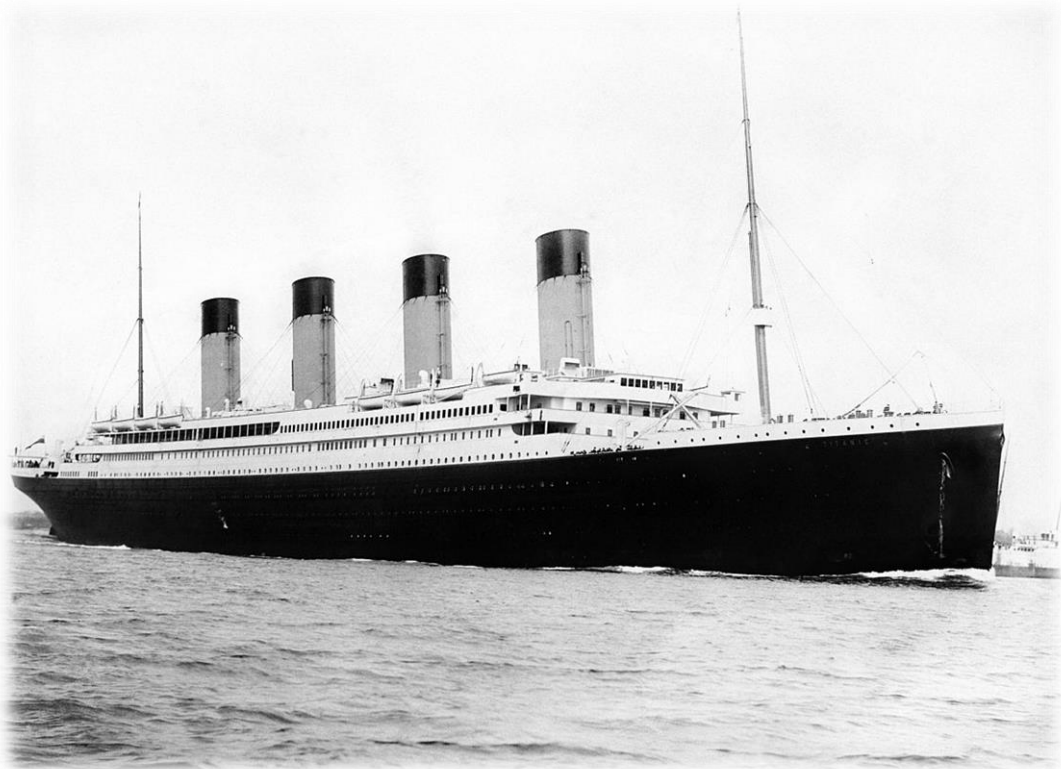




**Universiteit Utrecht**

## **Prestige, strength or altruism?**

**An investigation into the role of occupation on the chance of survival on  
board of the RMS Titanic**



Bachelor thesis Sociology

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## OCCUPATION AND CHANCE OF SURVIVAL

### **Abstract**

Since the sinking of the Titanic, many researchers have investigated in greater detail who survived the disaster and who did not. The exceptional high rate of survival of women and children on board of the Titanic, in contrast to other maritime disasters, is explained by the strong adherence to the 'Women and Children first' norm (Frey, Savage & Torgler, 2010a, 2010b, 2011; Elinder & Erixson, 2012). However, male passengers did not receive this preference treatment and were thus allocated to their own resources in order to survive the disaster. Many research has already focused on the role of passenger class and the chance of survival (Frey et al., 2010a, 2010b, 2011; Elinder & Erixson, 2012). This thesis seeks to examine the role of the resources of male passengers on the chances of survival in greater detail. These resources are investigated by means of occupation. Three hypotheses are derived; one about the level of prestige, the level of physical abilities, and the level of caring traits someone has in their occupation. Both quantitative and qualitative data with information about passengers of the Titanic is used. Regression analyses are conducted to examine the relations between different occupational resources and the chance of survival. Results show that both prestigious occupations, physical occupations, and caring occupations do not significantly influence the chance of survival of a male passenger on board of the Titanic. Implications of these findings are discussed.

*Keywords:* occupation, resources, life-threatening situations, survival, Titanic.

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## OCCUPATION AND CHANCE OF SURVIVAL

### Prestige, strength or altruism?

An investigation into the role of occupation on the chance of survival on board of the RMS  
Titanic

The sinking of the 'unsinkable' RMS Titanic is one of the most well-known maritime disasters. Over 1500 people died when the ship struck an iceberg on April 15th in 1912. Because the ship was thought to be unsinkable, the ship missed an accurate sinking procedure and did not have enough lifeboats to get everyone out of the sinking ship (Bijan, 2014). Soon it became clear that a remarkable phenomenon had taken place during the sinking of the ship; because of the adherence to the order 'Woman and Children First' [WCF] more than 70 percent of woman and children were saved (Elinder & Erixson, 2012; Frey et al., 2010a; Hall, 1986). This phenomenon demonstrates the power of internalised social norms, because even in life-threatening situations people seem to behave in socially expected manners instead of acting rational in a selfish sense (Elinder & Erixson, 2012).

Another remarkable fact was that most survivors of the disaster were first class passengers, and especially members of elite families. Upper class male passengers who did not survived the tragic disaster were seen as true heroes by the media, because they sacrificed themselves in order to save woman and children. However, middle and lower class deceased men were barely noticed in the media (Bijan, 2014). The way in which the media responded to the disaster forms a clear demonstration of the presence of a strict class society in the 20th century. Belonging to a wealthy family apparently offered advantages in life-threatening situations such as maritime disasters (Argyle, 1994; Goodman & Gareis, 1992).

Because the Titanic disaster gives more insight in how individuals behave collectively in life-threatening circumstances, a lot of social research has already been conducted on this topic (Elinder & Erixson, 2012; Frey, Savage & Torgler, 2010a; Hall, 1986). These studies investigated the determinants of survival, considering both individual attributes of the passengers (e.g., economic resources and physical strength), and the social aspects of the situation (e.g., the presence of the WCF norm). As mentioned before, female passengers and children had a relatively advantage over male passengers to survive, because of the WCF norm. All male passengers were more or less equal given the fact that they had to wait until the women and children were rescued; their chances of survival were mainly dependent on their individual traits and resources (Elinder & Erixson, 2012).

In the study of Frey et al. (2010a, 2010b) it was argued that male passengers with greater material and communicative resources would have had a greater probability of survival. They hypothesized that upper class passengers were more likely than middle and lower class

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passengers to have these resources because of their status and affluence (Frey et al., 2010a, 2010b). However, passenger classes on the Titanic were divided based on ticket price, and therefore passenger class only gives information about the financial capital of the male passengers (Elinder & Erixson, 2012; Frey et al., 2010a; 2010b; Hall, 1986). Financial capital is an important source of economic status, but this source does not completely determine someone's social status in society.

In this thesis we will investigate the role of male passenger's non-financial resources on the chance of survival in greater detail. We will extend the knowledge by using information of male passenger's occupation instead of passenger class. The reason for using the information of male passenger's occupation is twofold. Firstly, occupation is a more representative measure of status since it does not only tell something about the level of earnings, but also represents the extent of social prestige someone has (Argyle, 1994). Secondly, occupation provides information about an individual's personality traits and skills. Some traits or skills can be important in order to survive (Midlarsky & Jones, 2005; Visser & Roelofs, 2011). An individual's occupation tells something about the daily activities and circumstances of that person, and which social and technical skills are needed (Argyle, 1994). Some occupations require physical traits such as strength and height. Other occupations, such as caring professions, require a caring and empathetic personalities (Treiman, 1977).

