

**BIENNIAL CONFERENCE OF THE ECONOMIC SOCIETY OF SOUTH AFRICA,  
UNIVERSITY OF CAPE TOWN, CAPE TOWN, SOUTH AFRICA,**

**2-4 SEPTEMBER 2015**

**Does culture matter? Exploring youth unemployment in South Africa using  
Hofstede's theory of cultural dimensions**

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**DRAFT, NOT FOR CITATION: 11 August 2015**

**Abstract**

South Africa's youth unemployment rate is one of the highest in the world and is a concern to both economists and policy-makers. What is particularly concerning is the disparity in unemployment rates among the different population groups. Previous studies on youth unemployment have attributed the high unemployment rate in South Africa to a lack of necessary skills in the economy and the fact that a large proportion of the population gains university qualifications for career paths that have few employment opportunities. This latter fact contributes to the high unemployment rate among graduates. Thus, this article endeavours to determine whether identity influences this choice. This is done by using a survey to determine the cultural traits of young black South African University students and then applying a multinomial logit model to determine whether these cultural traits influence the selection of the fields of study and, by implication, the career choice. The fields of study considered are financial sciences, humanities, law, management, and sciences. The more popular choices are then compared with the fields with the highest unemployment rates to establish whether there is a link.

The results show that some cultural traits do indeed influence career choice; but, they also reveal that career choice alone does not influence youth unemployment rates. The results further show that such fields as sciences could have more graduates; but, factors such as experience have a bigger influence on whether or not these graduates will find employment.

**1. Introduction**

One of the biggest problems South Africa is facing is the high rate of unemployment and youth unemployment in particular. Youth unemployment in South Africa at 40.85% (for 15-34 year olds) is substantially higher than adults (35-64 year olds) at 14.6% as of the first quarter 2015 (Stats SA, 2015). Four main reasons have been suggested for the high level of youth unemployment including; changes in aggregate demand, the mismatch and lack of skills among the youth, size of the youth population, wages and lack of experience (ILO, 2012; Banerjee et al, 2007; Kingdon and Knight, 2005; Mlatsheni and Rospabé, 2002; O'Higgins, 2001). Du

Toit (2003) and Guliwe (n.d), however present another possible cause for the high rate of unemployment for graduates and the mismatch of skills. They propose that many graduates, particularly black youth, get qualifications in particular degrees that are not marketable such as humanities and art, a fact that is punctuated by the fact that unemployment rates among black and coloured students is much higher than among Indian and white students.

One of the reasons provided for the choices in such fields is poor career guidance (Maimbo, 2011). Career choices are often made without ser

ious consideration and are therefore influenced by factors over which such youth exert no conscious influence, such as culture and family background. Academics agree that any good career guidance and assessment tool is carried out with an awareness of the effect of culture on career choices (Marsella and Leong, 1995; Leong and Hartung, 2001; Watson, Duarte and Glavin, 2005). This article will therefore attempt to explain the possible causes for the high youth unemployment rate using theory on culture and cultural traits. Culture in this context can be defined as “the behaviours and beliefs characteristic of a particular social, ethnic, or age group” (culture, 2012). Sections two and three will provide a literature review on cultural economics and the link between cultural traits, economics and unemployment. Section four will explain the methodology used and section five the results of the study.

## **2. The growth of cultural economics**

The academic world has for some time been fascinated with the idea that individuals may have certain behaviours that are characteristic of a common group of people and as a result have committed a lot of research on the aspects of culture, cultural traits and transmission (Cavalli-Sforza and Feldman, 1981; Burns and Dietz 1992; Lyman and O'Brien, 2003; Hofstede and McCrae, 2004. Harris (1968) documents some of the principles related to the development of these cultural theories. However, it is only recently with the development of better methods to test hypotheses that economists have begun to allow for their role in Economics thus contributing to the development of identity economics as a field of its own (Guiso, Sapienza & Zingales, 2006).

Identity economics is a field that examines how identity could shape work, wages and well-being of an individual (Akerlof and Kranton, 2010). This field looks at how aspects such as race, gender and nationality influence employment opportunities or the amount of wages received (Hultin and Szulkin, 1999; Kilbourne, Farkas, Beron, Weir and England, 2004; and O'Neill, 2003). Similar studies in the field for example show how a person's name may influence whether or not a person is called upon for an interview (Ahmed, 2010; Bursell, 2007 and Arai & Thoursie, 2009). The influence of identity, nationality and background has been found significant enough that a measure known as Cultural Distance (CD) was created to capture the extent to which cultures are different or similar in order to establish whether this would affect future business or economic activity (Shenkar, 2001).

