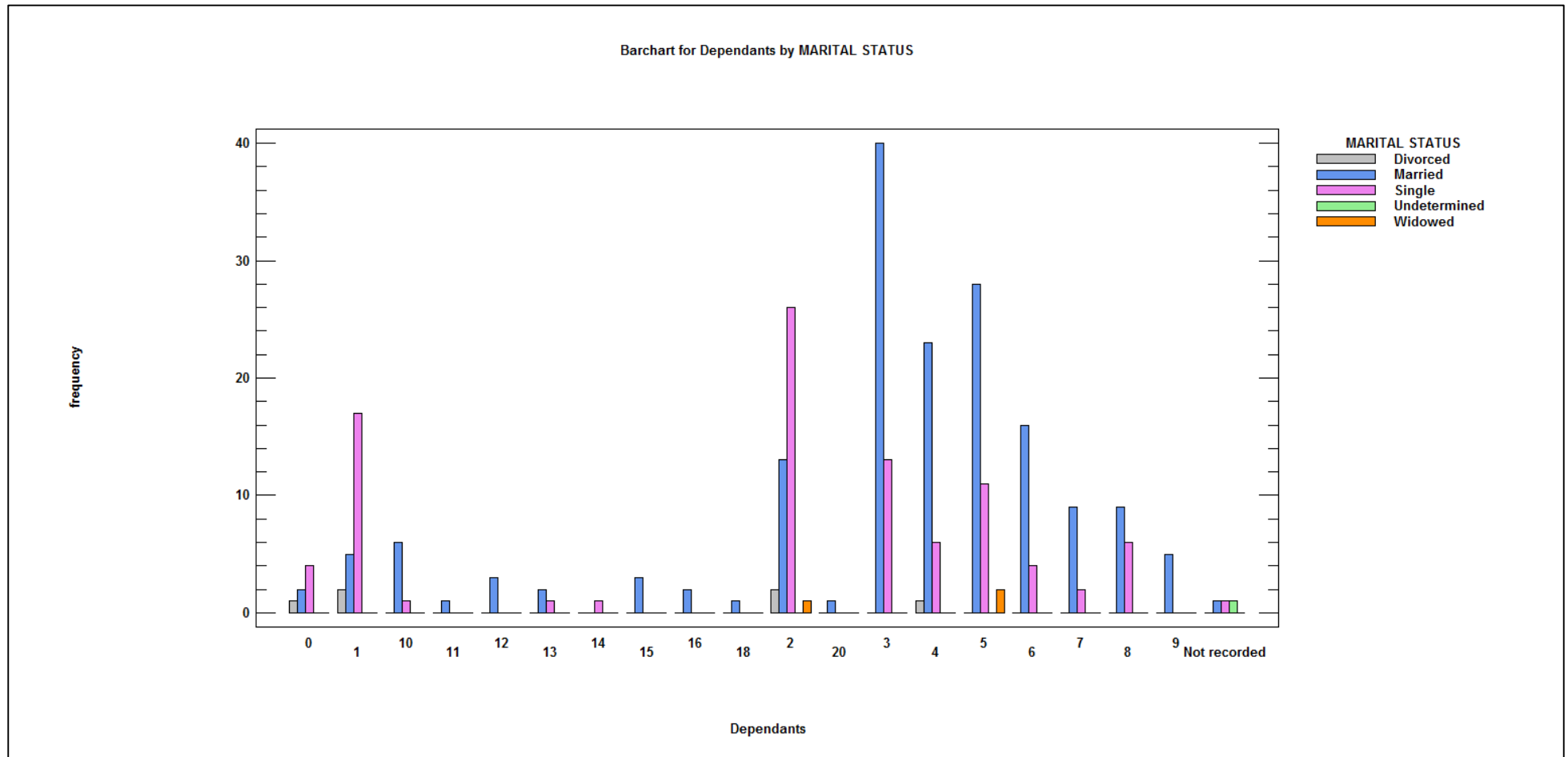


Figure 15: Frequency of Number of dependants by marital status



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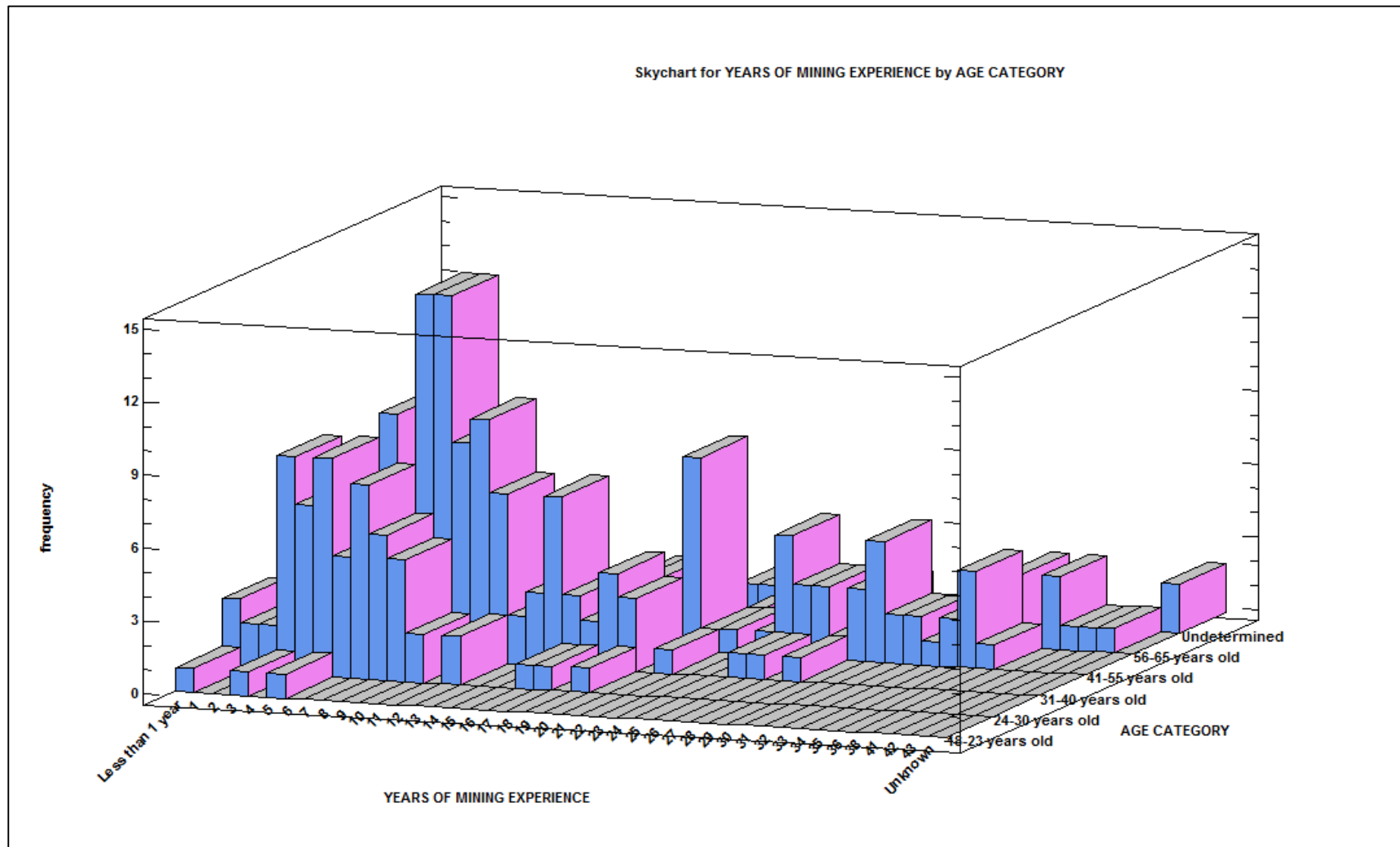


