Opinions about How Dangerous Industrial Air Pollution is to the Environment Based on Social Class and Race

Kirsten A. Yoder

Department of Anthropology, Sociology, Criminal Justice, and Social Work, Commonwealth University of Pennsylvania

SOCI 309: Social Stratification

Dr. Megumi Omori

May 12th, 2025

Social Class and Race Opinions about How Dangerous Industrial Air Pollution is to the Environment

Industrial air pollution is becoming increasingly problematic for the environment and for society, especially for those in low social class neighborhoods and neighborhoods that experience concentrated disadvantages. Race and social class play important roles in the amount of exposure to industrial air pollution a person receives. Lower-class neighborhoods and communities experiencing poverty are often much closer in proximity to industrial plants that emit dangerous pollutants (Mikati, Benson, Luben, Sacks, & Richmond-Bryant, 2018).

Industrial neighborhoods and lower-class neighborhoods often have a higher concentration of racial and ethnic minorities, specifically Black people. High levels of environmental exposure to such dangerous air pollutants can cause long-term health problems for those exposed to it. The connection between race and social class predicts how a person feels about the dangers of industrial air pollution to the environment (Mohai, Lantz, Morenoff, House, & Mero, 2009).

This paper will discuss relevant literature attesting to racial disparities in neighborhoods as well as neighborhoods differentiated by social class and the close proximity as well as the frequency of exposure to industrial air pollutants, the methodology used to support relevant literature, a summary of the connections and findings of both the literature and methodology, and finally a synopsis or conclusion of everything discussed in the essay.

Literature Review

Health and Mortality Rate

In 2021, The United Nations Human Right's Council declared access to and habitation of an environment without industrial pollution was a fundamental human right. Prolonged and frequent exposure to industrial air pollutants has several severe health implications and even increases mortality rate for those living in such a polluted environment. Exposure to industrial air pollutants compromises the immune system and makes individuals more susceptible to illnesses such as viruses, bacterial infections, respiratory or lung disease, chronic obstructive pulmonary disease, cardiovascular disease, dementia, asthma, stroke and cancer. There are no safe levels of exposure to industrial air pollution (Zareef, 2021).

Laditka and Laditka (2016) report mortality rate based on the health conditions listed above. This study is an examination of respondents aged 55 who report being diagnosed with an illness which corresponds with the percent of remaining life while living with the disability. African American men who report experiencing a stoke have a life expectancy at around 76 years with 57% of their remaining life dealing with disability. White men with the same factor have a life expectancy of around 78 years with about 53% of their remaining life experiencing disability. African American women and White women both have a life expectancy lower than that of their male counterparts if the experience a stroke because strokes are usually fatal to women.

Similar to the statistics regarding stroke, African American men experiencing heart disease have a life expectancy of around 75 years with 40% of remaining years living with disability. African American women also have a life expectancy of around 75 years with heart disease, almost 40% of which will be impacted by disability. White men with heart disease have a life expectancy of around 78 years with around 31% of remaining life spent with disability.

White women have a life expectancy of around 76 years with heart disease in which 39% of remaining life is spent with disability. This trend of life expectancy with disease is similar throughout the study with the other diseases listed. Without any conditions at all, African American men have a life expectancy of 79 years, African American women have a life expectancy of around 82 years, White men have a life expectancy of around 84 years, and White women have a life expectancy of around 87 years (Laditka & Laditka, 2016). Percent of remaining life for each without any conditions is not significant ranging from 11%-12%. Exposure to industrial air pollutants significantly increases an individual's chances of developing one of the conditions listed above, and in turn, significantly increases an individual's mortality rate. African Americans may have a lower life expectancy due to the concentration and overrepresentation of African Americans in lower class neighborhoods and communities living in poverty.

