

# Factors influencing career choice of tertiary students in Ghana

## A comparison of science and business majors

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### Abstract

**Purpose** – The purpose of this paper is to investigate the factors that influence Ghanaian tertiary students' career choices. The paper explores the dimensionality of the career choice factors within the Ghanaian context and also ascertains their degree of influence on students' career choices.

**Design/methodology/approach** – The study employs survey method of research and a set of questionnaire was used to examine the factors that influence students' career choices. A total of 354 undergraduate students from the Ashesi University College in Ghana participated in the study. Factor analysis was conducted on the career choice factors and differences in response between science and business students were ascertained by means of independent sample *t*-test.

**Findings** – The findings of this study indicate that university students in Ghana place much premium on intrinsic value and employability/financial prospect in their career choice decisions than such factors as prestige and desired working conditions.

**Research limitations/implications** – The findings of this study are relevant for policymakers and tertiary education providers interested in making the study of science an attractive option for university students in Ghana.

**Originality/value** – The findings of this paper highlight some of the underlining reasons for the unpopularity of the study of sciences among university students in Ghana.

**Keywords** Ghana, Factor analysis, Academic major, Ashesi university college, Career choice, Tertiary education

**Paper type** Research paper

### Introduction

Theories such as the trait and factor theory (TFT), social cognitive choice theory (SCCT), theory of reasoned action (TRA) and theory of planned behaviour (TPB) suggest that preference of careers is influenced by factors that are internal and/or external to the individual and interaction between the individual and other people around them. Prior studies have employed these theories to study the factors that influence choice of course major/career path among individuals and groups, mainly students, in varied contexts (Agarwala, 2008; Jackling and Keneley, 2009; Joshi and Kuhn, 2011; Özbilgin *et al.*, 2005; Wen *et al.*, 2015).

The evidence from these empirical studies generally indicate that career decisions are made within contexts that are usually controlled by socio-cultural factors, individual factors, personal and cultural values, significant relationships in society and other structural factors. Moreover, the degree of importance students attach to the various factors that influence



their choice of academic major or career varies based on context (Watt *et al.*, 2012). This underscores the need for further research in different contexts, particularly from developing countries, which are yet to receive enough research attention. This study, therefore, revisits the career/major choice debate by exploring the factors that influence university students' course major decisions within the Ghanaian tertiary education environment.

Ghana provides quite an interesting and a unique setting for the subject matter in several ways. It has been observed that enrolment in tertiary education programmes in Ghana has been increasing in recent times (Government of Ghana, 2010; National Council for Tertiary Education, 2014). Total enrolment in tertiary education institutions stood at 283,469 by the 2012/2013 academic year, representing a 6.5 per cent increment over 2011/2012 academic year's figure of 266,123 (National Council for Tertiary Education, 2014). However, there are two trends in the enrolment record that are of major concern to educators and policymakers. First, actual gross enrolment ratio (GER) is far below the national target of 25 per cent. The tertiary education enrolment record for the 2012/2013 academic year compared to the population of the theoretical age group for that level produces a GER of 12.1 per cent. Second, the ratio of enrolment in the sciences to the humanities is below the national target of 60:40. The ratio of enrolment for sciences to humanities was 36:64 for the 2011/2012 academic year but fell to 32:68 for the 2012/2013 academic year (National Council for Tertiary Education, 2014; National Accreditation Board, 2015). Instructively, the lowest ratio of enrolment in the sciences to humanities is found amongst private universities, which recorded 28 per cent enrolment in the sciences against 72 per cent enrolment in the humanities (out of which 58 per cent were enrolled in business programmes alone) in the 2012/2013.

Notwithstanding the fact that the GER for tertiary education in Ghana is still below the national target, unemployment amongst tertiary education graduates is rising. Unemployment amongst holders of first degrees was 5.9 per cent as of October 2013, which was higher than the national unemployment rate of 5.2 per cent (Ghana Statistical Service, 2014). While the dwindling job opportunities for tertiary education graduates has been attributed in part to the Ghanaian economy, the disconnect between students' choice of academic major and industry needs has also been identified as an important factor underpinning the graduate unemployment situation. As indicated above, most tertiary students in Ghana prefer to pursue non-science-related programmes especially business administration. A significant number of students who studied science at high school usually divert into the humanities at the university level while a good number of university graduates from the basic and applied sciences also end up pursuing a postgraduate diploma or degree in business administration. Currently, close to 78 per cent of enrolment in humanities programmes in private universities is mainly enrolment in business programmes.