Figure 16: Skychart of years of mining experience by age category of respondents

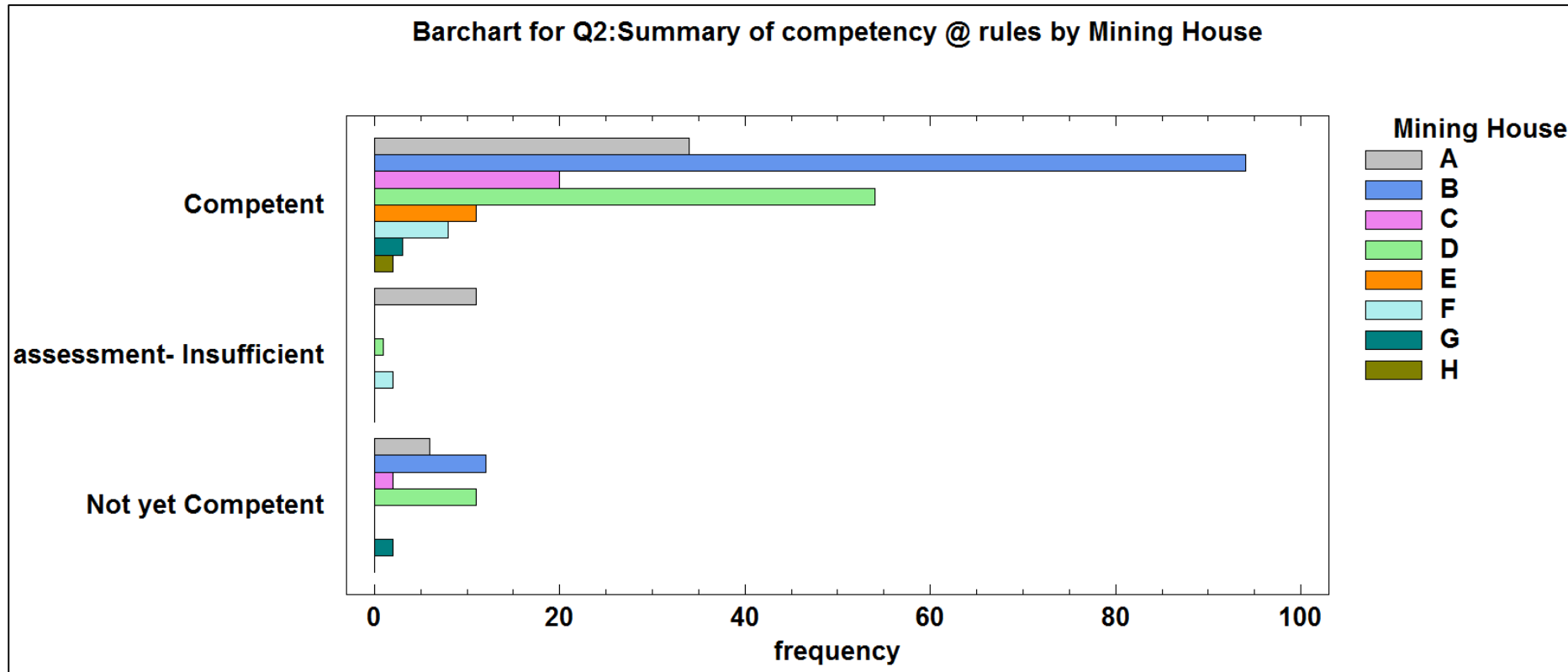


Figure 17: Frequency of Competency at communicating barring rules per Mining House

The most pleasing information that can be taken from Figure 17 is that personnel at Mining Houses E, F and H appear to be the most competent at communicating their mine-specific rules of barring.