We will focus on three dimensions of occupations which we seek to relate to the way people behave in life-threatening situations. These three dimensions of occupation are divided in the level of prestige a person acquires with that occupation, the level of physical abilities which are required within the occupation, and the level of caring traits which are required within the occupation. The main question of this thesis is:

*'How does the chance of survival depend on the occupation of male passengers on board of the RMS Titanic?'*

By using information about the occupation of Titanic male passengers, we will contribute to the large sociological literature about social determinants and differences in life chances. This thesis can be considered as scientifically and societal relevant for several reasons. First of all, this thesis will bring more insight in the way individuals behave in life-threatening circumstances in which resources are scarce and the pressure is extremely high. Because the Titanic is a controlled event, where all passengers on board had to deal with the same situational conditions, it can be seen as a natural field experiment. This means that the

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behaviour of passengers is not affected by exogenous factors. This enables us to investigate accurately who survived and what the underlying mechanisms were that caused the unequal life outcomes between passengers (Frey et al., 2011). Second of all, the use of occupation as a measure to predict individual life outcomes in an extreme situation has, to our knowledge, never been done before. Since occupation gives information about someone's resources, skills and characteristics we add a lot of useful information to the dataset of the Titanic. Third of all, this research will also bring more insight in the role of resources on differences in life outcomes and health inequalities in general. The theoretical approaches used in this thesis do not only hold for life-threatening situations, but also brings better understanding of the existence of social inequalities in society.

### **Theoretical background**

Investigating the sinking of the Titanic is linked to one of the head questions of sociology, namely the question of inequality. This question asks: Who gets what and why? On board of the RMS Titanic this question is asked in the most extreme form; who got to survive and, more importantly, why. The inequality of survival of male passengers on board of the Titanic can be explained by the different resources of passengers. To gain insight in what resources were important for survival and who had what kind of resources, we will first highlight sociological theories of the question of inequality. These theories explain what resources are important in daily-life, how these resources are divided over individuals and how this leads to different life-outcomes. After this we will look into the resources on board of the Titanic and explain the distribution of these resources by means of occupation.

Friedrich Engels and Karl Marx argue that inequality is caused by the unequal distribution of economic capital as a result of the capitalistic system (Abrahamson, 1981; Ultee et al., 2009). According to them, two groups can be divided in society, the ones with economic capital on one hand, and the working class without it on the other hand. They state that when a society becomes more dependent on machines instead of manpower, and the competition between individuals increases, the group with economic capital gains more power over the working class. This power results in lower wages for the last group, and thus a growing inequality between the two groups (Abrahamson, 1981; Lenski & Nolan, 1995). The growing inequality in economic capital and power also leads to different health outcomes between the members of the two groups, since more wealth enables an individual to make better and healthier life-decisions and prevents the individual from hard and highly demanding labour. The amount of economic capital is dependent on the occupational position

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an individual has, according to Engels and Marx. This position is also indicated with the term social class, in which higher classes possess more economic capital than lower classes in society (Abrahamson, 1981; Ultee et al., 2009).

Sociologist Max Weber agrees in a large extend with the point of view of Engels and Marx, since he argues that economic capital is dependent on the occupational position an individual has, and influences their life outcomes (Abrahamson, 1981). However, Weber argues that having prestige in society is as important as economic capital because prestige gives the ability to have power over others (Abrahamson, 1981; Ultee et al., 2009). Having prestige can therefore be seen as a resource that can be used by individuals to achieve goals (Lenski & Nolan, 1995; Lenksi, 1966). Prestige is as well as economic capital gained through occupation. The allocated place of a certain occupation in the stratification is quite fixed in societies, meaning that there is a large consensus and thus individuals place an occupation on the same place in the stratification (Ultee et al., 2009; Lenski & Nolan, 1995). According to Weber, having prestige and having economic capital is not necessarily equivalent to one another. For example small businessman, such as bookmakers and plumbers, make more money than teachers or clergyman, but receive lower social status (i.e. prestige) in society (Ultee et al., 2009; Lenski, 1966).

### **Resources on board of the Titanic**

**Prestige as a resource.** Economic capital and prestige are thus seen as important resources to influence life-outcomes in daily life by sociologists. These resources are unequally divided in daily life, and will be unequally divided on board of the Titanic, since the passengers brought most of their resources with them on board. Frey et al. (2011) state that having economic resources influenced the chance of survival on board of the Titanic resulting in higher survival rates of upper passenger class men in comparison to other passenger class men. Upper passenger class men, who paid the most for their tickets and thus had more economic resources than the lower two passenger classes, had more and easier access to lifeboats. These passengers also could have been informed earlier than other passenger classes about the seriousness of the situation, because it is likely that they had earlier and more direct access to the captain and the crewmembers (Frey et al., 2010a, 2010b, 2011; Elinder & Erixson, 2012). However, one can question if these advantages are due to either the higher economic resources or prestige. According to Goodman & Careis (1993) individuals are more prone to helping others when these others have more prestige. It could be that upper class passengers also received more help getting into lifeboats than other passenger

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class men. Besides this, Hall (1986) argues that individuals in life-threatening situations are more likely to obey the orders of authorial others, because obeying these rules provides a sense of safety. These are, apart from the crewmembers, the individuals with high prestige (Hall, 1986). Furthermore it is assumable that having prestige in this situation was more important than economic resources. Bribing to get into lifeboats did not happen on a large scale, because money is quite irrelevant in life-threatening situations (Hall, 1986). Having prestige on board of the Titanic will thus probably increase the chances of survival.

**Physical strength as a resource.** Having physical strength is another important determinant of survival in life-threatening situations (Aldrich & Sawada, 2015). Titanic passengers who had more physical strength had an advantage with survival over others (Frey et al., 2011; Elinder & Erixson, 2012). Individuals with more muscle-strength and a better endurance can overcome obstacles more easily, are faster and the body is better able to endure pain, extreme cold or heat (Frankenberg, Gillespie, Preston, Sikoki & Thomas, 2011). With the sinking of the Titanic passengers had to overcome many obstacles. The ship counted many hallways, staircases and doors through which passengers had to move in order to escape the rising water. Moreover, many passengers were kept downstairs as the Titanic sank and had to, after finding their way to the deck, compete with others for lifeboats. Many passengers eventually landed in the ice cold sea, in which they needed to keep swimming until they got help of a lifeboat. Having physical strength is likely to increase the chances of survival, because it gives the advantage of being faster and stronger than others (Frey et al., 2011; Elinder & Erixson, 2012).

**Altruism as a resource.** Apart from physical strength and a prestigious occupation as resources which influence the chance of survival positively, some resources, skills or personality traits can influence this chance negatively (Saks, 2012). These skills can be effective in daily life to accomplish goals but can lead to negative outcomes or irrational behaviour in life-threatening situations (Frey et al., 2010b). Altruism is such a skill or personality trait. Perlow & Weeks (2002), who conducted research in altruism within organisations, show that when co-workers the team collaborated more. Also when helping others within organisations, the work is done more effectively, goals are more clearly formulated and it enhances learning within organisations. Furthermore, individuals feel better about themselves when helping others (Perlow & Weeks, 2002). So, helping others does not only benefit others. However, when helping others in life-threatening situations, called extreme altruism, the chances of survival of the helper decreases (Frey et al., 2010a). Despite



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endangering themselves, some individuals still help others in those situations (Rushton, 1980; Midlarsky & Jones, 2005). Some male passengers on board of the Titanic did not only help women and children in the lifeboats, but also other male passengers (Frey et al., 2010a; Bijan, 2014). Extreme altruism is illustrated by this example of a middle passenger class man:

*The young Lithuanian priest, Juozas Montvila, served his calling to the very end by refusing a place on one of the ship's lifeboats, choosing to administer his priestly duties and offering solace to his fellow travellers. (retrieved from: [www.encyclopedia-titanica.org](http://www.encyclopedia-titanica.org))*

So altruism could be a skill or trait that can be used as a resource in daily life to achieve better work outcomes or collaboration, but can also be a resource that obstructs own safety and chance of survival in life-threatening situations (Saks, 2012).

**Occupation as measurement.** As argued, the resources on board of the Titanic were unequally divided which lead to different chances of survival. Max Weber and Karl Marx stated that the amount of economic resources is dependent upon someone's occupation. The neo-Weberian tradition elaborates on this view by stating not only occupation, but also individual's skills and characteristics give information about someone's economic resources (Breen, 2005). According to this tradition, different occupations require different kinds of skills and characteristics. The more skills required for the occupation, the more prestige and economic resources will be obtained with it. One of the characteristics that is seen as important for an occupation is altruism (Saks, 2012; Perlow & Weeks, 2002). Making a stratification based upon the skills and characteristics could explain differences in life-outcomes.