The question that arises is why students in Ghana generally prefer business programmes to science/technology-related programmes despite the Ghanaian Government's encouragement to enrol in the latter, and the increase in graduate unemployment. This study investigates this issue by examining the dominant factors that influence choice of academic major and career pathway of a section of university students in Ghana. In particular, the study investigates whether the factors that influence career choices differ between science and business administration students. The findings from this study do not only provide a good understanding of the factors relevant to the career decisions of university students, but are also useful to stakeholders in the education sector in designing programmes that best meet the aspirations of students. Moreover, the findings from this study could assist tertiary institutions and policymakers in designing programmes and policies that will inspire students to develop an interest in the sciences and technology degree programmes at higher levels.

The next section of the paper reviews previous related literature, followed by a description of the research methodology for the study. The subsequent section discusses the data analysis and findings from the study followed by the summary and concluding remarks.

### Literature review

#### *Theoretical perspectives on career choice*

Empirical studies have applied different theories including TFT, SCCT, TRA and TPB in investigating the factors that influence career choice decisions of students. This section provides an overview of these theories within the context of career choice decisions.

*Trait and factor theory (TFT).* TFT suggests that the preferences of individuals to gain maximum satisfaction from work life based on their interests and capabilities determine their career choice in life (Ginzberg *et al.*, 1951). Career choice studies that apply TFT relate identified job attributes preferred by individuals to their future vocation. These factors have broadly been categorised into intrinsic factors (such as job satisfaction, the opportunity to be creative and intellectually challenged), extrinsic factors (such as financial and job-related factors, perceived benefit-cost ratio of a profession) and interpersonal factors (e.g. influence of parents, peers and significant people in society).

*Social cognitive career theory (SCCT).* The conceptualization of the SCCT was an attempt to unify existing career choices. Developed by Lent *et al.* (1994), SCCT suggests that individual's choice of a major/career is influenced by goals often formed from interest, self-efficacy and outcome expectations. Interest refers to the likes/dislikes of an individual and indifference regarding the activities of a profession; outcome expectations refers to a person's beliefs on the consequences of performing an activity; and self-efficacy refers to the beliefs in one's ability to amass the needed motivation, cognitive resources and activities to meet a given situation (Joshi and Kuhn, 2011). Although SCCT has been used extensively to understand career choice in different settings and decision contexts, such outcome-expectancy models are unable to capture fully other important factors that may influence interest in a subject major/career. For instance, SCCT fails to capture the direct effect of socio-cultural environment (documented to have important implications on a persons' attitudes towards a career) on career choice, though the theory suggest a likely indirect influence (Lent *et al.*, 2003).

*Theory of reasoned action (TRA) and theory of planned behaviour (TPB).* The TRA and the TPB are based on perception and behaviour. TRA theorises that individuals' evaluations about an action (attitudes) and beliefs about socially expected actions (subjective norms) influence their intentions to pursue that action (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980). In career choice decisions, TRA explains that a person would form greater intentions to pursue a career when evaluations about that career is favourable and believes that important referent groups (e.g. parents, teachers, mentors, peers, etc.) would approve of it. TRA assumes that the individual has complete volitional control over the behaviour in question (Ajzen, 1991). However, TRA fails to predict behaviour in cases where certain factors, including the individual's own ability to perform it (i.e., self-efficacy) and the presence/absence of contextual factors (e.g., resources or opportunities), restrain the ability of the individual to perform the behaviour. TPB improves on the predictive power of TRA by including perceived behavioural control as an added factor in predicting behaviour, particularly in situations where the individual has incomplete volitional control over the behaviour (Ajzen, 1991). Thus, attitudes, subjective norms and perceived behavioural control form the basis of the TPB.

Attitude is conceptualised as a multi-item construct comprising of behavioural beliefs. According to Ajzen (1991), individuals form beliefs about a behaviour as they evaluate the attributes of the behaviour (e.g., consequences, characteristics) and attributes

of competing behaviours. What individuals perceive as the ultimate outcome of pursuing a career (i.e., their behavioural beliefs or attitudes about the career) has been classified as either intrinsic or extrinsic factors (Jackling and Calero, 2006). The extrinsic factors are the perceived outcomes and rewards that individuals expect to get from pursuing a career such as earnings and prestige while the intrinsic factors are the perceived personal satisfactions expected to be gained from pursuing a career, including opportunity to be creative and to be intellectually challenged (Felton *et al.*, 1994). From the perspective of TFT, attitude is described to encompass evaluations about the intrinsic and extrinsic satisfactions, while the SCCT defines attitude as interest and outcome expectations.