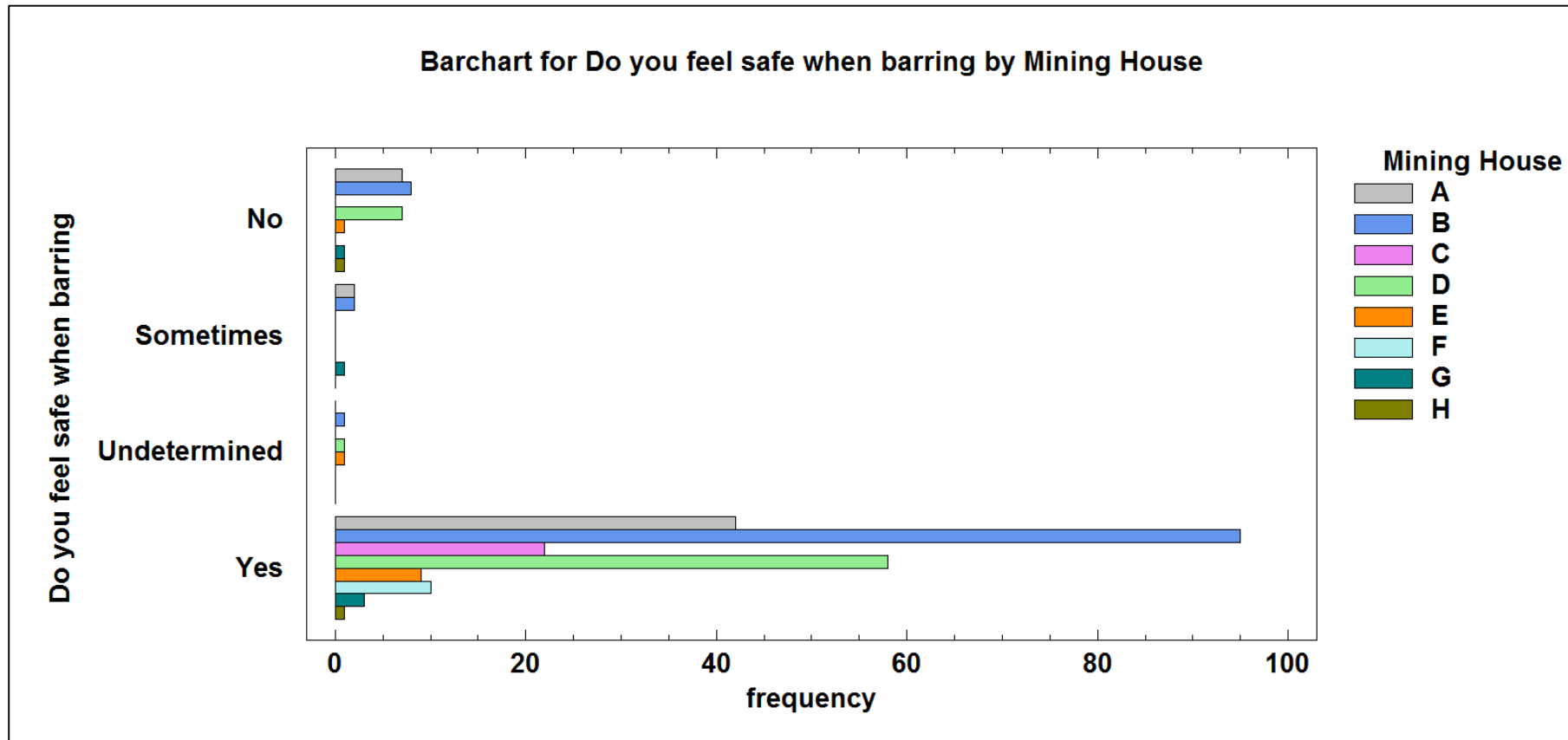


Figure 18: Frequency of responses to the question "Do you feel safe when barring?" by Mining House

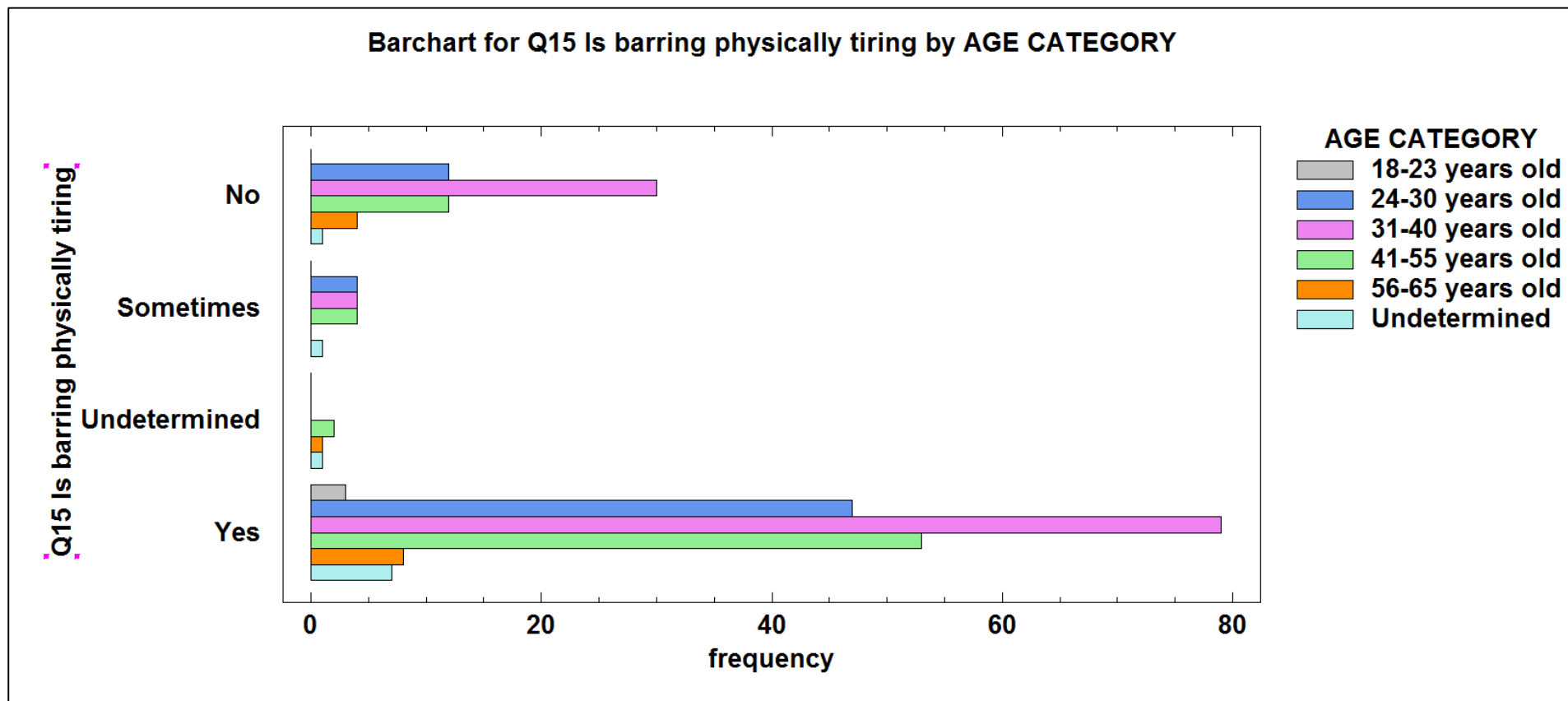


Figure 19: Frequency of responses to the question "Is barring physically tiring?" by Age Category