Race, Social Class, and Neighborhoods

Oliver and Shapiro (2006) suggest that African Americans are still facing the same systematic barriers structured throughout history for generations. One example of this is de jure discrimination. In the past, Americans moved from a concentration of society living in cities and urban areas towards people moving into the suburbs; however, not everyone could afford to move to the suburbs. Super highways were built for people moving to the suburbs in order to accommodate to their transportation needs. Tax breaks were provided to upper and middle class people who wanted to move to the suburbs, free of urban industrial facilities and without risks of exposure to air pollution.

Those who could not afford to move, typically lower-class African Americans, were forced into mass constructed subsidized housing in cities controlled and operated by slum lords. Cities and deserted urban areas also happen to be where many of the industrial air polluting facilities are located. The Federal Housing Authority's Home Owners Loan Corporation made it almost impossible for poor African Americans to move out of urban life. They claimed that to keep a neighborhood stable, communities must consist of the same social class and race. This meant that poor African Americans were not "allowed" to migrate into rich White neighborhoods (Oliver and Shapiro, 2006).

One study showed that of the respondents living within 1 mile of a polluting industrial facility, 38.1% of those respondents were Black compared to 28.4% of those who were White. 88.4% of the respondents in the study were White and 11.6% of respondents were Black. Even though there is a higher amount of White respondents, there is still a higher concentration of Black participants, specifically lower-class and poor Black individuals, living within 1 mile of a polluting industrial facility. The study also shows that people with income of less than $15,000 per year and without a high school diploma were significantly more likely to live within a mile of a polluting industrial facility than those whose incomes were above $40,000 per year and those with diplomas or college degrees. This shows that low-class individuals are much more likely to live closer to a polluting industrial facility than those of middle-class and upper-class status (Mohai et al., 2009).

Authors Mirowsky and Ross (2012) believe that because many lower-class individuals lack education, those individuals did not develop crucial skills to help them combat the stress of living in poverty. Individuals who develop learned effectiveness from pursuing education are better at identifying and avoiding risky situations, avoiding bad and unhealthy habits, and better

manage problems that arise. Because many lower-class individuals are uneducated or possess minimal education do not know how to hand situations in a healthy way. Many lower-class individuals do not have the knowledge to improve their situations. Many individuals in this situation turn to drugs or unhealthy behaviors to cope with the stress of poverty. Forming unhealthy habits also decreases a person's overall health and increases the need for resources such as health care, which lower-class and poor individuals may not have access to.

Lower-class individuals did not develop the means to increase their income and access to resources due to the lack of education that teaches such methods. Education helps give individuals control over their lives and the events in it that occur. Lower-class individuals have very little control over their day to day lives and cannot rise in class ranking (Mirowsky and Ross, 2012). If lower-class and poor individuals do not have the education and the resources to move and improve their situations, they are stuck living in low-income neighborhoods that are greatly affected by things such as industrial air pollution.

Proximity Burden by Race and Social Class

Another study compared percentage of facility emission burden, level at which an individual suffers from industrial facility emissions, to demographic data such as race and level of poverty. The study then measured residential proximity to air polluting facilities in order to accurately assess how much of the population and of which demographic is experiencing the most facility emission burden. Black respondents were found to have the highest facility emission burden with a burden percentage of 34.5% of which is 1.54 times greater than that of any other respondent race. Blacks also made up the smallest portion of the respondent population representing only 12%. White respondents made up 63% of the respondent population and only had a facility emission burden of 18.4% (Mikati et al., 2018). This shows that Black respondents face a significant overrepresentation of individuals who reside within 2.5 miles of a polluting industrial facility.

The study also examines poverty level in regards to facility emission burden. 85% of the population above the poverty line had a facility emission burden of 20.9% while the other 15% of the population living below the poverty line have a facility emission burden of 30.3%. Those living in poverty are significantly more likely to live within 2.5 mile of a polluting industrial facility as well as experience facility emission burdens (Mikati et al., 2018).