All in all, it can be assumed that the occupation of male passengers give insight in the level of resources of an individual. As described above, having prestige on board of the Titanic will give advantages and lead to higher chances of survival. A male passenger with a high prestigious occupation will thus have a greater chance of survival. This leads to our first hypothesis:

*(H1) Male passengers with a high prestigious occupation will have a higher chance of survival than male passengers with low prestigious occupations.*

Male passengers with an occupation that requires a lot of physical strength, such as miners and farmers, will be able to use their strength as a resource in order to survive. Therefore, our second hypothesis is:

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*(H2) Male passengers with a more physical challenging occupation will have a higher chance of survival than male passengers with lower physical occupations.*

Many individuals in caring professions, such as doctors, health visitors, and teachers are motivated by a desire to help others (Nesje, 2016). In the 20<sup>th</sup> century they envisioned an ideal world where the social conditions of disadvantaged people are improved through social reform and by increasing support for poor people (Csikai & Rozensky, 1997). These individuals have a commitment to help and care for others, and put the needs of others before their own (Nesje, 2016). It is therefore not surprising that individuals in caring professions often have an empathic and caring personality (Abbott & Meerabeau, 1998). According to Ngai & Cheung (2009) these empathic individuals often show altruistic behaviour, because they have a tendency to think about the wellbeing of others, to feel concern for them and to help them when needed. Since skills and traits are reflected in occupation, we can assume that the male passengers that saved others instead of themselves had a caring profession. As explained above, extreme altruism endangers own survival and therefore decreases the individual’s chance of survival. This leads to our third hypothesis:

*(H3) Male passengers with a caring occupation will have a lower chance of survival than male passengers with other occupations.*

Figure 1 gives an overview of the assumed hypotheses and the mechanisms of how occupation leads to an increasing or decreasing chance of survival on board of the Titanic.

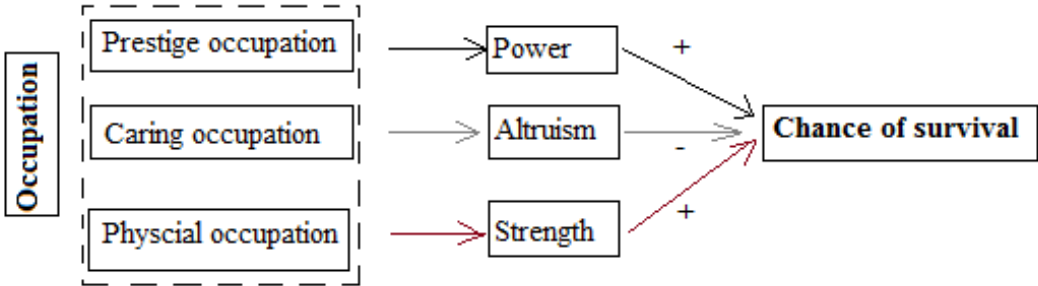


Figure 1. Overview of the assumed relations.

### Methods

#### Data

**Dataset.** The data used for this thesis originates from two different sources. The first source of data is the large dataset with background variables of all 1310 Titanic passengers (<https://www.kaggle.com>, retrieved in February 2016). This dataset contains the following information: whether the passengers survived the disaster, their age, passenger class, information of ticket fare, cabin number, their name, their gender, number of sibling and spouses aboard, number of parents and children aboard, their ticket number, embarking place, the number of life boat when survived, number of identified body, and their home destination. The Titanic dataset does not contain information about occupations of the passengers.

In this thesis we focus on male passengers, which are the majority (64,4%) of the overall Titanic population. Of all male passengers, 10.6% were younger than 16 years old and therefore we label them as children. Because of the WCF norm, we only focus on adult male passengers. So after taking out all female passengers and children (age <16) our research population contains 588 passengers. 24.7 percent of the male passengers travelled in upper passenger class, 24.5 percent in middle passenger class, and 50.7 percent in lower passenger class.

**Biographies.** The second source of data we use for this thesis is the website (<https://www.encyclopedia-titanica.org>) which contains biographies of Titanic passengers. These biographies are written by relatives or researchers. We used these biographies to determine the occupations of the adult male passengers, and to categorise the occupations into the three dimensions: prestigious occupations, caring occupations, and physical occupations. These biographies do not describe occupation consistently, so for some passengers an accurate job description was given, while for others it simply stated the occupation.

**Sampling and coding.** In this section we will shortly describe our methods of sampling and coding occupation. As stated before, the first step we made with the data was to take all female passengers and children (<16) out of the data so we only have adult male passengers. For time reasons, we randomly sampled 50 percent of passengers for whom useful occupation information was available, classified by passenger class. Of some selected passengers no biography was available, so we had to randomly select new passengers. In total we analysed the occupation of 73 upper class passengers, 73 middle class passengers, and 159 lower class passengers. So our selected passengers are a total of 305, this is our sample size.

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We read all biographies of the randomly selected passengers to determine their occupation, which we translated in the values *1* or *0* on the variables *prestigious occupation*, *caring occupation*, and *physical occupation*. We coded the passengers in an Excel sheet, corresponding with the three passenger classes.

We divided the coding of passengers by passenger class between the two of us. Before starting the actual coding, we coded 10 passengers together so we could get a common understanding. In order to make sure the coding was done consistently, we used double-coding. Every value we ascribed to one of the three variables per passenger was labelled with either the colour green or orange. Green meant that we were sure of the values we gave the variables per passenger, orange meaning we were in doubt. At the end of coding we exchanged our orange labelled passengers to one another, with 10 additional randomly selected passengers, so the other could code these. More information of the coding is given in appendix A. After this exchange all passengers were coded correctly. Because we made three different random samples of our male passengers, one for each passenger class, we then had to merge them together in one dataset. In this dataset we transferred our variables made in Excel into variables in SPSS. To examine if our double coded cases were coded consistently, we performed an interobserver agreement test, Cohen's kappa. This test shows that we have a substantial agreement in our coding of the three dimensions of occupation ( $\kappa = .784$ ,  $p < .001$ ).

### **Operationalization**

**Dependent variable.** The dependent variable is whether the passenger survived the disaster or died in de disaster. This is measured by the variable *survived* in the *Titanic dataset*. When a passenger survived the sinking of the Titanic the variable *survived* has a value of *1*, and if the passenger died in the sinking the value of *survived* is *0*.

**Independent variables.** The independent variable is the occupation of a passenger. This is measured by the three dimensions of occupation we distinguished. All of these variables are dichotomous, meaning they have a value of either *0* or *1*. The first variable is *prestigious occupation*, which measures whether the occupation of that passenger has a high social status. Value *0* means a low prestigious occupation, and value *1* means a high prestigious occupation. We used a stratification of social status for occupations which is shown in figure 2. This stratification used by Argyle (1994) classifies occupation into five categories based on the level of skills needed for the job. We coded the occupations of the first two categories of this stratification as high prestige, and the other categories as low

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prestige. We used this stratification as a guideline for coding *prestigious occupation*, since not all occupations of Titanic passengers are described in this stratification.

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I	Professional, etc. <i>Accountant, architect, businessman chemist, company secretary, doctor, engineer, judge, lawyer, optician, scientist, solicitor, surveyor, university teacher, veterinarian.</i>
II	Intermediate <i>Aircraft pilot or engineer, chiropodist, laboratory assistant/technician, manager, proprietor, publican, member of parliament, nurse, police or fire-brigade officer, schoolteacher.</i>
III <sub>n</sub>	Skilled non-manual <i>Auctioneer, cashier, clerical worker, commercial traveller, draughtsman, estate agent, sales representative, secretary, shop assistant, typist, telephone supervisor.</i>
IV <sub>m</sub>	Skilled manual <i>Baker, bus driver, butcher, bricklayer, carpenter, cook, electrician, hairdresser, miner (underground), policeman or fireman, railway engine driver/guard, upholsterer.</i>
IV	Partly skilled/semi-skilled <i>Agricultural worker, barman, bus conductor, farmer, fisherman, hospital orderly, machine sewer, packer, postman, roundsman, street vendor, telephone operator.</i>
V	Unskilled <i>Chimney/road sweeper, kitchen hand, labourer, lift/car park attendant, driver's mate, messenger, railway stationman, refuse collector, window/office cleaner.</i>

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Figure 2. Stratification of occupation. Adapted from 'The psychology of Social Class' by M. Argyle, 1994, p 7.