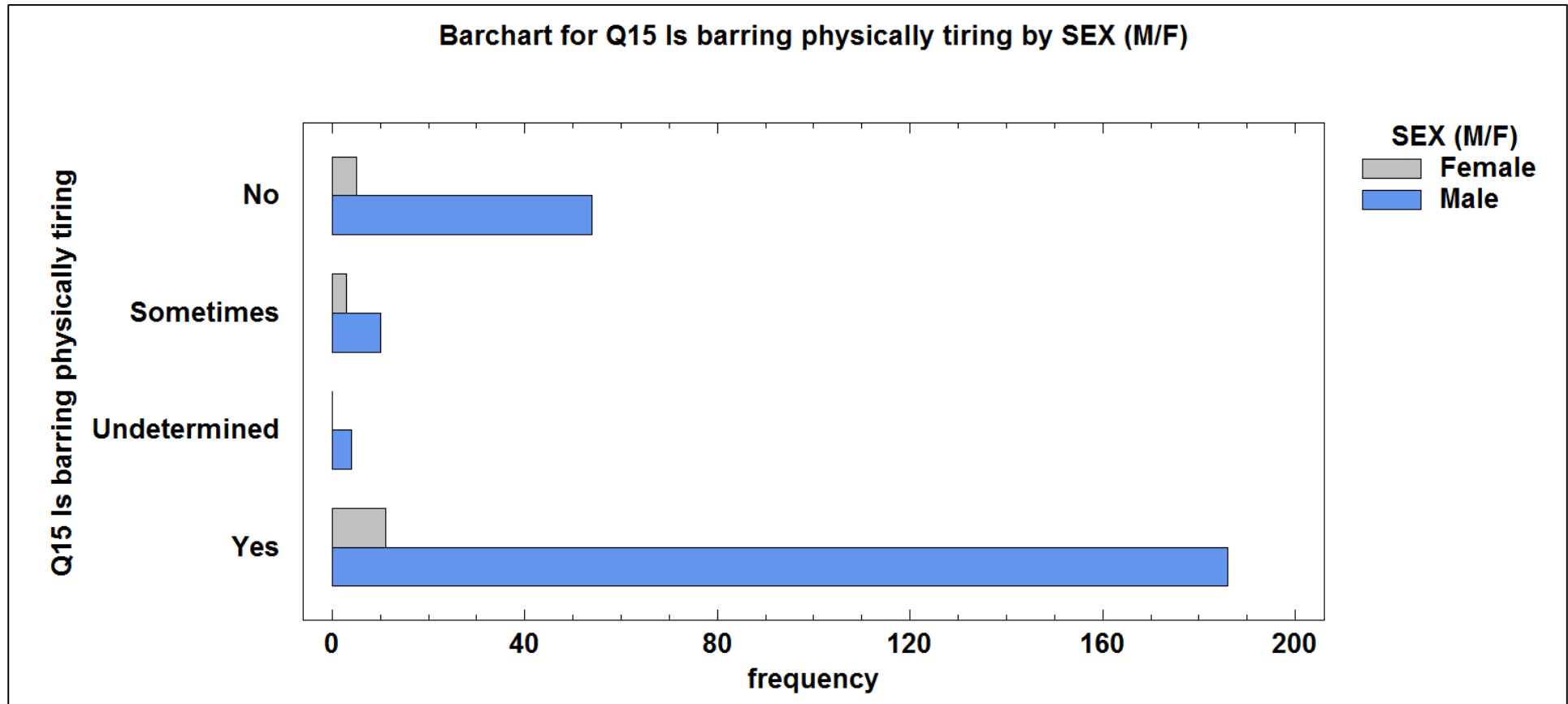


Figure 20: Frequency of responses to the question "Is barring physically tiring?" by Gender



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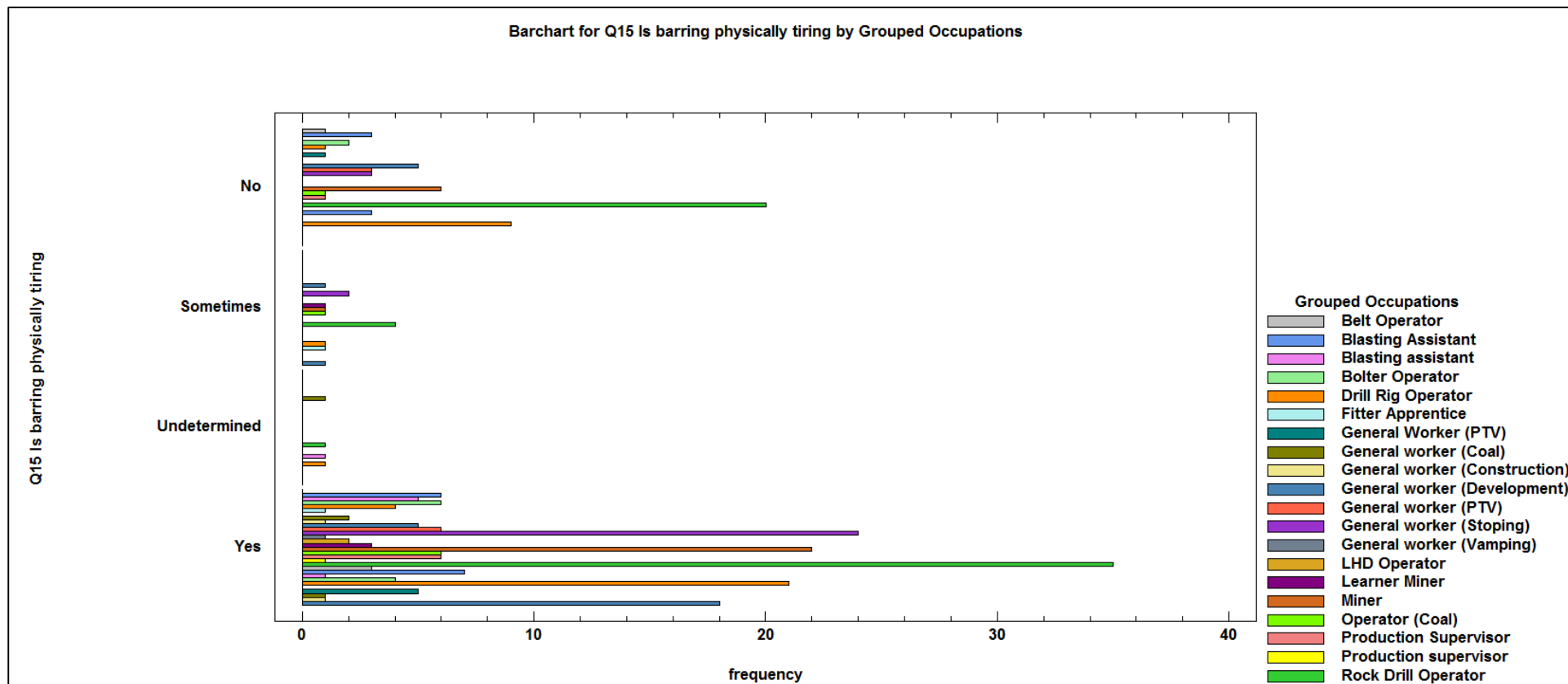


Figure 21: Frequency of responses to the question "Is barring physically tiring?" by Occupation

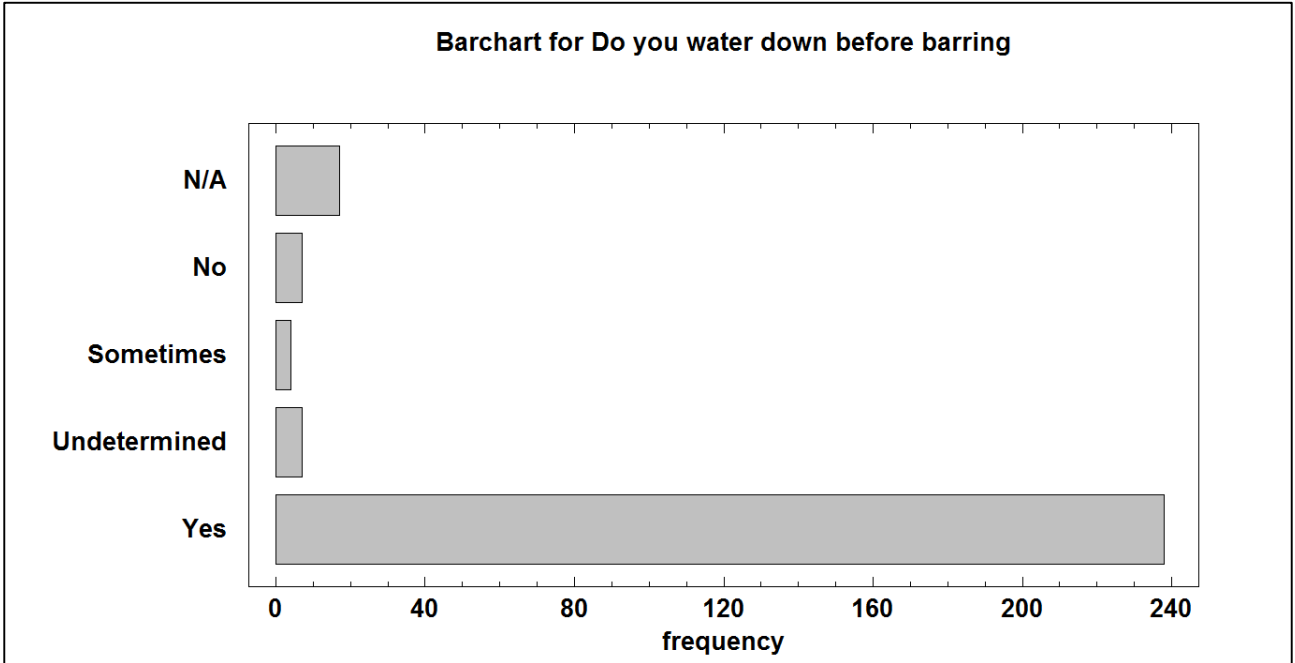


Figure 22: Frequency of responses to the question "Do you water down before barring?". Note the NA response is for respondents from collieries