Culture has now been found to have a significant effect on economic variables including economic development (Granato, Inglehart and Leblang, 1996; Van der Borg and Russo, 2005), tax (Goldschmidt, 2006), redistribution (Luttmer and Singhal, 2008) as well as work

and fertility behaviour of women (Fernandez and Fogli, 2005). Culture has even been found to influence a country's choice of economic system whether capitalist, socialist, or communist in ideology. A number of studies have shown the link between religion, which is a key aspect of culture, and economic ideology (Scudder, 1910; O'Brien, 1926; Buck, 1993; Tawney, 1998; Ralston, Holt, Terpstra & Kai-Cheng, 2008).

The most recent literature on the role of culture in economic activity however seems to be mainly focused on the effect of culture on foreign direct investment (FDI). Because investment in a business enterprise in a foreign country can be costly in terms of assets and risk, it has become imperative for the investor to investigate how successful the venture will be in a new economy. One study for instance has shown that low levels of the cultural trait of uncertainty avoidance is positively correlated with high levels of FDI (Bhardwaj, Dietz and Beamish, 2007). Generally, studies have shown that the success of an enterprise may be contingent on knowing a country's cultural characteristics before investment (Kogut & Singh 1988; Shenkar 2001; Mitra & Golder, 2002; Nachum and Wymbs, 2002; Agiomirgianakis, Asteriou and Papathoma, 2003; Yin, 2008; Salvrakos, 2010). While there have been a number of studies on the effect of culture on several economic variables, there appears to be very few studies that discuss the effect culture on unemployment and youth unemployment in particular. One study has for example used a regression to determine whether the national character traits of neuroticism and extraversion have an impact on unemployment and found that extraversion was significantly correlated with unemployment in 18 industrialized nations (Yang and Lester, 2000). Following this reasoning, this study investigates the link between culture and unemployment by using Hofstede's theory of cultural traits.

### **3. Cultural traits and youth unemployment**

One of the most well-known models that show how culture can affect behaviour is Hofstede's model of nations' cultures. Hofstede (2000) subscribed to the theory that different nations bore different cultural traits as a result of their diverse backgrounds, norms and behaviour and that these traits would influence behaviour. Hofstede's study on national cultures was the first such study done on a large scale. It confirmed many of the theories anthropologists had discussed about traits and raised the popularity of cross-cultural research.

In his work "Culture's Consequences", the author documents his research on the above theory. Making use of surveys conducted among IBM employees in 72 countries, he initially identified four dimensions into which a country's culture may fall including; power distance, uncertainty avoidance, individualism versus collectivism and masculinity versus femininity but recently added two more dimensions; long term orientation versus short term orientation and lastly indulgence versus restraint (Hofstede, 2014).

Individualism versus collectivism, in particular, speaks of how certain nations are more individualistic in character than others which are more collective in nature. Individualism implies that the nations with this cultural trait tend to make decisions independently and are rarely influenced by such outside factors as the family. Put another way, these nations tend to make autonomous decisions based on what is best for the individual. Thus, individuals may largely prefer solitary occupations or those that involve the operation of data or objects;

examples of such occupations include computer programmers, chemists, and mathematicians (Meir & Tziner, 2001). In contrast, cultures that are collective in nature make decisions based on the collective benefit of the family, group, or community. Their decisions are rarely made independently and are often influenced by the needs of the whole group. As a consequence, individuals from collectivist cultures prefer to work with people; they could therefore, choose occupations such as social work and nursing (Meir & Tziner, 2001).

Power distance refers to the extent to which less powerful people in a society accept the difference in status or equality (Hofstede, 2000). In other words, power distance probes how willing people are to accept their uneven status or to respect hierarchy. In areas with low power distance, people find it easier to consult and even question their seniors in the workplace. Relationships are more on a peer-to-peer level than a traditional employer-to-employee basis. Conversely, areas with high power distance have less powerful people who are willing to accept an autocratic organisational system. This cultural dimension is important to consider, especially with regard to career choices. Societies with high power distance may be willing to accept career choices made for them by their parents or the rest of their society. If the career choice is education instead of entrepreneurship, for example, this could influence whether or not the individual gets employment later on. Furthermore, people with high power distance may go into occupations that give them more authority and responsibility (Meir & Tziner, 2001).

Uncertainty avoidance refers to the extent to which members of a society are comfortable with uncertainty, changes, or lack of structure. Such communities prefer the known and often take a while to accept new or uncertain things. This may result in resistance to innovation. Such societies are likely to stick to their conventional ways. In terms of choice, they are likely to choose what is known to them, preferring not to take risks. Fields such as entrepreneurship, psychology and music – which require a substantial amount of risk – are career choices that many would abstain from; whereas fields in exact sciences such as technology, biology, and medicine may be preferred.