The second variable is *caring occupation*, which measures the amount of caring characteristics an individual needs in the occupation. Value 0 means low caring characteristics needed, and 1 means that the occupation is a caring profession. We coded occupations as *caring* when it involved a job that required taking care of others, such as doctors and nurses, or when an occupation served the community, such as ministers, teachers and priests.

The third and last variable is *physical occupation*. This variable measures if the occupation requires physical strength. A value of 0 means little or no physical strength is

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required, and a value of  $1$  means that the occupation does require physical strength. We coded an occupation as *physical* when the occupation consisted for a large part of physical work.

Having a value either  $1$  or  $0$  on one of the three variables that measure occupation, does not rule out having a value  $1$  or  $0$  on one of the other variables of occupation. This is because an occupation could have a high social status but also require physical strength, such as professional athletes. So a passenger could have values on all of the variables that measure occupation, or do not have values on any of the variables.

**Control variables.** For this thesis we will take three control variables into account. The first control variable is the age of the passenger. It is assumable that older individuals have lower chances of survival because of the limitations that come with age. When individuals get older they face more health issues, lose their physical strength, and thus could become less capable of saving themselves (Kirkwood & Austad, 2000). However, according to Larsson, Grimby & Karlsson (1997) the strength and speed of movement for men increases when they get older, reaches its maximum around the age of 40 years old, and then decreases. It is therefore reasonable to assume that the effect of age on the chance of survival is a quadratic relationship instead of a linear relationship. To examine if the effect of age on the chance of survival is quadratic, we create a scatterplot and included a Lowess curve (Landou & Everitt, 2004). This curve provides a representation of the change in the proportion of survival when age increases. The resulting graph shows that survival chances are highest for the youngest passengers and decreases with age. Although this relationship is not completely linear, the assumption that the effect of age is quadratic cannot be accepted. Therefore, we will only take original ratio variable *age* into our analyses. The minimum age of our sample is  $17$ , since all children are excluded, and the maximum age is  $71$ .

The second control variable is passenger class. Frey et al. (2010a, 2010b) show that passenger class is an important predictor of survival, because passenger class determines for a large part the accessibility of life boats. Upper class passengers had more access to lifeboats than middle and lower class passengers (Frey et al., 2010a, 2010b). The variable *passenger class* measures the class of passengers on an ordinal scale with three different values:  $1 =$  *upper class*,  $2 =$  *middle class*,  $3 =$  *lower class*, which is equivalent to upper, middle and lower passenger class. For the analyses these categories are transformed into three dichotomous variables.

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Since it is assumable that higher class passengers paid more for their ticket, we include ticket fare as third control variable. Ticket fare gives information about the economic resources that can be used to gain access to lifeboats. The variable *ticket fare* measures the amount of money paid for a ticket on a ratio scale. Table 1 shows the relevant descriptive statistics of all used variables.

### **Analyses**

For answering our main question we will conduct two analyses. The first is a multiple linear regression analysis. We are aware that this analysis assumes that the dependent variable is continuous, while our dependent variable *survived* is dichotomous. Our variables also violate other assumptions of linear regression such as homoscedasticity, multivariate normality and the linear relationship between variables (Landou & Everitt, 2004).

Therefore, our complementary analysis will be a logistic regression analysis. This analysis suits our variables better since this analysis could be used for dichotomous dependent variables. We are not skilled enough to interpret the results of the logistic regression, but we will make an attempt. Hence, our main interpretation of the results will be of the linear regression. We are aware that the interpretation of the linear regression could lead to unrealistic results, such as a chance of survival above 1 or below 0. However, we expect the direction of the slope of the linear regression to be somewhat the same as in the logistic regression. So we will only look at the logistic regression to see if our main results drastically changes.

For all regressions we will test one-sided, because our hypotheses state so, with a significance level of  $p < .05$ .

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Table 1. Descriptive of male adult Titanic passengers (N =587, and sample N=305)

	Population				Analysis sample	
	Min.	Max.	Mean	SD	Mean	SD
<i>Dependent variable</i>						
Survived	0	1	.180	.384	.180	.382
<i>Independent variables</i>						
Prestige occ.					.300	.460
Caring occ.					.060	.242
Physical occ.					.570	.495
<i>Control variables</i>						
Age	17	71	33.25	12.432	32.940	12.370
Passenger class	1	3				
Ticket Fare	0	512.33	27.999	46.509	28.712	46.010

### Results

In this section we will discuss the results of the analyses. We will first check some assumptions before conducting the regression analyses. After this, we will focus on discussing the main results of the multiple linear regression and the logistic regression.

#### Assumptions

Since the variables are dichotomous, the assumptions for linear regression analyses cannot be checked. The conditional distribution of the dependent variable is not normal, the relation between the variables is not linear and homoscedasticity cannot be assumed. However, we expect a high association between some independent variables, such as between the variables *prestigious occupation* and *passenger class*.

By means of a crosstab we test this association. The results show evidence that *prestigious occupation* and *passenger class* are significantly associated (Pearson  $\chi^2(2) = 168.40$ ,  $p < .001$ ). Although *passenger class* is an ordinal variable, we interpret the Cramer's V to test the strength of this association. Cramer's V is .743, which indicates a strong association. This means that someone with a prestigious occupation is more likely to travel in a higher passenger class. To control if passenger class is also highly associated with the other



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independent variables *caring occupation* and *physical occupation*, we conduct two more crosstabs for these associations. Results show evidence that *physical occupation* and *passenger class* are significantly associated (Pearson  $\chi^2(2) = 78,940$ ,  $p < .001$ ), with a Cramer's V of .509, which indicates a moderate association. This means that someone with a physical occupation is more likely to travel lower passenger class. Since Cochran's Rule is violated when conducting a crosstab for the variables *caring occupation* and *passenger class*, an exact test is conducted. The exact test shows evidence that *caring occupation* and *passenger class* are significantly associated (Pearson  $\chi^2(2) = 5,411$ ,  $p = .037$ ), with a Cramer's V of .113, which indicates a very weak association. Based on these results we cannot conclude that someone with a caring occupation is more likely to travel higher class. Out of these analyses we can conclude that *passenger class* is associated with *prestigious occupations* and with *physical occupations*.

We also expect that the association between the independent variables *ticket fare* and *prestigious occupation* will be high, since passenger class differs by the amount of the ticket fare. To test the association between *ticket fare* and *prestige* we compute the variable *ticket fare* into a categorical variable. We made 11 categories for *ticket fare*, each category indicating steps of 50 pounds and conducted another crosstab. The results show evidence that *ticket fare* and *prestige* are significantly associated (Pearson  $\chi^2(2) = 119.463$ ,  $p < .001$ ). Cramer's V is .417, which indicates a moderate association. So an individual with a prestigious occupation is more likely to pay a higher ticket fare.

Taking all the variables of occupation together with the variable *passenger class* and the variable *ticket fare* in the regression analysis could lead to inaccurate results because of the high associations, therefore we first conduct a regression model, model 1a, with only the independent variables of occupation. Then we will conduct model 1b that consist of both the independent and control variables. Finally, model 2 will be the logistic regression analysis.

### **Multiple linear regression**

A joint test is conducted, to see if adding dummy variables of passenger class instead of just the variable *passenger class* is a right decision. The results show that the model which includes the dummy variables is a better model than the first one, which contains the variable *passenger class* as a whole. So there seems to be differences between the three passenger classes in the chance of survival ( $R^2\text{change} = .037$ ,  $F\text{-change} = 12.375$ ,  $p = .001$ ).

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**Main relations.** Table 2 shows the results of the regression analyses. Model 1a shows that male passengers with a *prestigious occupation* have a significant higher chance of survival than male passengers without a *prestigious occupation*. The chance of survival increases with 14.9 percent points when someone has a prestigious job compared to a non-prestigious job. This finding supports our first hypothesis.