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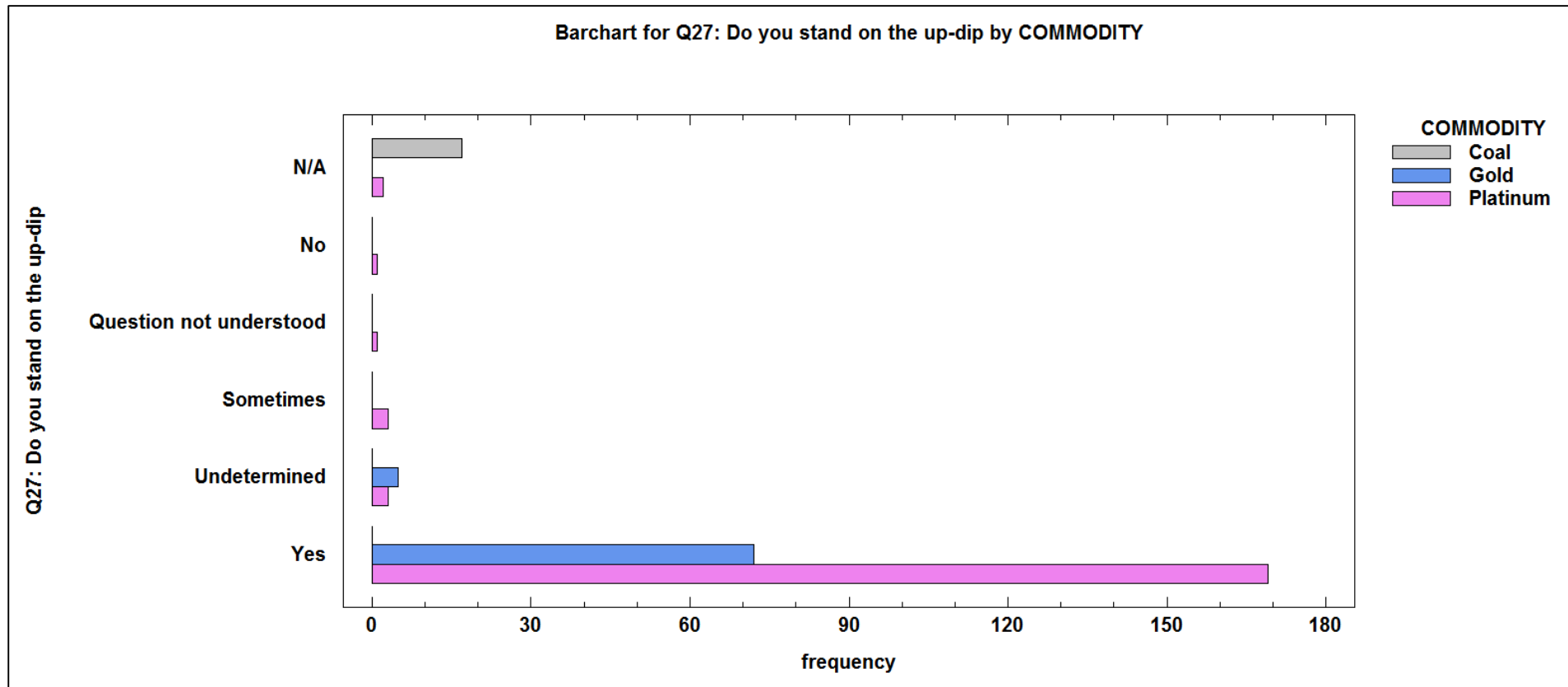


Figure 23: Frequency of responses to the question "Do you stand on the updip side when barring?" by Commodity



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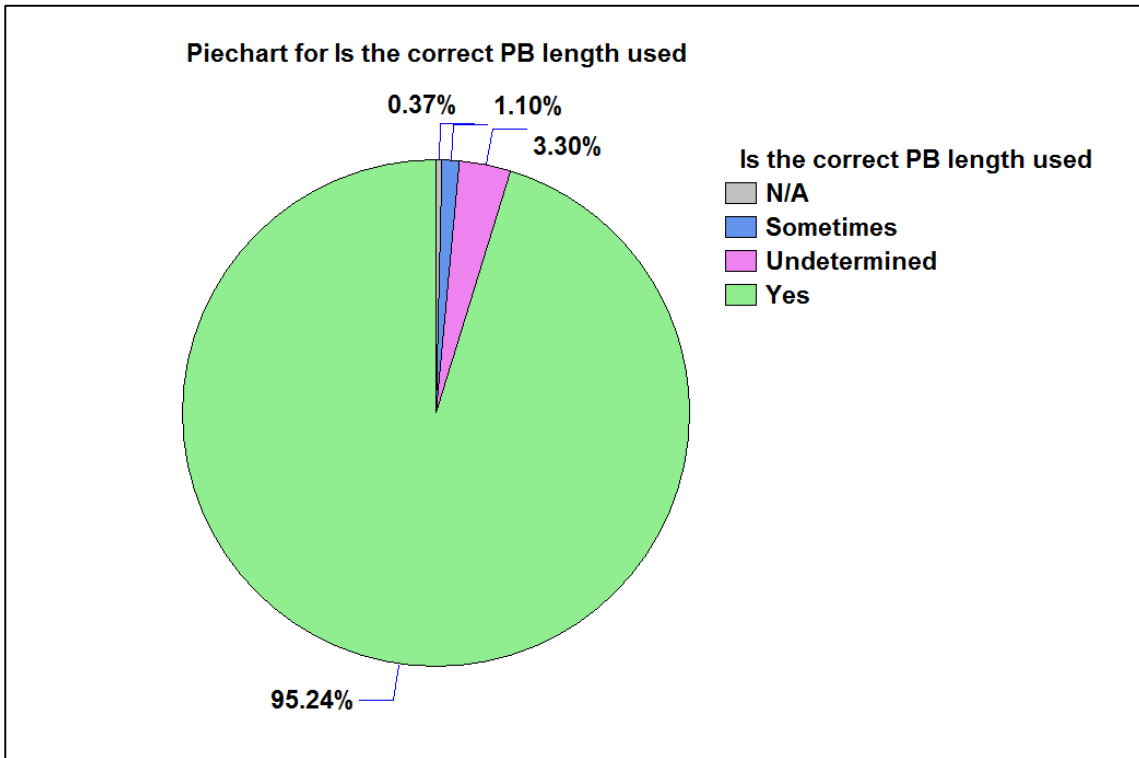


Figure 24: Percentage of responses to the question "Do you use the correct pinch bar length for the excavation size that you are barring in?"