Authors Lareau and Conley (2008) state that some authors believe it is a mistake to examine social class without also taking into account other social forces such as race. Race and social class often have common avenues in which they connect and intertwine. Social class is built on and greatly influenced by the same social structures that uphold the stereotypes and generational discrimination of race. For example, Black people are more likely to live in lower-class or poor neighborhoods than White people. Lower-class and poor people are more likely to live in closer proximity to polluting industrial facilities and experience significant facility emission burden. Race and social class influence opinions about the dangers of industrial air pollution.

Methodology

Data

The General Social Survey Cumulative Data File 1972-2022 was used to complete the research necessary for this paper. The General Social Survey began in 1972, and it is a

cumulative and national representative survey. It is used to measure and record how American attitudes, opinions, and feelings about topics in society change. The data gathered from the GSS is presented by the National Opinion Research Center (NORC) at the University of Chicago. The data presented compares samples from 2000, 2010, and 2018 when not controlling for race and examines the year 2018 when controlling for race. Respondents were asked to report how dangerous they felt industrial air pollution is to the environment based on social class and race. The choices were seen as 1-extremely dangerous, 2-very dangerous, 3-somewhat dangerous, 4-not very dangerous, 5-not dangerous at all. The total sample size without controlling for race is 1,075.4 for the year 2000, 1,214.7 for the year 2010, and 648.0 for the year 2018. The total sample size for the year 2018 when controlling for race is 647.9 with White respondents representing 560.3 and Black respondents representing 87.6.

Variables

The independent variables consisted of race and social class for the year 2018. For the White participants, 33.8 reported they were lower-class, 218.3 reported being working-class, 292.2 reported being middle-class, and 16.0 reported being upper-class. For the Black participants, 5.8 of the respondents reported belonging to the lower-class, 46.0 reported being working-class, 33.3 reported being middle-class, and 2.5 reported being upper-class. While there are many more White respondents who participated than Black participants, both majority of the White and Black respondents identified themselves as either working-class or middle-class.

The dependent variable for the research is respondent opinion about how dangerous industrial air pollution is to the environment (indusgen). Opinions about the levels of danger that industrial air pollution poses to the environment vary by year as well, likely influenced by the increasingly modern recognition of the dangers of industrial air pollution.

Results

Race and Social Class Findings

Tables 1 and 2 show a comparison of how dangerous White respondents feel industrial pollution is to the environment versus how dangerous Black respondents feel it is from the year 2018. Table 1 shows that 42.9% of White lower-class respondents feel that industrial air pollution is extremely dangerous to the environment. 42.1% of White working-class and 31.4% of White middle-class respondents feel as though industrial air pollution is extremely dangerous and only 13.4% of White upper-class feel as though it is extremely dangerous. Only 1.0% of White lower-class, 3.3% of White working-class, and 2.6% of White middle-class believe industrial air pollution is not very dangerous to the environment; however, 19.0% of White upper-class believe that industrial air pollution is not very dangerous to the environment.

Of the Black lower-class respondents, 56.1% feel as though industrial air pollution is very dangerous to the environment while Black working-class have 35.6%, Black middle-class have 43.5%, and Black upper-class have 30.3%. 0% of Black lower-class, 0% of Black working-class, 2.2% of Black middle-class, and 0% of Black upper-class believe that industrial air pollution is not very dangerous to the environment.

Graph 2 shows that the majority of Black respondents at any class level believe that industrial air pollution is either extremely dangerous to the environment or very dangerous. Almost no Black respondents believe that industrial air pollution is not very dangerous to the environment. Graph 1 shows that most of the White respondents at any class level believe that

industrial air pollution is very dangerous; however, there is a significant representation of White upper-class participants that believe industrial air pollution is not very dangerous. When comparing Graph 1 and Graph 2, it is evident that White participants at any class level have greater representation for believing that industrial air pollution is not very dangerous than any class level of Black participants. There is a higher percentage of Black respondents who believe industrial air pollution is extremely dangerous than there are White respondents.