Subjective norms refer to normative beliefs that individuals form from social expectations. Individuals may learn to perform a behaviour by observing, imitating and modelling others (Bandura *et al.*, 1977). Thus, both TRA and TPB theorise that individuals' perception of social pressure from referent groups influences their intention to perform a behaviour (Ajzen, 1985, 1991). If individuals perceive that their career decision will get approval from important members of the social group, they are likely to pursue that career. However, it is important to note that individuals would relate the behaviour they are being socially pressured to perform with its consequences before imitating (Bandura *et al.*, 1977). Thus, the influence of subjective norms on behavioural intentions depends more on the individual's motivation to comply than the strength of the normative belief (Ajzen, 1991).

Bandura *et al.*'s (1977) and Bandura's (1982) self-efficacy theory suggests that individuals would have greater intention to engage in that activity they feel capable of. This notion is captured in the perceived behavioural control construct.

Arguably, TRA and TPB are believed to be the most dominant theories espoused to explain the determinants of career choice (Porter and Woolley, 2014). Prior studies have used TRA and TPB to explain how students' attitudes, subjective norms and perceived behavioural control influence their career choices in varied professions, including, information systems (IS) (Joshi and Kuhn, 2011), medicine (Ranta *et al.*, 2002), self-employment (Kolvereid and Isaksen, 2006) business and accountancy (Ahmed *et al.*, 1997; Allen, 2004; Auyeung and Sands, 1997; Tan and Laswad, 2006; Wen *et al.*, 2015).

#### *Factors influencing students career choice decisions*

*Behavioural beliefs and outcome expectancy.* Prior studies have examined the factors that shape individuals' attitudes towards careers and the role those attitudes play in career choices. The literature documents job satisfaction, intellectual challenge, opportunity for advancement, financial remuneration and earnings potential, social status, job security and job prospects/availability as the behavioural beliefs and outcome expectancy (attitudes) that influence students' career choices (Ahmed *et al.*, 1997; Bastick, 1999; Jackling and Calero, 2006; Jackling and Keneley, 2009). While some of the determining factors may be generic to all careers and contexts, others are unique to certain contexts, groups of people and specific careers.

Carpenter and Strawser (1970) studied the employer preferences of accounting students in the USA, and found that accounting students assign utmost importance to the nature of work and opportunities for advancement in the choice of employment. Though this early study provided useful insights, the knowledge provided was limited because of its narrow focus on accounting students. Paolillo and Estes (1982) addressed that limitation by examining the factors that influence career choice decisions amongst accountants, lawyers, mechanical engineers and physicians in the USA. They find that while accountants and mechanical engineers consider availability of employment as the most important factor that influences their career choices, lawyers view social status as the most important factor and physicians are influenced most by their parents and job satisfaction.

These findings suggest that the effect of behavioural beliefs and outcome expectancy on career choices differ across disciplines.

The evidence by Carpenter and Strawser (1970) suggests that accounting students are motivated by intrinsic factors when making career choices. Subsequent studies however suggest otherwise. Ahmed *et al.* (1997), for instance, conclude that accounting students in New Zealand attach lower importance to intrinsic factors while Jackling and Keneley (2009) report that market-related and extrinsic factors influence the course major decision of undergraduate accounting students in Australia.

Intrinsic factors have been found to be influential to the choice of teaching as a profession. In a cross-country study by McKenzie *et al.* (2005), they concluded that the potential for intellectual fulfilment and the desire to make social contribution are the factors mostly considered in choosing teaching as a career. Similarly, Watt *et al.* (2012) found the desire to make a social contribution and work with children/youth to be the factors that influence teacher career choice in Australia, the USA, Germany and Norway. The evidence from studies in developing countries, however, suggests that extrinsic factors are rated as the most dominant factors that influence career choice. Chivore (1988) examined the factors that influence the choice of non-graduate student teachers to pursue secondary teaching profession in Zimbabwe and found salaries, fringe benefits and working conditions to be the key factors that influence teachers' career decision. Moreover, Bastick (1999) showed that extrinsic factors such as job security and adequacy of salaries accounted for the highest variations (24.2 per cent) among trainee teachers in Jamaica.

The preceding discourse suggests that the extent of influence of the factors that affect career choice on individuals' decision is contextual. Although both intrinsic and extrinsic factors affect students' career choice decisions, the general belief is that individuals in developing countries consider extrinsic factors more important in their choice decisions relative to intrinsic factors.