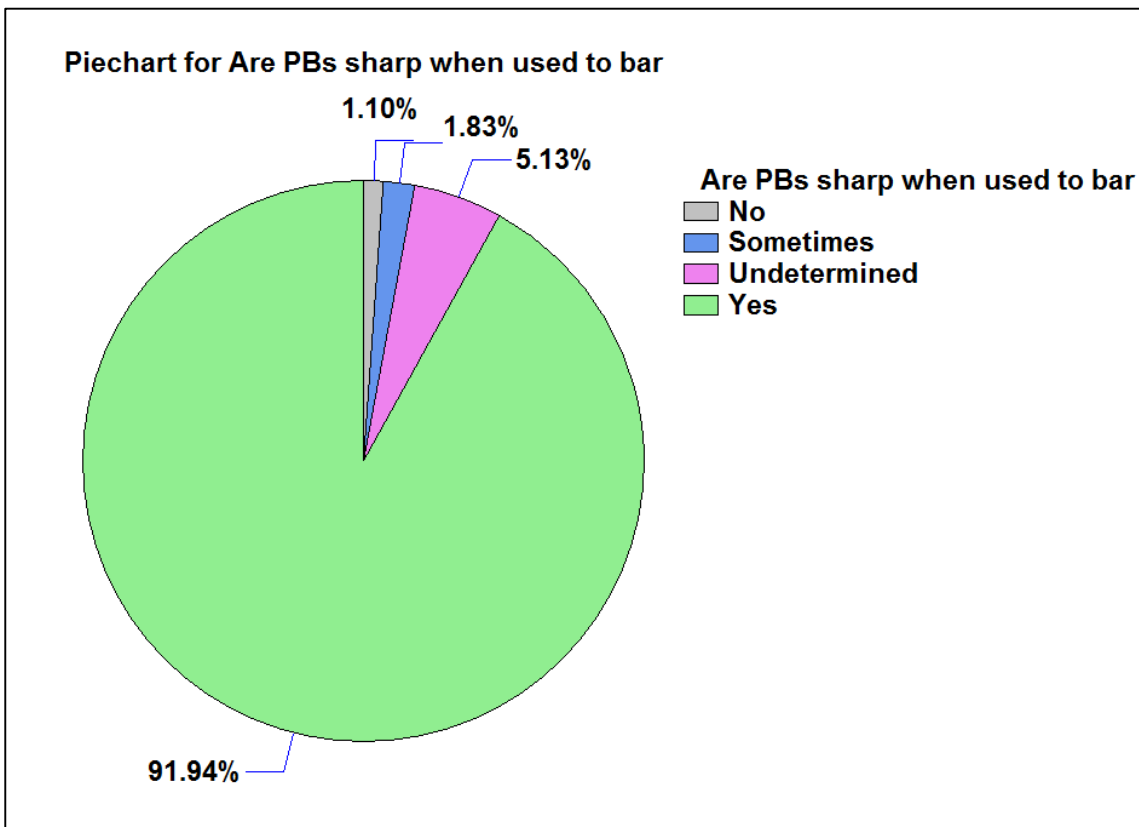


Figure 25: Percentages for responses to the question "Are the pinch bar ends sharp when you are barring?"

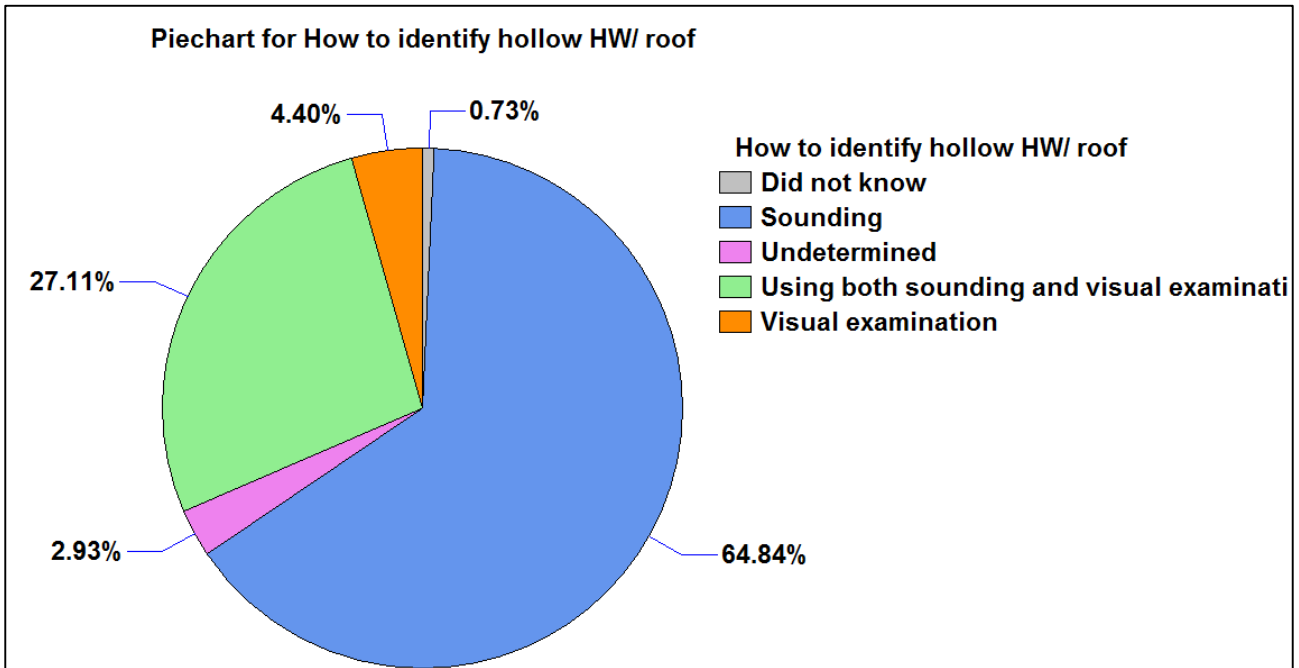


Figure 26: Percentage of responses to the question "What methods would you use to identify hollow hanging wall or roof?"