Findings for Social Class by Different Years

When comparing respondent answers from 2000, 2010, and 2018, Tables 3, 4, and 5 show evidence that respondent opinions about how dangerous industrial air pollution is to the environment change throughout time. In 2000, only 25.6% of lower-class respondents reported that industrial air pollution is extremely dangerous and 32.8% of upper-class respondents agreed. 2.4% of lower-class respondents and 0% of upper-class respondents felt that industrial air pollution was not very dangerous to the environment. However, the percentage of lower-class respondents who think industrial air pollution is extremely dangerous increases to 36.5% (2010) and increases again to 44.9% (2018). On the other hand, upper-class opinions about industrial air pollution being extremely dangerous significantly decreases from 32.8% (2000), 10.3% (2010), and increases slightly in 2018 to 15.6%.

The number of lower-class respondents who answered not dangerous at all or not very dangerous decreases as years increase from 2000 to 2018; however, the number of upper-class respondents who answered not dangerous at all or not very dangerous increases as years increase. Upper-class respondents have a total of 16.4% of respondents who think industrial air pollution is not very dangerous compared to only 0.8% of lower-class respondents. Tables 3, 4, and 5 show a greater percentage of lower-class respondents than upper-class respondents who believe industrial air pollution is extremely dangerous or very dangerous to the environment. More upper-class respondents than lower-class respondents believe industrial air pollution is somewhat dangerous or not very dangerous to the environment.

Discussion

The data reported from the General Social Survey is consistent with the findings in the literature provided. Both the literature and the data concur that, without controlling the data for race, individuals who belong to the lower-class believe industrial air pollution is extremely dangerous to the environment more than upper-class individuals. This can be seen when looking at Tables 3, 4, and 5. Lower-class individuals are also at greater risk for developing severe health conditions and disabilities as a result of frequent exposure to industrial air pollution as well as close residential proximity.

Attitudes about the dangers of industrial air pollution to the environment changed greatly from 2000 to 2018. This is likely because society has recently identified industrial air pollution as a major concern to the environment and to the people exposed to it.

In the year 2000, people of all social classes were generally not very concerned about how dangerous industrial air pollution is to the environment, but all social classes agreed for the most part that industrial air pollution was dangerous to an extent (Table 3). In 2010, lower-class individuals become significantly more concerned with the dangers of industrial air pollution while upper-class participants reported feeling significantly less concerned, so much so that only 10.3% of upper-class felt that industrial air pollution was extremely dangerous to the

environment (Table 4). In 2018, lower-class belief that industrial air pollution was extremely dangerous rose again to 44.9% and upper-class belief only rose to 15.6%. 16.4% of upper-class individuals did believe that industrial air pollution is not very dangerous to the environment while only 0.8% of lower-class individuals agreed with that notion.

Lower-class individuals are much more likely to be concerned about the dangers of industrial air pollutants to the environment and upper-class individuals are the least concerned (Table 5). This is largely due to the fact that upper-class individuals are not the people living in close proximity to polluting industrial facilities and upper-class individuals are not frequently exposed to the pollutants. Upper-class individuals are much more educated and have developed the means to deal with problems in a healthy manner. Lower-class individuals did not develop resources such as learned effectiveness and have very little control over their lives. Lower-class individuals do not have the knowledge to leave their unhealthy neighborhoods and are often stuck living in places like subsidized housing that are affected by things such as industrial air pollution (Mirowsky and Ross, 2012). Upper-class participants are not very concerned about the health concerns and consequences of frequent exposure to industrial air pollution because it is typically lower-class individuals who are exposed to it and suffer the most.

Race also plays a very important factor in which individuals are residing close to industrial air pollution facilities and who is being exposed frequently. Tables 1 and 2 show that even though there was a higher number of White participants, the Black participants still have a higher percentage who believe industrial air pollution is either extremely dangerous or very dangerous to the environment than White participants do. Graph 2 shows that Black-lower class respondents have the highest percentage for concern that industrial air pollution is extremely dangerous to the environment and Graph 1 shows that White upper-class participants have the highest participants reporting that industrial air pollution is not very dangerous. Only 2 Black upper-class respondents reported that industrial air pollution is not dangerous at all.