Model 1a shows no significant relation between having a *caring occupation* and chance of survival. The direction of the relation is negative, which is in line with our hypothesis. However, since we do not have evidence that the relation is significant, the finding does not support the second hypothesis.

Finally, model 1a shows no evidence of a significant relation between having a *physical occupation* and the chance of survival. Male passengers with a *physical occupation* do not have a significantly higher chance of survival than male passengers without a *physical occupation*. This finding does not support the third hypothesis.

**Main relations with control variables.** When adding our control variables to the linear regression in model 1b, the significant relation found in model 1a between *prestigious occupation* and chance of survival disappears. So in model 1b we find no evidence of a relation between *prestigious occupation* and chance of survival, controlling for passenger class. However, the direction of the slope is still positive. Both the directions of the slope of *caring occupations* and *physical occupations* with the chances of survival are not significant. In model 1b we find no relation between occupation and chance of survival.

We find significant effects for *passenger class* in model 1b. With upper passenger class as a reference category, middle passenger class passengers have 32.6 percent point lower chances of survival. Lower passenger class passengers have 26.5 percent point lower chances of survival than the first passenger class. We find that lower passenger class passengers have 6 percent point higher chance of survival than the middle passenger class. Conducting a Bonferroni correction for these results, we find that only upper passenger class differs significantly with middle ( $M_{\text{difference}} = .288, p < .001$ ) and lower passenger class ( $M_{\text{difference}} = .179, p = .002$ ) in chances of survival. Middle passenger class and lower passenger class do not differ significantly with one another in chances of survival.

When observing the other control variables *age* and *ticket fare* we find a significant effect of *age*. This supports the assumption that older passengers have a lower chance of survival than younger passengers. The results show that passengers will have 4 percent lower

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chance of survival with every year of ageing. We find no evidence for a relation between *ticket fare* and chance of survival. The fit of model 1b is better than the fit of model 1a, with an explained variance of 10 percent ( $R^2$ change = .069, F-change = 5.674,  $p < .001$ ). However, this still indicates a weak model.

### **Logistic regression analysis**

As a complementary analysis we conduct a logistic regression. The outcome of this analysis is shown in table 2 as model 2. Because we will focus on the linear regression model for our conclusions, we will only conduct a logistic regression analysis including all variables.

In model 2 we find no evidence that *prestigious occupation*, *caring occupation* and *physical occupation* predict chances of survival, because they are not significant. The direction of the slope for *prestigious occupation* has changed in the logistic regression from positive to negative, although this is not significant; indicating that passengers with a prestigious occupation do not have significant lower chances of survival than other passengers. Another difference we find in model 2 compared with model 1b is that, with upper passenger class as a reference category, only middle passenger class is significant. So middle class passengers have significant lower chances of survival than upper class passengers. The last difference is that the control variable *age* is no longer significant, indicating that older passengers did not have a disadvantage over younger passengers.

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Table 2. Regression models of independent and control variables by survived (0/1).

	Model 1a		Model 1b		Model 2	
	B	SE	B	SE	B	SE
Prestige occ.	.149*	.004	.010	.073	-.132	.636
Caring occ.	-.147	.059	-.128	.090	-1.639	1.107
Physical occ.	.075	.070	.076	.052	.586	.411
Age			-.004*	.002	-.035	.016
Passenger class						
Upper (ref.)						
Middle			-.329**	.082	-2.821*	.761
Lower			-.266**	.090	-1.890	.675
Ticket fare			.000	.001	.002	.003
Constant	.101*	.014	492**	.117	.760	.883
R <sup>2</sup>		.032		.100		
Pseudo R <sup>2</sup> (Nagelkerke)						.170

\* p < .05, \*\* p < .001, N = 305, tested one-sided.

## Conclusie en Discussie

### Samenvatting

Het zinken van de RMS Titanic in 1912 kan worden gezien als een gebeurtenis waarbij de overlevingskansen van passagiers niet enkel afhingen van toeval, maar ook van de hulpbronnen (Frey et al., 2010a). De tragische gebeurtenis representeert hierbij een probleem dat kan worden beschouwt als een van de hoofdproblemen binnen de sociologie; namelijk het ongelijkheidsprobleem. Aan boord van de Titanic waren de hulpbronnen om te overleven, net zoals in de maatschappij, ongelijk verdeeld over de passagiers, wat heeft geleid tot ongelijke levensuitkomsten. Zo heeft eerder onderzoek geconcludeerd dat met name eerste klas passagiers een grotere overlevingskans hadden dan tweede en derde klaspassagiers. Deze onderzoekers trachtte deze verschillen in overlevingskansen te verklaren door verschillen in economische status (Frey et al., 2010a; 2010b; 2011). Uit verschillende sociologische theorieën is echter gebleken dat er naast economische status, andere hulpbronnen zijn die een rol spelen bij de levenskansen van een individu in de maatschappij (Argyle, 1994; Ultee et al, 2009). Zo stelt Weber dat het hebben van prestige minstens net zo belangrijk kan zijn als economische status om doeleinden te behalen (Argyle, 1994). Om meer inzicht te krijgen in de onderliggende mechanismen die de ongelijke overlevingskansen van de passagiers op de Titanic doen verklaren, is in dit onderzoek onderzocht wat de rol van niet-financiële hulpbronnen is geweest op de kans van overleven. Hierbij is er gekeken naar de rol van drie soorten hulpbronnen, namelijk prestige, fysieke kracht en altruïsme. Het beroep van de passagiers is gebruikt als meting voor de verschillende hulpbronnen. Omdat vrouwen en kinderen voorrang hadden op een plaats in een reddingsboot door de WCF norm, is er in dit onderzoek enkel gekeken naar mannelijke passagiers van 18 jaar en ouder. De volgende onderzoeksvraag staat in het onderzoek centraal; 'In hoeverre is de kans van overleven afhankelijk van het beroep van mannelijke passagiers op de RMS Titanic?'. Hierbij zijn er drie hypothesen opgesteld die zijn gebaseerd op het type beroep van de passagier. Verwacht is dat mannelijke passagiers met een fysiek beroep of een prestigieus beroep een grotere overlevingskans hadden, en dat mannelijke passagiers met een verzorgend beroep juist een lagere overlevingskans hadden. De resultaten in dit onderzoek laten zien dat er niet voldoende bewijs is dat de kans van overleven afhankelijk is van het beroep van de mannelijke passagiers. Onze drie hypothesen kunnen dus niet worden bevestigd. Echter kwamen de richtingen van de verbanden tussen beroep en overlevingskans overeen met onze verwachtingen.

### **Interpretatie van de resultaten**

Er zijn een aantal redenen die het gebrek aan significante effecten kunnen doen verklaren. Als eerst zien we een positieve, non-significante relatie tussen het hebben van een prestigieus beroep en de kans op overleven. Niet geheel onverwacht, blijken beroepsprestige en de controlevariabelen ticketprijs en passagiersklasse in grote mate met elkaar samen te hangen. De passagiers met een prestigieus beroep, blijken met name geconcentreerd te zijn in de eerste klasse, en bezitten dus veelal over meer financiële hulpbronnen dan passagiers zonder een prestigieus beroep (zie appendix A). Wanneer de analyse wordt uitgevoerd zonder de controlevariabele passagiersklasse is er wel degelijk sprake van een significant verband tussen een prestigieus beroep en een hogere overlevingskans. Door het toevoegen van de controlevariabele verliest het echter zijn significantie. Dit betekent dat het effect van prestige op overlevingskans wordt beïnvloed door de hoge correlatie tussen passagiersklasse en prestige. Het blijft hierin onduidelijk wat het achterliggende mechanisme is dat het effect van passagiersklasse op overlevingskans doet verklaren. Zijn eerste klas passagiers in hun voordeel omdat ze meer prestige hebben, of omdat ze over meer economische middelen beschikken? Daarnaast kan het ook zo zijn dat het hebben van veel financiële middelen, iemand al prestige geeft, zonder dat deze persoon ook daadwerkelijk een beroep met prestige hoeft te hebben. Ook is een mogelijke verklaring dat niet prestige of economische hulpbronnen verantwoordelijk zijn voor een hogere overlevingskans aan boord, maar dat het enkel te maken heeft met de ligging van de reddingsboten. Frey et al. (2010a; 2010b) beschrijven in hun onderzoek dat de reddingsboten nabij de eerste klas cabines lagen, waardoor de eerste klas passagiers gemakkelijker en sneller toegang hadden tot de reddingsboten dan de tweede en derde klas passagiers. Om duidelijk te krijgen welke mechanismen de hogere overlevingskansen van eerste klas passagiers doen verklaren, is het voor vervolgonderzoek van belang om nader onderzoek te doen naar de ligging van de reddingsboten ten opzichte van de slaapcabines van de passagiers. Door gebruik te maken van de plattegronden van het schip tezamen met de beschikbare kwalitatieve en kwantitatieve data, kan worden vastgesteld in welke reddingsboot de passagiers gered waren, op welk tijdstip deze reddingsboot was vertrokken, en waar de slaapcabines van deze passagiers aan boord gelegen waren. Wanneer blijkt dat het daadwerkelijk zo is dat veel eersteklas passagiers sliepen nabij een reddingsboot en ook nog eens als een van de eerste waren vertrokken, is het zeer waarschijnlijk dat de ligging van de reddingsboten van grote invloed is geweest op de overlevingskans van de passagiers.