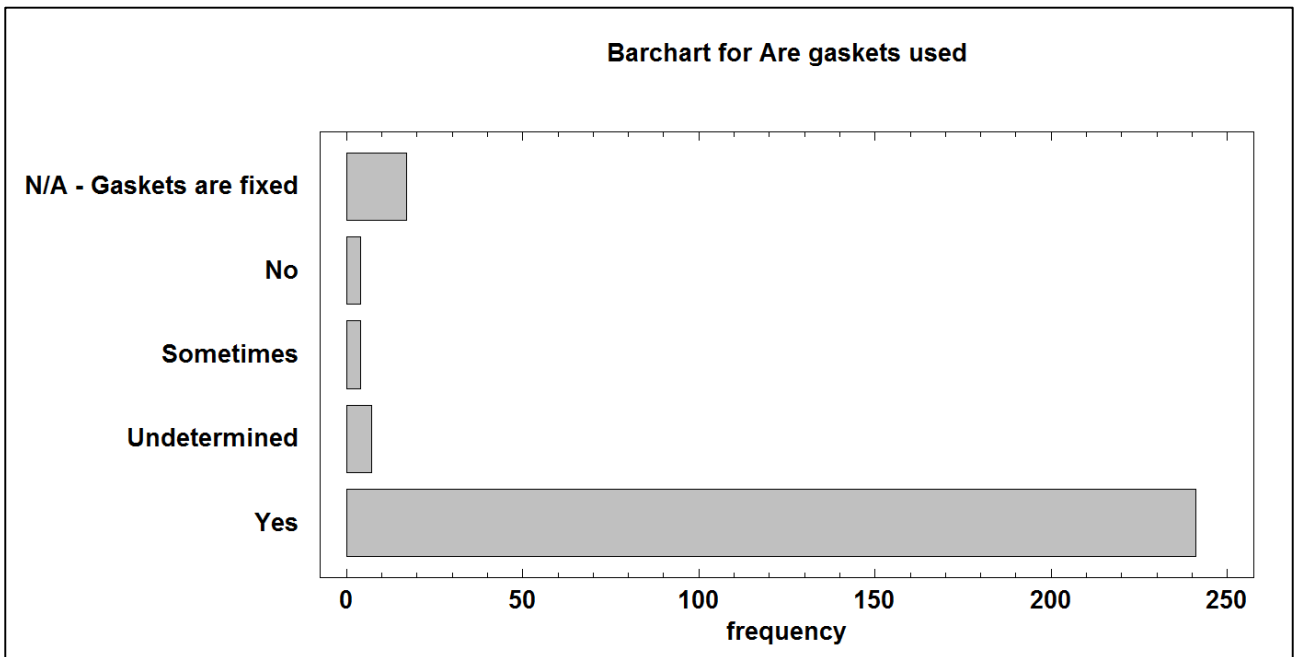


Figure 27: Frequency of responses to the question "Are gaskets used on the pinch bars when you bar?"

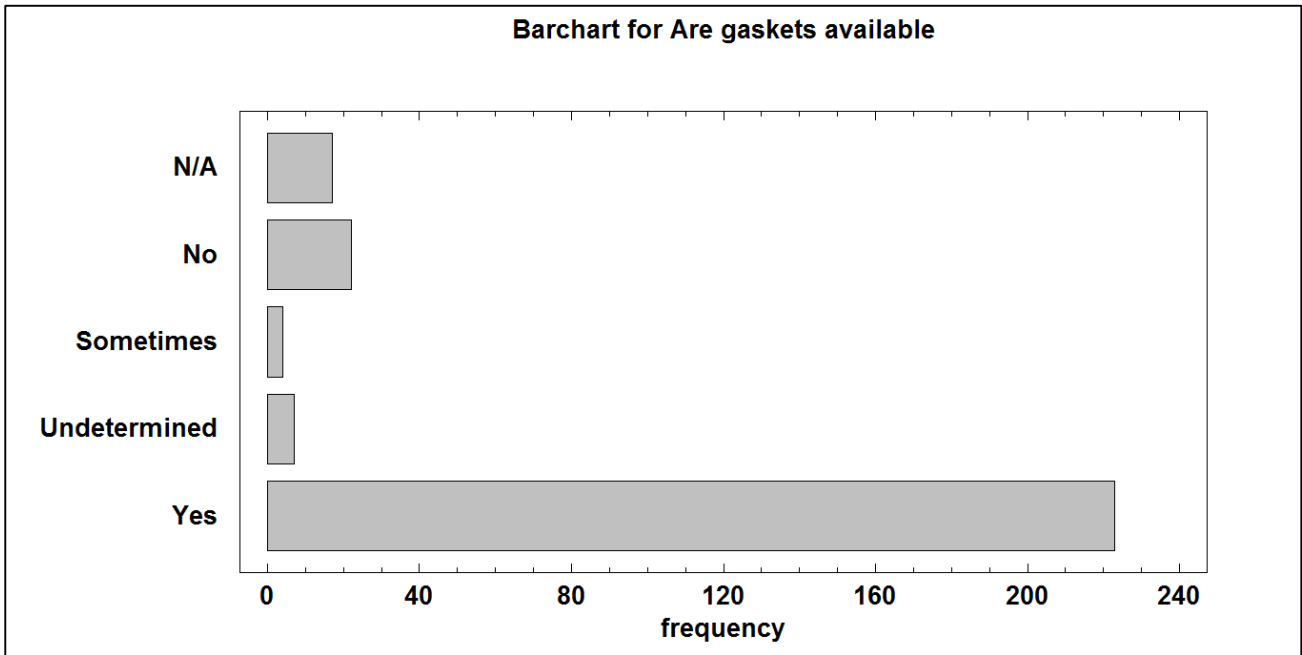


Figure 28: Frequency of responses to the question "Are gaskets easily available?"