Black lower-class respondents have a higher concern for industrial air pollution being extremely dangerous to the environment because the lower-class communities have an overrepresentation of Black individuals and minorities residing in close proximity to and suffering significant health consequences from frequent exposure to polluting industrial facilities. While White lower-class participants are also concerned that industrial air pollutants are extremely dangerous to the environment, there is a much lower concentration of White individuals living with the facility emission burden than number of Black participants who live with it, according to authors Mikati, et al. (2018).

One implication of the study is that there are not a significant number of Black respondents. The sample size is a very small number and representation of Black individuals. When comparing Black respondent sample size with White respondent sample size, it is not concerning that White have a much higher number of respondents because there is a larger amount of White people in the U.S. than there are Black people. However, it is evident based on the data and literature provided that opinions about how dangerous industrial air pollution is to the environment greatly depends on an individual's social class and is also affected by a person's racial identity. Upper-class individuals of either race, but slightly higher for White upper-class, are less concerned about the dangers of industrial air pollution to the environment.

Lower-class respondents, specifically Black lower-class respondents, are more concerned about the dangers of industrial air pollution because they are the individuals living within the

closest proximity to polluting industrial facilities and are more likely to suffer severe health consequences. Despite the stereotypes that upper-class individuals are more educated about environmental topics, upper-class individuals are not concerned because they are not the individuals actually experiencing the effects of industrial air pollution. Attitudes about how dangerous industrial air pollution is to the environment have increased significantly for lower-class participants from 2000 to 2018 because of the modern increase of awareness about the issue. Upper-class individuals have decreased in concern for the dangers of industrial pollution to the environment from 2000 to 2018 due to upper-class individuals moving to the suburbs of America and away from urban life where industrial air polluting facilities are typically located.

References

Ganguli, M., Jacobsen, E., Song, R., Wood, I., Kinnee, E. J., Hughes, T. F., . . . Chang, C.-C. H. (2025). Social determinants of health and mild cognitive impairment in a diverse community sample. *Journal of the American Geriatrics Society, 73*, 367-378. doi:10.1111/jgs.19251

Laditka, J. N., & Laditka, S. B. (2016). Associations of multiple chronic health conditions with active life expectancy in the United States. *Disability and Rehabilitation, 38*(4), 354-361. doi:10.3109/09638288.2015.1041614

Lareau, A., and Conley, D. (2008). Social class: how does it work? *Russell Sage Foundation*, 3-15.

Mikati, I., Benson, A. F., Luben, T. J., Sacks, J. D., & Richmond-Bryant, J. (2018). Disparities in distribution of particulate matter emission sources by race and poverty status. *American Journal of Public Health , 108*(4), 480-485. doi:10.2105/AJPH.2017.304297

Mirowsky, J. and Ross, C. E. (2012). Education, social status, and health. *Aldine Transaction*, 197-206.

Mohai, P., Lantz, P. M., Morenoff, J., House, J. S., & Mero, R. P. (2009). Racial and socioeconomic disparities in residential proximity to polluting industrial facilities: evidence from the america's changing lives study. *American Journal of Public Health, 99*(3), 649-656. doi:10.2105/AJPH.2007.131383

Oliver, M., and Shapiro, T. (2006). Black wealth/White wealth: a new perspective on racial inequality. *Routledge*, 11-33.

Zareef, A. (2021). Health impacts of air pollution and climate change. *Khyber Medical University Journal, 13*(3), 254-256. Retrieved from https://doi.org/10.35845/kmuj.2021.22287