*Social normative and socio-cultural factors.* Prior studies identify parental influence, educational background of parents, economic status of parents, influence of important others (e.g., teachers, career mentors and peers) and attitudes regarding a specific policy relating to a career as the social norms that influence students' career choice (Cohen and Hanno, 1993; Dandy and Nettelbeck, 2002; Tan and Laswad, 2006). The extent of influence and the importance of normative subjects' influence depend on the type of career. For instance, accounting students recognise greater positive social norms towards majoring in accounting than non-accounting students (Cohen and Hanno, 1993; Tan and Laswad, 2006). Nonetheless, parental/family influence has been identified as the most influential social normative factor regardless of the type of discipline/career being considered (Allen, 2004; Dandy and Nettelbeck, 2002; Paolillo and Estes, 1982).

Dandy and Nettelbeck (2002) investigated how educational expectations of parents with Asian–Australian and Anglo–Celtic Australian backgrounds[1] affect the aspirations of their children, hence, career choices. Their findings show that whilst Chinese and Vietnamese parents prefer university education for their children, Anglo–Celtic Australian parents from lower socio-economic backgrounds preferred their children to undertake vocational and apprenticeship. Flowing from this, the socio-cultural context of the family and community of individuals has also been argued to influence their career choice process. Chen (1997) asserts that individuals' career choice decisions are influenced by the way individuals develop and their immediate environment. Families, current professionals, private tutoring/coaching, the prestige of the profession and requirements for that profession play a major role in the career choice of individuals. Individuals' interactions with family, school and community enable them to explore different careers to form an initial perception about an "ideal job".

Studies that associate culture with career choice of students focus on the individualism–collectivism culture dimension in examining the effect of cultural variations on career choice (Agarwala, 2008; Auyeung and Sands, 1997; Özbilgin *et al.*, 2005). These studies argue that career choices are influenced by society and to the extent that preferences for social influences differ in individualistic and collectivistic culture, career choice decisions may also differ between these cultures[2]. Employing this culture dimension, Agarwala (2008) reports that students with a higher level of individualism attach greater importance to extrinsic factors in their career choice decisions. Collectivist-oriented students, on the other hand, emphasise the love of career in the career decisions. Thus, career choice decisions of individualistic students are largely influenced by their self-efficacy and extrinsic factors, whilst collectivistic students are more influenced by the social normative beliefs.

*Behavioural control and self-efficacy.* Existing studies argue that students' interest in a career, barriers associated with pursuing that career and beliefs about their ability to perform effectively in that career are key in determining their choice of that career especially across varied disciplines. (Auyeung and Sands, 1997; Joshi and Kuhn, 2011; Lent *et al.*, 2003). Lent *et al.* (2003) find self-efficacy and outcome expectations to be important predictors of career interest of engineering students in Italy. Studies on choice of IS as a career present similar evidence (Akbulut and Looney, 2007; Joshi and Kuhn, 2011). According to Joshi and Kuhn (2011) students who are highly confident in their technical abilities and believe that IS career is attuned to their work values are more likely to choose IS as a major. Perception of self-efficacy is also found to be positively correlated with choice of business majors such as accounting. Aptitude for the accounting profession has been found to influence Australian students to pursue accounting major (Auyeung and Sands, 1997).

While perception of self-efficacy, particularly aptitude for performing tasks associated with the career, enhances interest in a career, barriers associated with a career could reduce interest regardless of the level of perceived self-efficacy. Prominent among these career barriers are period required for training, difficulty in maintaining certification and environmental support (Allen, 2004; Wen *et al.*, 2015). As Allen (2004) points out, the number of years required for qualifying and entering the accounting profession influence students' decision to pursue accounting. Wen *et al.* (2015) also find perceived difficulties in maintaining professional accounting certification to be a key predictor of Chinese college accounting students' intention to pursue the Chinese Certified Public Accounting qualification.

The above discourse suggests that different factors influence students' career choices among different occupational groups and academic disciplines. However, with the exception of a few (Paolillo and Estes, 1982; Mau, 2003; Ferry *et al.*, 2000), most career choice studies have focused on only one career/academic major. Studies that focus on only one career/major inhibit direct comparisons to other alternative careers/majors. Accordingly, Joshi and Kuhn (2011) suggest the need for future research to consider a more comprehensive assessment of career choice factors using different career option.

### Methodology

*Sample, data collection and research instrument.* This study was conducted with students from Ashesi University College in Ghana majoring in business administration, management information system (MIS), computer science and Engineering. Ashesi University College is a private non-profit liberal arts college with a total student population of 679 as of August 2015. Ashesi offers majors in business and non-business areas, all of which are built on a strong foundation in the arts and sciences. Compared with other universities in Ghana, Ashesi is unique in several important ways and, hence, provides an appropriate setting for studying factors that influence career choice among university students in Ghana.