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Als tweede zien we een positieve, non-significante relatie tussen het hebben van een fysiek beroep en de kans op overleven. Uit de kruistabellen blijkt dat het hebben van een fysiek beroep en de passagiersklasse ook in grote mate met elkaar samenhangen. De mannelijke passagiers met een fysiek beroep waren met name geconcentreerd in de derde klasse (zie appendix A). Een verklaring voor het niet vinden van een significant effect zou hierbij kunnen zijn dat de mannelijke passagiers met een fysiek beroep wel degelijk baat hebben bij fysieke kracht, maar dat dit voordeel niet opweegt tegen de barrières die de ligging van de derde klas cabines met zich mee brengen. Zoals hierboven al gesteld is, waren de cabines van de derde klas passagiers geheel onderin de boot gevestigd, waar het water voor het eerst zijn weg vond (Frey et al., 2010a; 2010b; 2011). Derde klaspassagiers waren hierdoor gedwongen om een langere weg af te leggen door het water, om bij een reddingsboot te komen. Een fysiek lichaam kan helpen om het langer vol te houden in ijskoud water, maar geen enkel lichaam is bestemd om dit minuten lang vol te houden (Frankenberg et al., 2011). Al met al zou het dus zo kunnen zijn, dat wanneer de omstandigheden gelijk waren voor iedereen wat betreft de mogelijkheid om in een reddingsboot te komen, het hebben van fysieke kracht de kans op overleven wel degelijk significant zou doen verhogen. Voor vervolgonderzoek zou het interessant zijn om enkel te kijken naar de effecten van het hebben van fysieke kracht op de overlevingskans van de passagiers binnen de tweede klasse. Uit de plattegronden blijkt immers dat een aantal tweede klas slaapcabines gunstiger gelegen waren ten opzichte van de reddingsboten dan de derde klas slaapcabines (<https://www.encyclopediatitanica.org>). Bovendien is er binnen de tweede klasse een grotere variatie aan beroepsoorten, waardoor fysieke kracht als hulpbron gemakkelijker vergeleken kan worden met de andere hulpbronnen.

Als laatst zien we een negatieve, non-significante relatie tussen het hebben van een verzorgend beroep en de kans op overleven. Hierbij is het echter wel van belang om in ogenschouw te nemen dat er maar weinig mannelijke passagiers aan boord waren met een verzorgend beroep in verhouding tot het aantal mannen met een prestigieus en fysiek beroep (zie appendix A). Dit kan verklaard worden uit het feit dat in 1912 veel verzorgende beroepen, zoals verpleegkundigen en docenten werden uitgeoefend door vrouwen. Het is hierdoor lastig te beoordelen of het niet vinden van een effect daadwerkelijk komt doordat de overlevingskans onafhankelijk is van het hebben van een verzorgend beroep, of dat het eerder komt door de kleine representatie van individuen met een verzorgend beroep binnen de sample. Om hierachter te komen, zou het voor vervolgonderzoek interessant zijn om te kijken

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naar het effect van het hebben van een verzorgend beroep op de overlevingskans bij een scheepsbreuk waarbij er geen WCF norm werd opgevolgd, en vrouwen dus gemakkelijker kunnen worden meegenomen in de analyse. Het zou kunnen zijn dat het beschreven mechanisme, namelijk dat altruïstischere persoonlijkheden geneigd zijn anderen te redden in rampen, en dus een kleinere overlevingskans hebben, wel degelijk opgaat. Maar dat dit mechanisme niet voldoende naar voren komt door de beperkingen die dit onderzoek ons biedt.

Wanneer er wordt gekeken naar de effecten van de controlevariabelen, zien we een negatieve, significante relatie tussen leeftijd en de kans op overleven. Dit effect komt overeen met onze verwachtingen en met eerder gedaan onderzoek, aangezien deze stelden dat oudere mannen fysiek minder capabel zijn om zichzelf te redden dan jongere mannen. We hebben geen significante relatie gevonden tussen ticket prijs en de overlevingskans. Zoals al eerder is benoemd, kan dit echter verklaard worden doordat de variabele ticketprijs, prestige en passagiersklasse in grote mate met elkaar samenhangen.

### **Beperkingen door aannamen**

In dit onderzoek zijn er een aantal aannamen gedaan om de analyse te vereenvoudigen. Daardoor is wellicht geen realistisch beeld gecreëerd van de daadwerkelijk situatie aan boord van de Titanic. Ten eerste is in dit onderzoek verondersteld dat alle mannen gelijk waren in de kans om hulpbronnen in te zetten. In de praktijk is de situatie echter niet zo simplistisch geweest. Met name op het eerste klas dek waren vrouwen en kinderen relatief snel gered, waardoor mannen hier enkel nog met elkaar hoefden te concurreren om een plek te bemachtigen. Echter, op het tweede en derde klasse dek bleven lange tijd nog veel vrouwen en kinderen strijden om een plek op de reddingsboot. Mannen die zich op dat moment daar bevonden, hadden dus langere tijd last van de concurrentie met vrouwen en kinderen (Frey et al., 2010a; 2010b). Daarnaast waren er in verhouding meer reddingsboten nabij het eerste klas dek dan het tweede en derde klas dek (Hall, 2012). Er kan geconcludeerd worden dat veel tweede en derde klaspassagiers in totaal een grotere mate van concurrentie ervaarden dan eerste klaspassagiers. De condities waarin de mannelijke passagiers zich bevonden waren hierdoor niet gelijk. Om op accuratere wijze iets te concluderen over het effect van beroep en de hulpbronnen die hieruit voort komen op overlevingskans, is het van belang om passagiers binnen de klasse onderling te vergelijken aangezien deze passagiers zich binnen gelijke condities bevonden.

Ten tweede is verondersteld dat de invloed van hulpbronnen op de overlevingskans van passagiers gelijk is geweest gedurende het gehele tijdsbestek van het zinken van de boot.



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Echter is het waarschijnlijk om aan te nemen dat de paniek groter werd onder de passagiers naarmate het schip dieper zonk en de reddingsboten schaarser werden. De ene hulpbron zou in tijden van paniek effectiever geweest zijn dan de andere hulpbron. Het hebben van prestige zal in het begin van de ramp voornamelijk effectief geweest zijn, aangezien het aannemelijk is om te veronderstellen dat de bemanningsleden in dit tijdsbestek nog relatief hulpbehoevend waren in het verstrekken van informatie. Naarmate de tijd vorderde, en de chaos groter werd, zal hier minder ruimte voor zijn geweest. Ten tijde van paniek en chaos is het hebben van fysieke kracht juist van groter belang, aangezien men zich een weg moet kunnen banen door een grote menigte die allen strijden om een plek in een reddingsboot. Ook kan beargumenteerd worden dat het effect van altruïsme op de overlevingskans veranderde naarmate de tijd verstreek. Uit de biografieën van de passagiers blijkt dat veel passagiers die aan het begin van de avond een plek in een reddingsboot kregen, nog in de veronderstelling waren dat er genoeg reddingsboten waren om iedereen te redden. Een mannelijke passagier met een altruïstisch karakter die al aan het begin van de ramp een plek in een reddingsboot kreeg toegewezen, zal dus minder de neiging hebben gehad om zichzelf op te offeren voor anderen. Echter, een mannelijke passagier met een altruïstisch karakter die pas later kans had op een plek in een reddingsboot, zal zich bewuster zijn geweest van het tekort aan reddingsboten, en zijn plek hebben afgestaan om anderen te redden. Om vast te stellen welke hulpbronnen in welk tijdsbestek van belang waren, is het voor vervolgonderzoek interessant om te kijken naar het tijdstip waarin de passagiers vertrokken in de reddingsboten. Hieruit kan men namelijk opmaken, of er aan het begin van de avond bijvoorbeeld meer mannelijke passagiers met een prestige beroep zijn vertrokken in een reddingsboot, en aan het einde van de avond juist meer mannelijke passagiers met een fysiek beroep.