Appendix

Table 1

Statistics for race = 1(white)						
Cells contain: **-Column percent** -Weighted N		**class**				
		1 lower class	2 working class	3 middle class	4 upper class	***ROW TOTAL***
indusgen	1: extremely dangerous	**42.9** 14.5	**42.1** 92.0	**31.4** 91.8	**13.4** 2.1	***35.8*** *200.4*
	2: very dangerous	**47.8** 16.2	**33.7** 73.5	**37.9** 110.8	**34.2** 5.5	***36.8*** *205.9*
	3: somewhat dangerous	**8.3** 2.8	**20.9** 45.7	**27.2** 79.6	**33.4** 5.3	***23.8*** *133.4*
	4: not very dangerous	**1.0** .3	**3.3** 7.2	**2.6** 7.5	**19.0** 3.0	***3.2*** *18.1*
	5: not dangerous at all	**.0** .0	**.0** .0	**.8** 2.5	**.0** .0	***.4*** *2.5*
	COL TOTAL	***100.0*** *33.8*	***100.0*** *218.3*	***100.0*** *292.2*	***100.0*** *16.0*	***100.0*** *560.3*

Table 2

Statistics for race = 2(black)						
Cells contain: **-Column percent** -Weighted N		**class**				
		1 lower class	2 working class	3 middle class	4 upper class	***ROW TOTAL***
indusgen	1: extremely dangerous	**56.1** 3.3	**35.6** 16.4	**43.5** 14.5	**30.3** .7	***39.8*** *34.9*
	2: very dangerous	**37.9** 2.2	**30.5** 14.0	**32.8** 10.9	**69.7** 1.7	***33.0*** *28.9*
	3: somewhat dangerous	**.0** .0	**32.5** 14.9	**21.5** 7.2	**.0** .0	***25.2*** *22.1*
	4: not very dangerous	**.0** .0	**.0** .0	**2.2** .7	**.0** .0	***.8*** *.7*
	5: not dangerous at all	**6.0** .3	**1.5** .7	**.0** .0	**.0** .0	***1.2*** *1.0*
	COL TOTAL	***100.0*** *5.8*	***100.0*** *46.0*	***100.0*** *33.3*	***100.0*** *2.5*	***100.0*** *87.6*

Year - 2000

Table 3

Statistics for year = 2000						
Cells contain: -**Column percent** -Weighted N		**class**				
		1 lower class	2 working class	3 middle class	4 upper class	***ROW TOTAL***
indusgen	1: extremely dangerous	**25.6** 13.4	**29.8** 137.6	**27.6** 145.1	**32.8** 11.5	***28.6*** *307.7*
	2: very dangerous	**38.9** 20.4	**36.3** 167.7	**36.2** 190.1	**42.8** 15.0	***36.6*** *393.3*
	3: somewhat dangerous	**33.2** 17.4	**31.6** 146.1	**32.9** 172.8	**24.4** 8.6	***32.1*** *344.9*
	4: not very dangerous	**2.4** 1.3	**2.4** 10.9	**2.9** 15.3	**.0** .0	***2.6*** *27.5*
	5: not dangerous at all	**.0** .0	**.0** .0	**.4** 2.1	**.0** .0	***.2*** *2.1*
	COL TOTAL	***100.0*** *52.5*	***100.0*** *462.4*	***100.0*** *525.4*	***100.0*** *35.1*	***100.0*** *1,075.4*