As far as masculinity versus femininity is concerned, masculinity refers to the preference for assertiveness, competition, challenge, recognition, and high earnings; while femininity leans towards modesty, cooperation, having a good relationship with co-workers and superiors, as well as job security. Masculine cultures would choose occupations in sports, entrepreneurship, and the military, or in places where they have the opportunity to show excellence (Meir & Tziner, 2001). The more feminine cultures would choose public sector jobs that have more security, or would take up employment in the education sector or welfare.

Long term orientation (LTO) versus short term orientation (STO) speaks to virtues oriented towards future rewards compared to those with respect for the present and future (Hofstede, 2000). Characteristics of LTO are perseverance, thrift and delayed gratification while those for STO are respect for the past, tradition, fulfillment of social obligation and saving face. This might mean that students with LTO are willing to study in fields with longer period of completion because they are able to delay gratification. It could also mean that students with STO are more willing to study fields that their family desires in order to fulfill familial obligation.

Hofstede's theory however was not without controversy and a number of studies (McSweeney, 2002; Baskerville, 2003; Fang, 2003) came up to disclaim his theory. Some of the arguments that Hofstede's supporters present include: the relevance of the work, the rigour of the research framework and the relative accuracy of the studies (Jones, 2007). Jones (2007) documents Hofstede's main critics as well as his supporters and concludes that the argument of his supporters remain stronger than that of his critics. Furthermore, while some of the arguments presented by Hofstede's critics might be true, they could also be unfounded as no empirical analysis has been done. There have also been a number of recent cross-cultural studies that show that cultural traits do in fact influence career choice (Meir & Tziner, 2001; Hill, Ramirez, and Dumka, 2003; Coates, Skrbis and Western, 2008 and Trauth, Quesenberry and Huang, 2008). Following this logic, it is not a far stretch to hypothesize that culture could have an effect on unemployment and youth unemployment in particular. This study therefore proposes to show that culture can in certain instances influence youth unemployment. An important factor considering South Africa's high unemployment rates.

Knowing the effect culture has on the economy as well as the growing field of identity economics, the possible effects choice of career could have on youth unemployment, this article intends to use Hofstede theory to determine whether the cultural trait identified do influence career choice.

#### **4. Research design**

In order to determine whether cultural traits influence career choice among black South African youths, the study made use of a quantitative method of study. A quantitative method of study will be used, firstly, because this research requires the collection of numerical primary data to determine the existence of cultural traits, as well as the relationship between those cultural traits and career choices. It suffices to note that similar studies also used primary quantitative data. Hofstede (2000) in his study aimed at determining whether or not countries had distinct cultural traits, used attitude surveys to gain information on the attitudes of the different employees of IBM across different nations. The answers to different questions were expressed numerically and bore different weights which were then added to determine which cultural trait was prevalent among a certain group of people. Van Oudenhoven (2001) also conducted a study to investigate if Hofstede's dimensions were still applicable twenty years later. He used a specially designed questionnaire with four sets of questions related to Hofstede's culture-related dimensions. The respondents had to choose the dimensions they most identified with. Thereafter, he employed a multivariate analysis to determine the effect of nationality on the scores of the four dimensions.

##### **4.1. Survey**

A survey adapted from Hofstede's VSM survey was distributed to 264 black students at the University of Johannesburg. The survey comprised two parts. The first part of the survey contained a set of 25 questions that were geared towards finding which traits, in accordance with Hofstede's dimensions, the participants embody. Each trait had 5 questions measured on a scale of 1 to 5. A total out of 25 was taken and the total that is closest to 25 representing one

extreme, for instance having very high power distance while the total closest to 1 representing very low power distance. Upon calculation of the score, it will be possible to determine which cultural traits are dominant for the students.

Most of the questions added to the second part of the survey were done because they are factors that would influence the career choice and will therefore be used as control variables to determine the extent to which cultural traits influence career choice. These control variables include; Age, Gender, Academic proficiency (measured by matric results), Occupation of parents, Type of school/area of residence (whether rural or urban) and Parents' level of education.

Below is the list of the control variables to be used in the current study.