Ten derde is er aangenomen dat het hebben van een bepaald beroep ook daadwerkelijk zorgt voor een het hebben van een bepaalde hulpbron. Echter hoeft dit niet altijd het geval te zijn. Een jonge man die nog maar net een fysiek beroep uitoefent, hoeft nog niet zoveel spiermassa ontwikkeld te hebben. Ook is het lastig om te veronderstellen of artsen wel daadwerkelijk werken vanuit de wil om anderen te helpen, en dus over een empathisch karakter bezitten. Het beroep brengt immers ook veel aanzien met zich mee, en levert veelal een hoog salaris op. Daarnaast is de informatie dat een beroep geeft over de vaardigheden en karaktereigenschappen van een persoon, niet allesomvattend (Guy & Newman, 2004). Uit een aantal biografieën is af te leiden dat een groot deel van de mannelijke passagiers over meer hulpbronnen beschikten dan enkel duidelijk word uit de informatie van beroep. Zo hadden

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veel mannen met een prestige of fysieke baan hulpgedrag vertoond ten koste van zichzelf, wat duid op een altruïstisch karakter. Andersom waren er ook veel mannelijke passagiers met een verzorgend of prestigieus beroep die fysiek erg actief bleken, doordat ze in hun vrije tijd sport beoefenden. Daarnaast kan worden gesteld dat prestige in de vroege 20e eeuw niet enkel werd verleend door het beroep dat een individu uitoefende, maar ook door de afkomst van de familie. Zo kan een jonge mannelijke passagier een startende baan hebben dat laag scoort op de prestigeladder, maar toch over prestige beschikken vanwege zijn afkomst. Al met al kan gesteld worden dat het voor vervolgonderzoek van belang is niet enkel te kijken naar het beroep van de mannelijke passagiers om uitspraken te doen over zijn hulpbronnen. Raadzaam is om nader gebruik te maken van het rijke aanbod aan kwalitatieve informatie die de geschreven biografieën bieden.

### **Beperkingen door de meting**

Er zijn een aantal kanttekeningen die geplaatst kunnen worden bij de wijze waarop we beroep hebben gecodeerd. Allereerst is van prestigieus beroep een 0/1 variabele gemaakt. Dit betekent dat een mannelijke passagier volgens onze analyse wél of geen prestigieus beroep beoefend, terwijl in de werkelijkheid een middenweg mogelijk is. Voor vervolgonderzoek is het dan ook raadzaam om gebruik te maken van continue schaal, waarbij de score op het hebben van een prestigieus beroep verloopt van laag naar hoog.

Daarnaast is er in dit onderzoek gebruik gemaakt van een relatief modern stratificatiemodel om de mate van prestige van een beroep vast te stellen. Hierbij kan het zo zijn dat bepaalde beroepen die aan het einde van de 20e eeuw werden bestempeld als prestigieus, dit niet of in mindere mate waren rond 1912 en andersom. Het niet vinden van een effect van beroep op de kans van overleven kan hierbij dus ook komen door een te grove wijze van coderen. Om op accuratere wijze vast te stellen in welke mate een passagier een prestigieus beroep beoefende, is het voor vervolgonderzoek van belang om gebruik te maken van een beroepsclassificatie die past bij de bestudeerde tijdsperiode. Voor het vinden van een juist classificatiemodel, kan gebruik worden gemaakt van het brede aanbod aan literatuurstudies gedaan door Treiman (1977), waarin verschillende stratificatiemodellen, over verschillende perioden en landen met elkaar worden vergeleken (Treiman, 1977).

### **Conclusie**

Al met al kan worden geconcludeerd dat de levenskansen van passagiers aan boord van de Titanic bepaald werden door een complexe variatie aan omstandigheden. Hierdoor blijkt het lastig om generalisaties te trekken over de rol van beroep op de overlevingskansen in

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levensbedreigende situaties. Zo is het denkbaar dat de beschreven mechanismen over de rol van hulpbronnen op overleven wel degelijk opgaan in een andere rampsituatie, maar dat deze door de praktische belemmeringen op de Titanic als het ware ‘geen kans’ hadden om te ontstaan. Om op accuratere wijze vast te stellen of beroep invloed heeft op de overlevingskansen van individuen in een levensbedreigende situatie, is het van belang om, naast de gedane aanbevelingen, een soortgelijk onderzoek te doen over andere rampen. Wanneer blijkt dat beroep wel degelijk een voorspelling geeft over de mate van hulpbronnen, en hiermee de kans op overleven, vormt het gebruik van beroep als meting een waardevolle toevoeging op de al bestaande onderzochte determinanten op overlevingskansen in rampsituaties. Bovendien zal dan blijken dat het effect van het uitoefenen van een bepaald beroep groter is dan wellicht gedacht. Het brengt dan immers niet enkel ongelijkheid binnen de samenleving als het gaat om wel of niet gezond leven, maar bepaalt ook je levenskansen in extreme situaties. Ondanks de vele beperkingen van dit onderzoek, is er een beginnende stap gezet in het bieden van inzicht in de mechanismen die plaats kunnen vinden in een levensbedreigende situatie.

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### Literature

- Abbott, P., & Meerabeau, L. (1998). *The sociology of the caring professions*. Psychology Press.
- Abrahamson, M. (1981). *Sociological Theory: An Introduction to Concepts, Issues, and Research*. Prentice Hall.
- Aldrich, D. P., & Sawada, Y. (2015). The physical and social determinants of mortality in the 3.11 tsunami. *Social Science & Medicine*, 124, 66-75.
- Argyle, M (1994). *The Psychology of Social Class*. London, England: Routledge.
- Bijan, A. (2014). *Titanic and the people on board: A look at the media coverage of the passengers after the sinking* (Master thesis, Western Oregon University).
- Breen, R. (2005). Foundations of Class Analysis in the Weberian Tradition. In E.O Wright (Ed), *Approaches to Class Analysis* (pp. 31- 50). Cambridge, UK: Cambridge University Press.
- Csikai, E.L., & Rozensky, C. (1997). 'Social Work Idealism' And Students Perceived Reasons For Entering Social Work. *Journal of Social Work Education*, 33(3), 529-538.
- Elinder, M., & Erixson, O. (2012). Gender, social norms, and survival in maritime disasters. *Proceedings of the National Academy of Sciences*, 109(33), 13220-13224.
- Frankenberg, E., Gillespie, T., Preston, S., Sikoki, B., & Thomas, D. (2011). Mortality, the family and the Indian Ocean tsunami. *The Economic Journal*, 121(554), F162-F182.
- Frey, B.S., Savage, D.A., & Torgler, B. (2011). Behavior under Extreme Conditions: The Titanic Disaster. *Journal of Economic Perspectives*, 25(1), 209-222.
- Frey, B.S., Savage, D.A., & Torgler, B. (2010a). Interaction of natural survival instincts and internalized social norms exploring the Titanic and Lusitania disasters. *Proceedings of the National Academy of Sciences*, 107(11), 4862-4865.
- Frey, B.S., Savage, D.A., & Torgler, B. (2010b). Noblesse oblige? Determinants of survival in a life and-death situation. *Journal of Economic Behavior & Organization*, 74, 1-11.
- Goodman, M.D., & Gareis, K.C. (1993). The Influence of Status on Decisions to Help. *The Journal of Social Psychology*, 133(1), 23-31.