It remains the only university in Ghana in which all students take the same liberal arts foundation courses (courses in mathematics, communication, economics, business, design thinking and computing) in their first year, and then decide on their area of specialisation at the end of the first year. Also, Ashesi offers a common business administration major without the usual specialised programmes such as accounting, finance, human resources management and marketing that are common in other universities. Employment record from the College's Career Services Department indicates that graduates of Ashesi have pursued employment opportunities in various disciplines.

A questionnaire was developed and administered to students during classes and they were instructed to fully complete questions after explaining to them the purpose of the survey. Students were assured of the confidentiality of their answers which were to be used only for the purposes of the study. The questionnaire used closely corresponds to the instrument used in Sugahara and Boland (2009) and employed in many earlier empirical works including (Ahmed *et al.*, 1997; Auyeung and Sands, 1997). Overall, the questionnaire consisted of three different parts. Part 1 contained demographic information on the respondents, part 2 contained questions on factors that students consider when deciding on their career choice and part 3 looked at the influence of some identified persons on the career choice of students.

### Analysis of results

#### *Descriptive statistics*

The data were collected from a total of 365 undergraduate students from Ashesi University College in Ghana. Out of this number, a total of 12 questionnaires were excluded from the final analysis because respondents failed to answer all the questions. Table I shows the results from the descriptive statistics of the respondents. These characteristics are in the

Variable	Frequency	Per cent
<i>Year of study</i>		
First year	101	28.5
Second year	94	26.6
Third year	133	37.6
Final year	25	7.1
<i>Course major</i>		
Business administration	216	61.0
Management information systems (MIS)	59	16.7
Computer science	43	12.1
Engineering	35	9.9
<i>Age (years)</i>		
Less than 18	17	4.8
18–25	329	92.9
26–30	4	1.1
31–40	1	0.3
Above 40	1	0.3
<i>Gender</i>		
Male	178	50.3
Female	176	49.7
<i>Nationality</i>		
Ghanaian student	286	80.8
Foreign student	68	19.2

**Table I.**  
Demographic characteristics of respondents

form of their year of study, their course major and other demographic characteristics. Respondents were mainly in their third year of study, offered business administration and were mainly between the ages of 18 and 25 years. In terms of their gender, there was almost an equal distribution of males and females within the sample as the males outnumbered the females by just a difference of two. The sample also contained approximately 19 per cent of students who came from other foreign nations to study in Ghana.

### Career choice factors

The study outlined 16 factors that students consider when making career decisions based on existing empirical studies (Sugahara and Boland, 2009). The students were made to rate the level of importance they attach to these factors on a scale of 1–7 with 1 denoting low level of importance and 7 denoting higher level of importance. As shown in Table II, the factors that were predominantly rated by respondents as very important were related to job satisfaction (mean = 6.51, SD = 0.99), opportunities to advance in life (mean = 6.14, SD = 1.23) and good physical working conditions (mean = 6.13, SD = 1.12). On the other hand, the factors that were mostly rated low by the respondents were related to the length of working hours (mean = 5.21, SD = 1.52), having a structured career path (mean = 5.07, SD = 1.61) and having a social prestige (mean = 4.91, SD = 1.73). The ensuing subsections present tests of differences that exist among the respondents on the career choice factors. First, analysis of variance tests that seek to assess whether differences exist in the level of importance students attach to the various career choice factors based on their programme of study is presented. This is followed by results of independent samples *t*-test that assesses the differences in importance ratings of career choice factors between business students and the science students. Finally, the study sample is further partitioned into foreign and Ghanaian students and by means of independent samples *t*-test, differences in respondents views on the career choice factors are ascertained based on nationality.

*Similarities and differences based on programme of study of respondents.* Two major factors that were considered as the most important by students across the various programs