- **Age:** In most situations, older students have a better idea of what they want to study and what qualification has the most opportunities. Younger students are often naïve and are not aware of what the labour market requires. Age could therefore influence the choice of study (Fouad, 2007).
- **Gender:** Several studies have established that gender influences whether or not one enters certain fields. Engineering and mathematics-related fields have been found to be dominated by males (Auyeung & Sands, 1997; Dick & Rallis, 1991). Gender may not be the exclusive cause of the disparity, but it is a significant factor.
- **Academic proficiency** (measured by matric results): The requirement for studying in fields such as engineering and accounting is high m-scores. Therefore, academic proficiency significantly influences the choice of the field of study (Mashige & Oduntan, 2011; Fatoki, 2014).
- **Parents' occupation:** Parents' career choices may influence the fields of study that their children choose. In many cases, children are inspired by their parents' choice of career and tend to follow in their footsteps. Hairston (2000), for instance, found that a number of students were inspired to join vocational teaching by their parents who were already active in that profession.
- **Type of school/ area of residence** (whether rural or urban): Urban schools usually have a better level of education than rural schools. Consequently, students from urban schools generally perform better at matric. This gives them a better and wider range of fields of study to choose from. Furthermore, students living in township or rural areas may have a limited idea of the available fields of study. As a result, they may only choose fields that are better known to them and their friends.
- **Parents' level of education:** Parents with high levels of education are more likely to send their children to high schools with an enhanced quality of education. This would then help their children to attain better matric results. The parents of these learners would also be more likely to have higher incomes that would sponsor their children's enrolment in fields of study with high tuition fees and requirements (Stats SA, 2012).

## 4.2. Economic regression

Once the relevant data was obtained, an econometric analysis was carried out. The data was first analysed using a multinomial logit model to identify the probability of cultural traits affecting a decision on career choice. This helped determine whether there was a correlation between cultural trait and career choice. The logit model is used in cases where the dependent variable is not continuous but could be one of various alternatives. This model was chosen because it is the model used in similar studies relating to cultural traits and/or career choice (Golesorkhi, 2010; Mau & Bikos, 2000; Newton, Grayson & Whitley, 1998). The regression used is expressed below:

$$\text{logit}\left(\mathbb{E}\left[\frac{Y_i}{n_i}\mid\mathbf{X}_i\right]\right) = \text{logit}(p_i) = \ln\left(\frac{p_i}{1-p_i}\right) = \boldsymbol{\beta} \cdot \mathbf{X}_i,$$
$$= \beta_1 + \beta_2 X_i$$

The regression model is interpreted in the following way:  $\beta_2$ , the slope, measures the change in the logit or the probability of career choice change if there is a change in cultural traits. The intercept,  $\beta_1$ , measures the value of the probability of having a particular career choice if the effect of cultural traits is 0 (Gujarati, 2003). This analysis should help determine whether cultural traits significantly influence career choice. Career choices will therefore be the dependent variables. The career choices were divided into five fields of study; commerce, humanities, law, sciences and management

## 4.3. Comparison with unemployment statistics

The unemployment rates in different fields were acquired via Statistics South Africa and then compared with the results from the analysis. Stats SA provides statistics on the unemployment rates according to the different occupations. These statistics were used to establish which of the different fields of study chosen by students have the higher risk of unemployment. This was then used to determine whether there was a relationship between more popular career choices and fields with very high unemployment rates.

## 5. Results and discussion

Table 1 below shows the composition of the 264 students who took the questionnaire. The greatest percentage of students studied a field in Financial Sciences (36%) while the least percentage of students studied a field in management (8%).

**Table 1: Questionnaire Distribution**

<b>Financial Sciences</b>	<b>Humanities</b>	<b>Law</b>	<b>Sciences</b>	<b>Management</b>	<b>Total</b>
96	59	42	46	21	264
36%	22%	16%	17%	8%	100%

*Source: Own calculations*

The results of the questionnaire are displayed in table 3 below. The first row of data shows the average score for the students for each cultural trait. The second row multiplies the score by 4 to get values that approximate the values got in Hofstede’s study. The last row shows the scores Hofstede received in his study.

**Table 2: Results of Hofstede’s Cultural Questionnaire**

	<b>PDI</b>	<b>UAI</b>	<b>IDV</b>	<b>MAS</b>	<b>LTO</b>
<b>Survey score</b>	14	15	18	13	14
<b>Survey score*4</b>	55	60	73	53	57
<b>**Hofstede</b>	49	49 <sup>1</sup>	65	63	Unknown

*PDI = power distance index, UAI = uncertainty avoidance index, IDV = individualism, MAS = masculinity, LTO = long-term orientation*

*Source: Own calculations*

### 5.1 Econometric analysis

As indicated earlier, a multinomial logit model was used to measure the likelihood of cultural traits influencing the students’ career choice. The model calculates the odds of the independent variables influencing the dependent variable. For instance, the model would calculate the odds of race influencing one’s choice of field of study.

The multinomial logit model was chosen because it provides a categorical dependent variable and enables the use of more than one categorical independent variable as well. This was useful because the analysis was meant to determine whether the cultural traits of the students influence their choice of field of study which is a categorical dependent variable.