## OCCUPATION AND CHANCE OF SURVIVAL

- Graaf, P.M., & Kalmijn, M. (2001). Trends in the intergenerational transmission of cultural and economic status. *Acta Sociologica*, 44(1), 51-66.
- Guy, M.E., & Newman, M.A. (2004). Woman's Job, Men's Jobs: Sex Segregation and Emotional Labor. *Public Administration Review*, 64(3), 289-300.
- Hall, W. (1986). Social class and survival on the S.S. Titanic. *Social Science and Medicine*, 22(6), 687-690. doi:10.1016/0277-9536(86)90041-9
- Kirkwood, T.B.L., & Austad, S.N. (2000). Why do we age? *Nature*, 408, 233-238. doi: 10.1038/35041682
- Landau, S., & Everitt, B. (2004). *A handbook of statistical analyses using SPSS* (Vol. 1). Boca Raton, FL: Chapman & Hall/CRC.
- Larsson, L., Grimby, G., & Karlsson, J. (1979). Muscle strength and speed of movement in relation to age and muscle morphology. *Journal of Applied Physiology*, 46(3), 451-456.
- Lenski, G. E. (1966). *Power and privilege*. New York, NY: McGraw-Hill.
- Lenski, G., & Nolan, P. (1995). *Human Societies*. An introduction to macrosociology. New York, NY: McCraw-Hill Inc.
- Maas, I. (2014). Ontwikkelingen in sociale openheid en sociale uitsluiting. Een blik op het verleden en toekomst. *Mens en Maatschappij*, 89(1), 85-100.
- Midlarsky, E., & Jones, S.F. (2005). Personality Correlates of Heroic Rescue During the Holocaust. *Journal of Personality*, 73(4), 908-934. doi: 10.1111/j.1467-6494.2005.00333.x
- Nesje, K. (2016). Personality and Professional Commitment of students in nursing, social work, and teaching: A comparative survey. *International Journal of Nursing Studies*, 53, 173-181.
- Ngai, S. S. Y., & Cheung, C. K. (2009). Idealism, altruism, career orientation, and emotional exhaustion among social work undergraduates. *Journal of Social Work Education*, 45(1), 105-121.

## OCCUPATION AND CHANCE OF SURVIVAL

- Perlow, L., & Weeks, J. (2002). Who's helping whom? Layers of culture and workplace behavior. *Journal of Organizational Behavior*, 23(4), 345-361.
- Rushton, J. P. (1980). *Altruism, socialization, and society*. Englewood Cliffs, NY: Prentice Hall.
- Saks, M. (2012). Defining a Profession: The role of knowledge and Expertise. *Professions and Professionalism*, 1, 1-10.
- Shinar, E.H. (1975). Sexual stereotypes of occupations. *Journal of Vocational Behavior*, 7, 99-111.
- Treiman, D.J. (1977). *Occupational Prestige in Comparative Perspective*. London, United Kingdom: Academic Press.
- Ultee, W. C., Arts, W. A., & Flap, H. D. (1996). *Sociologie. Vragen, uitspraken, bevindingen*. Groningen: Wolters-Noordhoff.
- Visser, M.S., & Roelofs, M.R. (2011). Heterogeneous preferences for altruism: Gender and personality, social status, giving and taking. *Experimental Economics*, 14(4), 490-506. doi:10.1007/s10683-011-9278-4
- Van Leeuwen, M.H.D., & Maas, I. (2010). Historical studies of social mobility and stratification. *Annual Review of Sociology*, 36, 429-451.

### Appendix A

This appendix describes the coding of occupation in greater detail. The frequency of passengers with a prestigious, caring or physical occupation is shown in table A.1. As already described in the method section, the values ascribed to one of the three variables of occupation were labelled with either 'green' or 'orange'. Green meant that we were sure of the categorisation and orange meant that we were in doubt. An example of an 'orange' labelled occupation is *businessman*. In the stratification of Argyle (1994) being a businessman can be seen as a prestigious job. We decided to categorize all businessman occupations as a prestigious occupation, although we are aware that a businessman who runs a famous and expensive hotel is not comparable with a businessman who just begun running his own business. Because we could not always deduce the kind of businessman a passenger was, we thus decided to code all of them as a prestigious occupation. Another example is the occupation *store owner*, since it was not always clear whether the store was successful or not. However, even though it was not clear whether the store was successful in the society, being the owner of a store gives a man high prestige within the store. It can therefore be assumed that a man who has a high prestige within his job and a man who have a high prestige within society, share the same kind of resources in terms of traits and skills, because they are both used to being in charge of others. Therefore, we also categorized store owners as prestigious occupations.

Some occupations did not fall in our categorization of occupation. These occupations were labelled as 'blue' and served as the reference category. Examples are *chauffeurs*, *taxi drivers*, or *machinists*. According to the stratification of Argyle (1994) these occupations can be seen as semi-skilled jobs and score very low on the prestige level. Since a man with these kind of occupations does not require physical strength, and do not really have to take care of others, it can also not be seen as a physical or caring occupation.

Some passengers did not have an occupation, but were referred to as *students* in the biographies. Since being a student is not the same as having an occupation, we did not code these passengers in one of the three categories. However, we realize that a student could have had the same resources as the occupation he is studying for. For example, it is likely that a medical student has the same caring traits as a licenced doctor. We therefore choose to label all the students with an orange colour, and only coded them if the occupation they studied for was made clear. Otherwise we randomly selected another male passenger. Table A.2 gives an overview of the frequency of our 'green', 'orange', and 'blue' labels.

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Table A.1. Frequency of male passengers with a prestigious, caring or physical occupation per passenger class

	<b>Prestigious occ.</b>	<b>Caring occ.</b>	<b>Physical occ.</b>
Upper passenger class	65	7	16
Middle passenger class	19	7	31
Lower passenger class	8	5	128

Table A.2. Frequency of occupations with the label 'green', 'orange' or 'blue' per passenger class

	<b>Green label</b>	<b>Orange label</b>	<b>Blue label</b>
Upper passenger class	64	9	0
Middle passenger class	48	4	21
Lower passenger class	109	40	12

Table A.3 gives a general overview of *all* occupations we came across, their frequencies and the occupational label we gave them. Some occupations fit into two categories and were therefore also labelled accordingly. For example, a *famous athlete* can be seen as a physical occupation because of the sport, but also as a prestigious occupation since the athlete is well known and popular due to the sport. Also the occupation *doctor* fits within two categories. On one hand a doctor can be seen as a caring occupation, since a doctor literary takes care of others, and on the other hand this job also scores high on prestige in the stratification of Argyle (1994).

Table A.3. Frequency of all occupations and their label

<b>Occupation</b>	<b>Frequency</b>	<b>Occupation variable</b>
Assistant in a store	8	none
Attorney	1	prestige
Baker	2	none
Blacksmith	3	physical
Bootmaker	1	physical



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Bricklayer	1	physical
Businessman	28	prestige
Butler	4	caring
Cattleman	2	physical
Carpenter	6	physical
Chauffeur/cap driver/machinist	8	none
Colonel	4	physical/prestige
Diamond trader	2	prestige
Doctor	2	prestige/caring
Domestic servant	2	caring
Factory worker	6	physical
(Famous) musician/artist	8	prestige/none
Famous athlete	5	prestige/physical
Farmer	28	physical
Fireman	3	physical
Gardener	3	physical
General labourer	46	physical
Hotel owner	7	prestige
Machinist	4	physical
Manager	4	prestige/none
Mechanical engineer	4	prestige
Merchant	2	none
Military/soldier	8	physical
Miner	12	physical
Painter/Decorator	7	physical

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Politician	4	prestige
Priest	4	prestige/caring
Property developer	7	prestige
Servant	4	caring
shoemaker	3	none
Stockbroker	5	prestige
Stone cutter	6	physical
Stonemason	5	physical
Store owner	12	prestige
Student	5	none
Toolmaker	10	physical
Wood Carver	5	physical
Work for church (voluntary)	9	caring
Writer/Editor/Journalist	4	none
Yachtsman/Seaman/Sailor	8	physical

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