Career choice factor	General		Programme-based averages			
	Mean	SD	Science students	Business students	<i>t</i> -test <i>p</i> -value <sup>a</sup>	<i>t</i> -test <i>p</i> -value <sup>b</sup>
A structured career path	5.07	1.61	4.76	5.16	0.056*	0.37
Advancement opportunities	6.14	1.23	5.87	6.21	0.032**	0.68
Chance to make a contribution	5.91	1.34	5.92	5.91	0.948	0.17
Element of variety and adventure	5.79	1.26	5.68	5.81	0.429	0.71
Flexibility in career options	5.92	1.29	5.75	5.97	0.183	0.07
Good initial salary	5.48	1.48	5.29	5.53	0.206	0.48
Good long-term earning potential	6	1.31	5.86	6.04	0.267	0.23
Good physical working conditions	6.13	1.12	6.03	6.16	0.348	0.65
Interaction with others	5.27	1.5	4.99	5.35	0.062	0.03*
Job availability	5.68	1.48	5.62	5.70	0.695	0.74
Job satisfaction	6.48	0.99	6.45	6.49	0.765	1
Length of work hours	5.21	1.52	4.88	5.31	0.030**	0.56
Nature of the job	6.08	1.25	5.99	6.11	0.460	0.83
Security of employment	5.93	1.34	5.51	6.04	0.002***	0.34
Social prestige	4.91	1.73	4.49	5.03	0.015**	0.17
Sufficient time for personal life	5.75	1.37	5.52	5.82	0.092	0.83

**Notes:** <sup>a</sup>*t*-test to show differences in career choice factors among business and science students; <sup>b</sup>*t*-test to show differences in career choice factors among foreign and Ghanaian students. \*, \*\*, \*\*\* Significant differences at 10, 5 and 1 per cent levels of significance, respectively

**Table II.**  
Importance ratings on  
career choice factors



(business administration, MIS, computer science and Engineering) were job satisfaction and good physical working conditions. As shown in the second panel of Table II, irrespective of the area of specialisation by a student, job satisfaction (mean = 6.48) and good physical conditions (mean = 6.13) were rated as the two most important factors that influence career choice decisions of students. However, there exist differences in the level of importance students attach to the career choice factors based on their area of specialisation. For instance, in addition to job satisfaction and good physical working conditions, business administration students consider advancement opportunities (mean = 6.28) and the nature of the job (mean = 6.21) to be highly important in career choice decisions. In the case of MIS students, security of employment (mean = 6.00) and the opportunities for advancement (mean = 5.97) were the two other important factors that were considered in selecting a career in addition to job satisfaction and good physical working conditions. Computer science students on the other hand attach greater importance to the nature of the job (mean = 5.91), advancement opportunities (mean = 5.97) and the chance to make a contribution (mean = 5.69) as other important factors to consider in career selection. Engineering students attach greater importance to the nature of the job (mean = 6.09) and flexibility in career options (mean = 6.06) in addition to job satisfaction and good physical working conditions being most important factors to be considered when making a career choice (see Table II).

The results of the analysis of variance test as shown in Panel 3 of Table II on the career choice factors demonstrate that significant differences exist in terms of the perceived importance respondents attach to four of the factors based on their programme of study: a structured career path ( $p$ -value 0.01); job satisfaction ( $p$ -value 0.03); length of work hours ( $p$ -value 0.04) and social prestige ( $p$ -value 0.04). These factors are marked with asterisk (\*) in Panel 3 of Table II. *Post hoc* tests among these four factors show that the business students attach greater level of importance to these factors than that of the engineering, computer science and MIS students.

*Similarities and differences between business and science students.* To gain much insights into the career choice decisions of university students, the sample was further divided into two major groups – business and science students. The aim was to establish whether differences exist in the career decisions between the business students and students pursuing a degree in science. Students pursuing a degree in business administration and MIS constituted the business group whilst computer science and engineering students were classified as the science group.

Among the science students, five factors were rated to be highly important in students' career decisions with each factor recording values above the mean score of 3.5. These factors were: job satisfaction (mean = 6.45), good physical conditions (mean = 6.03), the nature of the job (mean = 5.99), the chance to make a contribution (mean = 5.92) and advancement opportunities (mean = 5.92). Similarly, the five highly rated factors among the business students were job satisfaction (mean = 6.49), advancement opportunities (mean = 6.21), good physical working conditions (mean = 6.16), the nature of the job (mean = 6.11) and a good long-term earning potential. The latter also recorded the same average score with security of employment (mean = 6.04). In addition, the highly rated factors were similar for both business and science students. Key point to take note of is that business students consider good long-term earning potential to be critical in their career decision making whilst science students are motivated by the opportunity to make a contribution when deciding on the career path.