Five choices of field of study were considered: financial sciences, humanities, law, science, and management. The main dependent variables used are cultural traits, Power Distance Index (PDI), Uncertainty Avoidance Index (UAI), Individuality index (IDV), the Masculinity index (MAS), and Long Term Orientation (LTO). Other variables were added to serve as control variables; these include the Admission Point Score (APS), bursary, age, gender, area of residence (urban or rural), parents’ level of education, and language. The latter consisted of all 11 South African official languages: Afrikaans, English, isiNdebele, Sepedi, Sesotho, siSwati, Setswana, Xitsonga, Tshivenda, isiXhosa, and isiZulu.

The following command was run in Stata:

```
mlogit field idv uai mas lto pdi age i.gender aps i.area i.language i.bursary i.feduc i.meduc
```

The *i.* was put before certain independent variables to indicate that the variable is categorical and should be included.

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<sup>1</sup> Only 4 out of 5 questions in the survey were used to ascertain the Uncertainty Avoidance Index. This was due to a typing error that resulted in the repetition of one question.

**Table 3: Regression statistics**

Multinomial Logistic Regression	Number of obs = 264
	LR chi2 (100) = 168.93
	Prob>chi2 = 0.0000
Log likelihood= -329.19024	Pseudo R2 = 0.2132

Source: Own calculations

The Likelihood ratio chi-square, with a p-value<0.001, indicates that the model fits significantly better than an empty model. The pseudo R-square, while used to interpret the goodness of fit, is interpreted differently from the R-square in Ordinary Least Square (OLS) regressions. A number of pseudo R-squares can be used, but McFadden's R-square is the most commonly used and is thus the one used when Stata reports Pseudo R-squared as above (William, *n.d*). According to McFadden (1979), values between 0.2 and 0.4 indicate an excellent fit. The pseudo R-squared received in our model is 0.2132, which falls within the range.

The *listcoef* command was used to identify the variables that significantly influence the odds of students from specific race groups choosing particular fields of study. The command is part of the SPOST package that was designed specifically to run multinomial logit regressions in Stata. The purpose of the *listcoef* command is to list all the coefficients involved in comparisons of outcome categories. This means that the command lists the likelihood of one field of study being chosen over the other according to each variable. However, to get only the relevant variables, the level of significance was set at the 0.05 level. Hence, the only variables that were listed were those for which the odds of choosing one field of study over the other were significant.

The only significant variables found were the Uncertainty Avoidance index (UAI), Masculinity index (MAS), Long Term Orientation (LTO), age, the Admission Point Score (APS), bursary, and one language, namely, Sepedi. The variables that do not significantly influence the choice of any one field of study over the other are the following: Individuality index (IDV), Power Distance Index (PDI), gender, area of residence, languages other than Sepedi or parents' education. The findings regarding the significant variables are shown in tables 4 to 11 below. These tables denote the results of the variables that were found to significantly influence the odds of a student choosing one field of study over the other. The results in the second column are coefficients and represent the odds of choosing one field over the other. A negative sign shows that the variable reduces the odds of choosing the first field mentioned in the first column over the second one.

### 5.1.1 Uncertainty Avoidance Index (UAI)

The results show that a one-unit increase in the variable UAI is associated with a 0.23 and 0.26 increase in the relative log odds of being in the management field rather than Financial sciences or humanities, respectively. This is significant at the 0.05 level. This means that the chances of a student choosing to study in a management field over commerce or humanities is higher by 0.23 and 0.26 for every one-unit increase in the Uncertainty Avoidance index.

**Table 4: Significance of the variable Uncertainty Avoidance Index (UAI)**

Variable: mas (sd=2.874)

	B	P>   z
Management vs Financial sciences	0.2261	0.047
Management vs Humanities	0.2620	0.023

Source: Own calculations

The average score from the questionnaires at 60 is much higher than the Hofstede’s score at 40 depicting that for the students sampled, situations with uncertainty are likely to be avoided. Management is a field that is general in that in managers are required in almost every sector of the economy. This might provide students a certain level of assurance that they will be able to gain employment once they graduate especially when compared to specific fields such as financial sciences and humanities.

**5.1.2 Masculinity Index (MAS)**

The results show that a one-unit increase in the variable MAS is associated with a 0.17, 0.15 and 0.13 increase in the relative log odds of being in the Financial sciences field rather than humanities law or science, respectively. This is significant at the 0.05 level. This means that the chances of a student choosing to study financial sciences field over humanities, law or science is higher by 0.17, 0.15 and 0.13 for every one-unit increase in the Masculinity index.