Year - 2010

Table 4

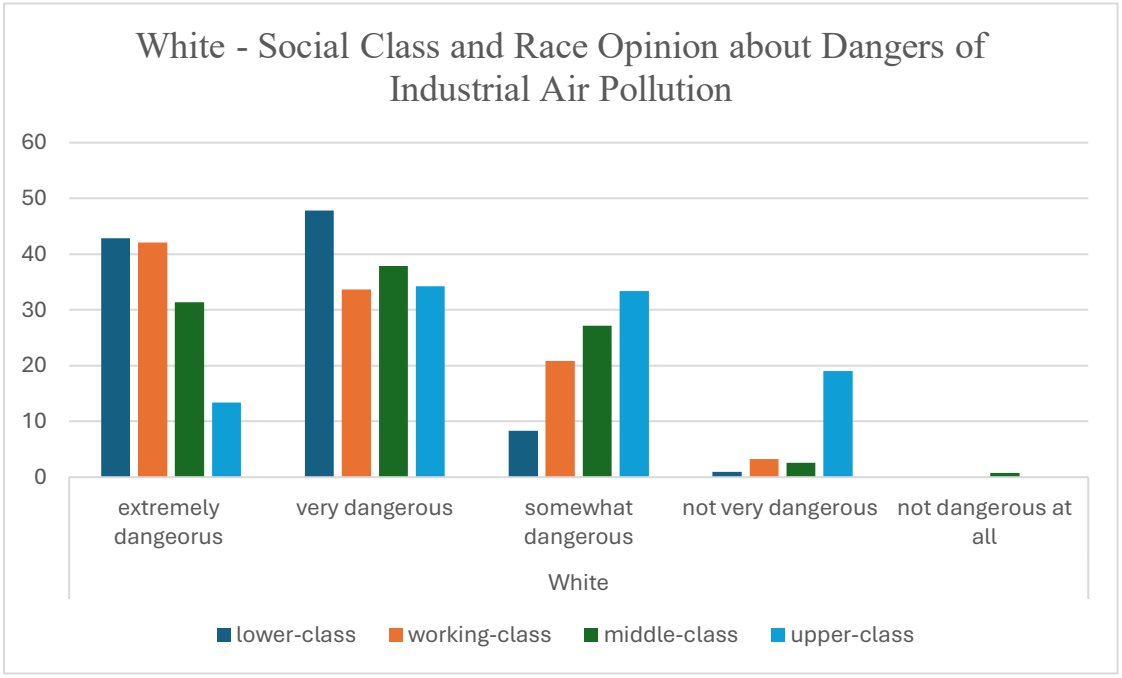
Statistics for year = 2010						
Cells contain: -**Column percent** -Weighted N		**class**				
		1 lower class	2 working class	3 middle class	4 upper class	***ROW TOTAL***
indusgen	1: extremely dangerous	**36.5** 34.4	**27.0** 150.0	**22.0** 118.5	**10.3** 2.7	***25.2*** *305.5*
	2: very dangerous	**42.3** 39.9	**37.5** 208.4	**34.1** 183.9	**51.0** 13.2	***36.7*** *445.4*
	3: somewhat dangerous	**19.6** 18.4	**31.6** 175.3	**38.8** 209.2	**28.6** 7.4	***33.8*** *410.3*
	4: not very dangerous	**1.7** 1.6	**3.6** 20.1	**5.1** 27.8	**8.4** 2.2	***4.3*** *51.7*
	5: not dangerous at all	**.0** .0	**.3** 1.4	**.0** .0	**1.6** .4	***.1*** *1.8*
	COL TOTAL	***100.0*** *94.3*	***100.0*** *555.3*	***100.0*** *539.4*	***100.0*** *25.8*	***100.0*** *1,214.7*

Year - 2018

Table 5

Statistics for year = 2018						
Cells contain: -**Column percent** -Weighted N		**class**				
		1 lower class	2 working class	3 middle class	4 upper class	***ROW TOTAL***
indusgen	1: extremely dangerous	**44.9** 17.8	**41.0** 108.3	**32.7** 106.3	**15.6** 2.9	***36.3*** *235.3*
	2: very dangerous	**46.3** 18.4	**33.1** 87.5	**37.4** 121.7	**39.0** 7.2	***36.2*** *234.8*
	3: somewhat dangerous	**7.1** 2.8	**22.9** 60.6	**26.7** 86.8	**29.0** 5.3	***24.0*** *155.5*
	4: not very dangerous	**.8** .3	**2.7** 7.2	**2.5** 8.2	**16.4** 3.0	***2.9*** *18.8*
	5: not dangerous at all	**.9** .3	**.3** .7	**.8** 2.5	**.0** .0	***.5*** *3.5*
	COL TOTAL	***100.0*** *39.7*	***100.0*** *264.4*	***100.0*** *325.5*	***100.0*** *18.4*	***100.0*** *648.0*

Graph 1



Graph 2