*Test of differences between business and science students.* The results of the independent  $t$ -test (as shown in the fourth panel of Table II) demonstrate that significant differences exist between science and business students with regard to the perceived importance they attach

to four of the factors: a structured career path ( $p$ -value = 0.056); advancement opportunities ( $p = 0.032$ ), length of work hours ( $p = 0.03$ ), security of employment ( $p < 0.01$ ), interaction with others ( $p = 0.03$ ) and social prestige ( $p = 0.015$ ). These factors are marked with asterisks (\*\*\*) in the third panel of Table II. In all of these factors, the scores for business students were substantially higher than that of the science students. By implication, the average business student seems to attach greater level of importance to these factors when considering their career options than do science students. A closer look at these factors clearly demonstrates that these results are to be expected within the Ghanaian context. As pointed out in the introduction, the demand for professionals in the science field far exceeds the supply. Hence, job security may not be an issue for concern for an individual with a science background compared with an individual in the business profession. Again, in Ghana, long hours of work are commonly associated with science professions including medicine, allied health and engineering.

*Test of differences between foreign and Ghanaian students.* The results of the independent samples  $t$ -test show no difference in average importance ratings on the career choice factors between foreign and Ghanaian students except for the factor "interaction with others" in which the average score for the foreign students was significantly higher than that of the Ghanaian students. Foreign students may thus want to consider jobs that will provide them the opportunity to interact with others.

#### *Exploratory factor analysis on career choice factors*

The career choice factors were subjected to an exploratory factor analysis in order to examine its psychometric properties. The principal component method of extraction criterion using the varimax rotation method was employed in conducting the factor analysis. Tests of the adequacy of the data indicated that the data were sufficient for factor analysis to be undertaken as the KMO test for sampling adequacy yielded a value of 0.84, which is greater than the recommended threshold of 0.8. Similarly, the Bartlett test of sphericity yielded a significant value ( $p < 0.01$ ) which gives an indication that the data are sufficient for factor analysis to be performed.

A total of four factors were extracted explaining over half of the total variation (54.98 per cent). The first factor termed as "employability and financial prospects" contained indicators that characterised good earning potential, job availability, good initial salary and other indicators as seen in Table III. The second factor referred to as "desired working conditions" was mainly characterised by the nature of the job, sufficient time for the personal life of the worker (or student) and job satisfaction. Two items loaded on the third factor and these were related to social prestige and a structured career path which is referred to as "job prestige". The fourth factor referred to as "intrinsic value" had a total of three items loaded on it and these were characterised by flexibility in career options, element of variety and a chance for the worker (or student) to make a contribution in his or her career path. Taken together, the results from the factor analysis demonstrate that the factors that influence students' career choice in Ghana can broadly be categorised into four distinct groups as indicated in Table III.

#### *The influence of referent group on students' career choices*

Career choices by students are believed to be influenced by some people usually associated with the students in one way or the other. The study, therefore, sought to ascertain the extent to which students' career decisions are influenced by these people including parents of the student, friends or peers, lecturers and people who are working in the field of the students' preferred profession (mentors). Students were made to rate the level of influence by these key people on a scale of 1–7 with 1 representing a low level of

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60,9

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**Table III.**  
Factor analysis on  
career choice factors

Career choice factors	Employability and financial prospects	Desired working conditions	Job prestige	Intrinsic value
Good long-term earning potential	0.740			
Job availability	0.723			
Good initial salary	0.649			
Security of employment	0.593			
Nature of the job	0.569			
Sufficient time for personal life		0.699		
Good physical working conditions		0.666		
Job satisfaction		0.659		
Interaction with others		0.636		
Length of work hours		0.601		
Social prestige			0.807	
A structured career path			0.681	
Advancement opportunities				0.736
Flexibility in career options				0.676
Element of variety and adventure				0.557
Chance to make a contribution				1.104
Eigenvalues	4.767	1.723	1.202	1.104
Percentage of variance explained	17.31	15.33	11.29	11.05

influence and 7 representing a higher level of influence. Table IV presents the descriptive statistics for the level of influence for each of the above-mentioned groups on students' career choices.

The results from the descriptive statistics indicate that students' career choices are greatly influenced by the people who are working in their field or profession (mean = 4.85, SD = 1.76) and this is followed by their parents (mean = 3.97, SD = 2.00). Compared with all the groups, the influence of "peers" (friends and classmates) on students' career choices appears to be very minimal (mean = 2.60, SD = 1.58). Sub-group analysis also demonstrates that both science and business students consider the views of professionals in their respective profession to be key in their career decisions. For each of these two categories of students (science and business students), their career choices are highly influenced by people in their profession (mean = 4.71 for science students and mean = 4.88 for business students). Test of differences shows substantial differences in level of parental influence between science and business students (see Panel 6 of Table IV). The result suggests that the level of parental influence was high among the business students than with the science students.