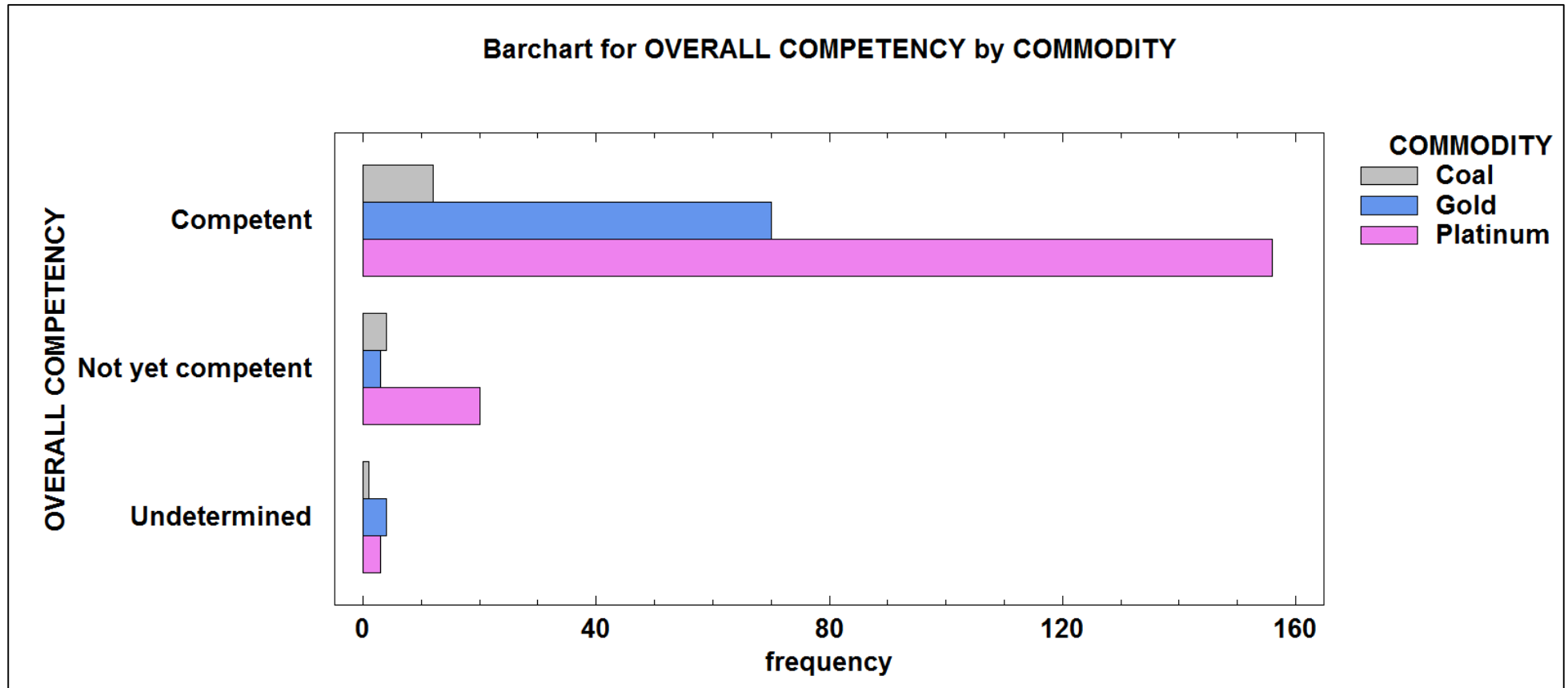


Figure 29: Frequency of Overall Competency on Barring by Commodity. This is based on knowledge of mine specific rules, demonstrating understanding of why barring is important and actual observations on barrers

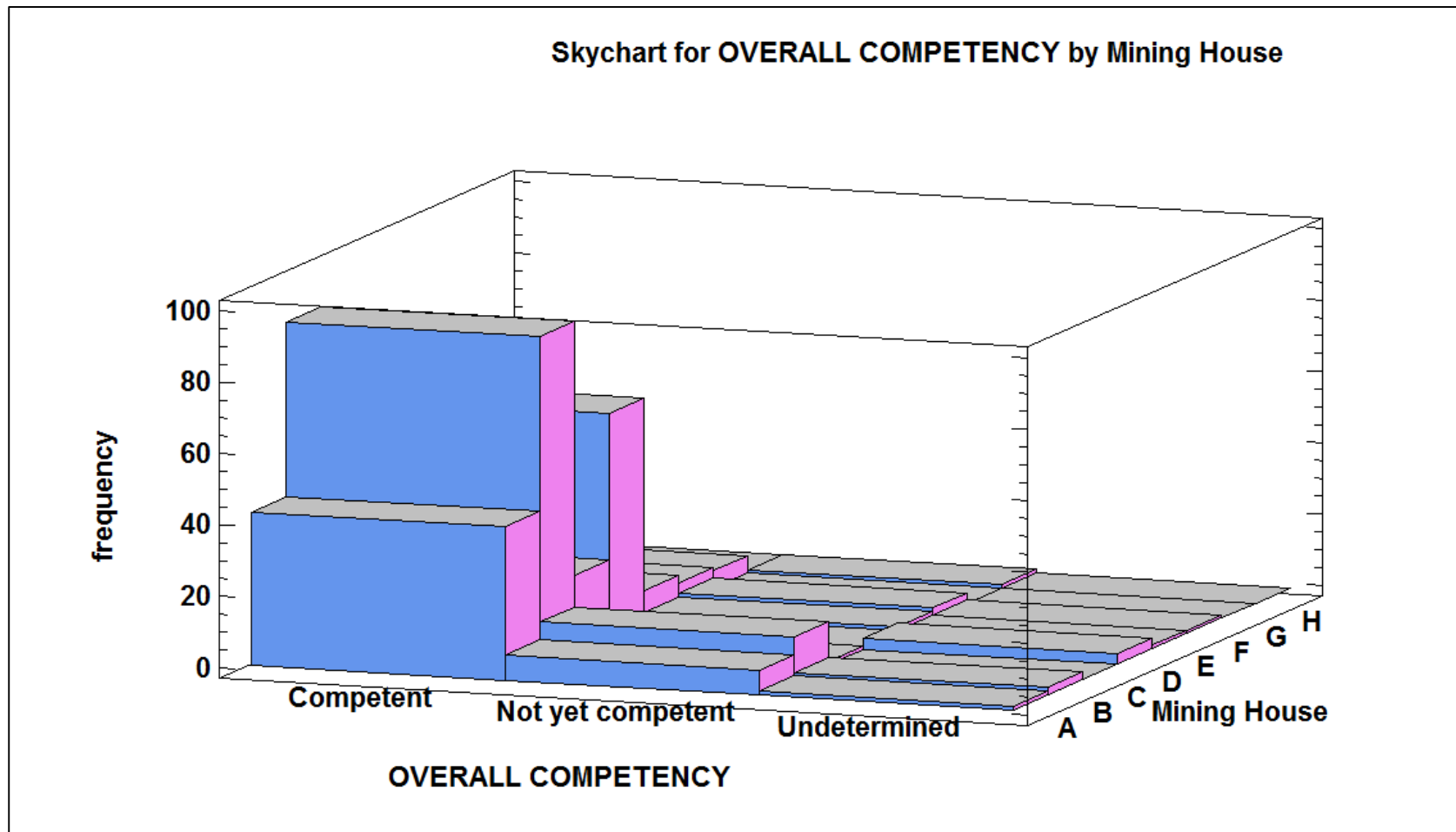


Figure 30: Frequency of Barring Competency per Mining House



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Table 1: Frequency Table for OVERALL COMPETENCY by Mining House

	A	B	C	D	E	F	G	H	Row Total
Competent	43	92	21	62	8	6	5	1	238
	15.75%	33.70%	7.69%	22.71%	2.93%	2.20%	1.83%	0.37%	87.18%
Not yet competent	7	12	1	1	2	3	0	1	27
	2.56%	4.40%	0.37%	0.37%	0.73%	1.10%	0.00%	0.37%	9.89%
Undetermined	1	2	0	3	1	1	0	0	8
	0.37%	0.73%	0.00%	1.10%	0.37%	0.37%	0.00%	0.00%	2.93%
Column Total	51	106	22	66	11	10	5	2	273
	18.68%	38.83%	8.06%	24.18%	4.03%	3.66%	1.83%	0.73%	100.00%

This table shows how often the 3 values of OVERALL COMPETENCY occur together with each of the 8 values of Mining House. The first number in each cell of the table is the count or frequency. The second number shows the percentage of the entire table represented by that cell. For example, there were 43 times when OVERALL COMPETENCY equaled Competent and Mining House equaled A. This represents 15.7509% of the total of 273 observations.