**Table 5: Significance of the variable Masculinity Index (MAS)**

Variable: mas (sd=3.886)

	B	P>   z
Financial sciences vs Humanities	0.1744	0.003
Financial sciences vs Law	0.1470	0.020
Financial sciences vs Science	0.1263	0.045

Source: Own calculations

The 53 average score for MAS obtained on the basis of the questionnaire, compared to Hofstede’s score of 63, shows that South Africans tend to have more masculine cultural traits than feminine. This suggests that South Africans are more likely to choose a field in financial sciences or law than in humanities. Humanities is considered to have more feminine attributes as a number of its career paths are more concerned with caring and dealing with people. Financial sciences is regarded as a more masculine and driven field than humanities, with careers in fields such as accounting, and financial and investment analysis. Careers in financial sciences are largely considered as more competitive than those in humanities. Financial sciences are also more likely to be chosen over law. This is surprising since law can also be considered as masculine, given that it can be competitive and demanding in terms of time.

### 5.1.3 Long Term Orientation (LTO)

The results presented in Table 5.9 below show that a one-unit increase in the variable LTO is associated with a 0.2 increase in the relative log odds of choosing a field in law rather than in financial sciences, humanities, science, or management. This is significant at the 0.01 level, as it means that the higher the value of LTO a participant has, the greater the chances of them choosing to study law over the other fields of study.

**Table 6: Significance of the variable Long Term Orientation (LTO)**

Variable: LTO (sd= 4.053)

	B	P>   z
Law vs Financial sciences	0.2027	0.001
Law vs Humanities	0.2041	0.002
Law vs Science	0.2237	0.001
Law vs Management	0.1916	0.020

Source: Own calculations

Long-term orientation is associated with the ability to invest or delay gratification. This seems in line with the fact that a law degree takes longer to complete than most financial sciences-related fields. A degree in law takes at least 4 or 5 years to complete, depending on the specific field. Thereafter, a student is usually required to write articles within a company or to undertake postgraduate studies to acquire further skills. Students, therefore, have to be patient and persistent. They must also be willing to wait a while for a return on their investment on education. While the same can be said for students studying to be chartered accountants or engineers, the wide range of bursaries and scholarships available to the latter (rather than long-term orientation) may influence them to choose these fields of study. The next traits to be discussed are the control variables that were found to significantly influence career choice.

### 5.1.4 Age

The average age of the participants in the survey is 19.7 years. The results reveal that a one-unit increase in the variable AGE increases the likelihood of choosing to study law over a field in science by 0.5. This is significant at the 0.05 level.

**Table 7: Significance of the variable AGE**

Variable: age (sd= 1.375)

	B	P>   z
Law vs Science	0.4568	0.031

Source: Own calculations

This table shows that the older students are, the more likely they are to choose to study law over science. This might be because fields in science require a good foundation in the basics of mathematics and sciences. If at an older age, a student does not already have a good grasp of key concepts, it would be difficult for them to choose to study a field in sciences.

### 5.1.5 Admission Point Score (APS)

The results show that a one-unit increase in the variable APS is associated with an increase in the likelihood of choosing financial sciences over humanities, law, science and management by 0.31, 0.2, 0.33 and 0.33 respectively. These results are significant, with a p-value of 0 and 0.001. This shows that given a high APS, students generally choose financial sciences over the other fields of study. Given a choice between law and humanities or law and science, students appear to prefer to study law. Fields in financial sciences and law are often associated with higher levels of income and might be the reason for the preference in these fields.

**Table 8: Significance of the variable APS**

Variable: aps (sd= 5.7655)

	B	P>  z
Financial Sciences vs Humanities	0.3194	0.000
Financial Sciences vs law	0.2084	0.001
Financial Sciences vs Science	0.3317	0.000
Financial Sciences vs Management	0.3294	0.000
Law vs Humanities	0.1110	0.048
Law vs Science	0.1233	0.041

Source: Own calculations

To support the conclusion that academically-stronger students prefer fields with better compensation prospects, Table 9 below shows the compa-ratios of the median salary offered to new graduates, based on their qualification. Bachelor of Arts (BA) qualification is used as the base, as it pays the least in this sample. Compensation professionals use compa-ratios to assess how competitive an employee's pay level is. The table shows that BA degrees (usually in humanities fields of study) pay the least. Engineering (Science) pays an average of 25% more than BA degrees, while financial sciences fields of study can pay as much as 56% more – for chartered accountants – than humanities degrees. This might greatly influence students' choice of careers in financial sciences over fields of study in humanities and science. Financial sciences might also be chosen over science because it is commonly perceived as less difficult than the latter.

**Table 9: Compa-ratio of (new) graduate pay per academic qualification**

<b>Job family</b>	<b>Compa-ratio at median</b>
BA	100%
B.Com-Accounting	109%
B.Com-Economics	114%
B.Com-Information Technology	119%
B.Sc.	125%
B.Sc. Engineering-Electrical	129%
B.Sc. Engineering-Civil	129%
B.Com-Marketing	129%
B.Sc. Engineering-Mechanical	136%
B.Com-Accounting-Honours Degree	139%
C.A-Completed Articles	156%

*Source: Morton and Blair (2012)*

### **5.1.6 Bursary**

The results presented in Table 10 show that a one-unit increase in the variable bursary is associated with a 1.27 and 2 increase in the relative log odds of being in humanities fields than those in financial sciences or law, respectively. This is significant at the 0.01 level. A one-unit increase in the variable bursary is also associated with a 1.16 increase in the relative odds of being in a Science field than one in Law. This shows that students with a bursary are most likely to choose to study humanities than financial sciences or law; but, if required to select between science and law, they would choose science.

**Table 10: Significance of Variable BURSARY**

Variable: 1.bursary [sd= 0.499]

*Source: Own calculations*

It is important to note that the bursary considered here relates to the National Student Financial Aid Scheme (NSFAS), as documented in the University of Johannesburg's enrolment records. A number of students mentioned that they had bursaries; but, the only one that could be verified with reference to the university's records was NSFAS. While students are required to have achieved certain grade scores to qualify for this financial aid, they must also prove their financial need status. However, it must be observed that some students from poor backgrounds may not have had access to career guidance and were, therefore, unaware of this scheme.

Indeed, research has shown that a number of students from poor socioeconomic backgrounds are underprepared and uninformed about tertiary education and available careers (Dabula & Makura, 2013). These students may then choose their careers without adequate knowledge on the range of different courses available and what these mean for their future.

### 5.1.7 Language (Sepedi)

The only language which significantly affected the choice of field of study was Sepedi which is represented by variable 5.language. The results contained in Table 11 show that a one-unit increase in the variable 5.language (students who speak Sepedi) is associated with a 2.1 increase in the relative log odds of being in fields in the humanities than those in financial sciences. The results are significant at the 0.01 level.

**Table 11: Significance of the variable LANGUAGE**

Variable: 5.language (Sepedi) [sd= 0.323]

	B	P>   z
Humanities vs Financial Sciences	2.0848	0.032

*Source: Own calculations*

This table shows that students who speak Sepedi are more likely to choose to study humanities than financial sciences. Sepedi speakers often come from the Limpopo Province, which is one of the three poorest provinces in South Africa (Human Sciences Research Council, 2014). Students from poorer backgrounds tend to have less access to career guidance and lack knowledge about the courses available in different tertiary institutions; this might influence their choosing fields of study with few employment prospects (Dabula & Makura, 2013).

### 5.2. Summary discussion on significant variables

Seven of the 13 variables used in the model were found to be significant; while three of the cultural traits significantly influenced the choice of field study: Uncertainty Avoidance Index, Masculinity Index and Long Term Orientation. Students with a high masculinity index or high scores in long-term orientation were found to be more likely to choose to study financial sciences and law than other fields of study. Financial sciences, because it is perceived as more demanding and competitive, appeals to students with high MAS scores; while law, with its long period of study and relatively high compensation, appeals to those with high long-term orientation scores. Interestingly, such control variables as age and APS also lead to a preference for financial sciences and law. This might relate to the cultural traits above; but, it is also likely to be linked to a general perception of these fields as being more financially-rewarding and/or prestigious.

Students with high UAI scores were found to be more likely to study management over financial sciences or humanities. As mentioned earlier, this might be related to the fact that in terms of job opportunities management seems to be a safer option as almost every sector of the economy requires management. The control variables of bursary and language showed a higher probability of students on bursaries and having Sepedi as a mother language choosing to study Humanities over financial sciences and/or law. In the case of bursary students, choosing science over law. These choices could also have been influenced by the students' limited exposure to career expanding opportunities.

### **5.3. Unemployment rates per field of study**

Unemployment rates tend to vary according to the different fields of study. The fields of study with the highest rates of unemployment are business, commerce, and management at an average of 23.1% (Stats SA, 2014). All the other fields have unemployment rates well below the national unemployment rate. From the analysis done above, management is the field of study which students with high UAI tend to prefer. The high unemployment rate above shows that this may not be the best choice of career. However, the high unemployment rate may also be explained by the fact that many of the qualifications in these domains are obtained from FET (Further Education and Training) colleges which might not equip the graduates with sufficient skills.

Surprisingly the field of engineering has the third highest rate of unemployment at 5.3%. The fact that the unemployment rates of engineering graduates is not among the lowest is surprising given the high demand for graduates with these skills. Furthermore, according to the 2014 national scarce skills list, the top 20 professions in demand are electrical engineer, civil engineer, mechanical engineer, quantity surveyor, programme or project manager, finance manager, physical and engineering science technicians, industrial and production engineers, electrician, chemical engineer, construction project manager, mining engineer, accountant (other fields related to finance and accounting), energy engineer, materials engineer, electronics engineer, metallurgical engineer, medical superintendent / public health manager, telecommunications engineer, and energy engineering technologist (South Africa Department of Education and Training, 2014). Engineering clearly dominates the list. From our study, the only instance where a field of science was shown to significantly be preferred to another was when analysing the variable of a bursary. A one unit increase in the chance of a student having a bursary increased their chance of choosing a science field over law by 1.1. Thus the expectation would have been that the unemployment rates in science and engineering in particular since few students choose this field. The high unemployment rate in engineering however could be explained by the fact that these fields often prefer employees with more experience.

Section 5.3 above showed that financial sciences and law seem to be the fields that students are most likely to choose. However, these fields have relatively low unemployment rates of 3.5% and 1% respectively, especially when compared to management. It appears that there is a sufficiently growing demand for financial sciences or law graduates; hence, their unemployment rates remain relatively low. It thus seems that there are other factors at play other than culture in determining the high youth unemployment rate in South Africa.

## **6. Conclusion**

This section presented the results of both the Hofstede survey and the econometric analysis done thereafter in order to address the three objectives of the study: (1) establish whether cultural traits influenced career choice of black South African students; and (2) whether career choices affect youth unemployment rates.

The survey showed the number of students studying in each of the different fields of study. It then presented the results of the Hofstede questionnaire showing the values of the cultural traits of each population group. These values were then discussed. The econometric analysis carried out showed which of the variables used in the survey significantly impacted on the relative odds of choosing one field of study over the other. These results were then compared with the unemployment rates of graduates in different fields of study.

The first objective of the study sought to establish whether cultural traits influenced students' career choices, through the use of an econometric analysis. The results revealed that only three of the cultural traits – Uncertainty Avoidance Index (UAI), Masculinity index (MAS) and Long Term Orientation (LTO) – significantly influenced career choice. Students with high scores for MAS or LTO were more likely to choose to study financial sciences and law over the other fields of study. High MAS seemed to increase the likelihood of a student choosing to study financial sciences over humanities and law; while high LTO increased the likelihood of a student choosing to study law over financial sciences, humanities, management, and science. The UAI showed that students who have a higher score of this trait are likely to choose to study management over financial sciences or humanities which is consistent with students who would prefer avoid risk. Four of the control variables, namely, APS, age, bursary and language had a significant influence on career choice. Students with higher values of APS and age are more likely to choose to study either financial sciences or law over the other fields of study. Sepedi language speakers and bursary were more likely to study humanities over other fields of study. However, if given the choice between science and law, the student with a bursary is likely to choose to study science.

The last objective was to determine whether career choice affects youth unemployment rates. This was undertaken by comparing unemployment rates across different fields of study in order to establish the field that appeared to have the highest odds of being chosen. Results showed that the fields of financial science and law (which were preferred) have a fairly low unemployment rates, when compared to business, commerce, and management studies. Thus, the high unemployment rate in the field of financial sciences may be due to the fact that the graduates do not have the necessary experience, and/or because qualifications from FET colleges may not provide them with the necessary skills. The youth unemployment rates in science fields and engineering in particular were somewhat higher than in other fields.

It appears that, while certain cultural traits may influence career choice, the latter does not influence youth unemployment rates. More people need to study the possible relationship between the two in some strategic fields of study. More importantly, the quality of education needs to be improved in such a way that the graduates obtain critical skills. This implies, among others, improving mathematics and literacy skills from elementary levels to enable students to understand material much faster, and improve their grades. This will give them a wider range of fields of study to select from.

There may also be a need to increase students' access to internships to enhance their skills to give them work experience. Fields such as sciences could have more qualified students; but, factors such as experience play a significant role in whether or not graduates will find employment. The government has tried to effect this by introducing a youth wage subsidy. The

youth wage subsidy gives companies a tax incentive when they employ young people. This, in turn, gives the employees much-needed on-site experience.

However, emphasis must also be placed on career guidance in high schools. This should not just help students find fields of study suited to their interests and abilities, but should also involve an orientation on the available occupations and the prospect of getting employment on completion of tertiary education.

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