An analysis of variance test also indicated substantial differences in the level of influences among the various identified groups ( $F = 104.3, p < 0.01$ ). *Post hoc* test on the pairwise differences as shown in Table V reveals that substantial differences exist among all the identified groups (parents, peers, lecturers and people in profession). This is because the least significance difference (LSD) test yielded substantial difference between the pairwise comparisons for every two groups (see Table V).

**Table IV.**  
Level of influence on  
career choices

Groups	Average	SD	Science students	Business students	t-test p-value
Parents	3.97	2.0	3.49	4.09	0.021
Peers	2.6	1.58	2.48	2.64	0.439
Lecturers	3.16	1.75	3.09	3.18	0.688
People in profession	4.85	1.77	4.71	4.88	0.459

*Comparison of career factors*

Having identified the dimensions of the career choice factors, further analysis was done to compare the average scores of the factors extracted from the factor analysis procedure. In order to obtain a composite score for each factor (since each factor had more than one indicator), a weighted average index was constructed for each of the factors extracted including the referent group factor. This was done by using the factor loadings of the indicators for each factor as weight and multiplying the value of each indicator with their respective weights for each factor. Therefore, similar to the career choice factors, the referent group was also subjected to factor analysis in order to derive the factor loadings for the computation of its composite score. This yielded a single factor solution that explained about 48 per cent of the total variation. The respective loadings for the indicators of the referent group factor are as given in Table AI.

Table VI presents the overall average scores for the factors that were generated from the factor analysis process. It also presents the average values for each factor for the science and business students and results from an independent sample *t*-test. A comparison of the average scores among the various dimensions extracted shows that students attach greater importance to the employability and financial prospects factor in their career decisions than the other factors (mean = 3.82, SD = 0.66). This was closely followed by the factor referred to as "intrinsic value" (mean = 3.80, SD = 0.62). The influence of referent groups had the least average score (m = 2.49, SD = 0.86). In each of these factors, the average scores for business students were higher than science students. Details of the average scores for each factor for business and science students are shown in the fourth and fifth panel of Table VI, respectively. The results from the independent samples *t*-test (see Panel 6 of Table VI) show that substantial differences exist between science and business students for three of the factors: employability and financial prospects; desired working conditions and job prestige. An analysis of variance test shows that differences exist in level of influence among the various factors that were extracted. From the *post hoc* tests (see Table VII), the influence of referent group was seen to be the least among all the other factors. Similarly, the score on the employability and financial prospects factor was significantly higher than that of the desired working conditions and the job prestige factors.

Groups	Parents	Friends	Lecturers
Parents			
Friends	1.34***		
Lecturers	0.79***	0.545***	
People in profession	0.89***	2.23***	1.68***

**Table V.**  
LSD test for pairwise  
differences in levels  
of influence

Factor	Overall average score	SD	Average score for science students	Average score for business students	<i>t</i> -test <i>p</i> -value
Employability and financial prospects	3.80	0.66	3.68	3.83	0.078*
Desired working conditions	3.62	0.58	3.48	3.65	0.022**
Job prestige	3.49	0.81	3.26	3.55	0.007**
Intrinsic value	3.82	0.62	3.75	3.84	0.312
Referent group influence	2.49	0.86	2.35	2.53	0.131

**Table VI.**  
Level of influence of  
career choice factors

**Note:** \*, \*\*, \*\*\*Represents significance at  $p < 0.1$ ;  $p < 0.05$ ;  $p < 0.01$  respectively

	Employability and financial prospects	Desired working conditions	Job prestige	Intrinsic value
<i>General</i>				
Desired working conditions	0.18 <sup>a</sup> (0.01***)			
Job prestige	0.31 (0.00***)	0.13 (0.13)		
Intrinsic value	-0.02 (0.10)	-0.20 (0.00***)	-0.33 (0.00***)	
Referent group influence	1.304 (0.00***)	1.12 (0.00***)	0.99 (0.00***)	1.32 (0.00***)
<i>Science students</i>				
Desired working conditions	0.20 (0.11)			
Job prestige	0.42 (0.001***)	0.22 (0.07)		
Intrinsic value	-0.07 (0.55)	-0.27 (0.28)	-0.49 (0.00***)	
Referent group influence	1.33 (0.00***)	1.13 (0.00***)	0.91 (0.00***)	1.41 (0.00***)
<i>Business students</i>				
Desired working conditions	0.18 (0.003***)			
Job prestige	0.28 (0.00***)	0.10 (0.82)		
Intrinsic value	-0.004 (1.00)	-0.18 (0.003***)	-0.29 (0.00***)	
Referent group influence	1.29 (0.00***)	1.12 (0.00***)	1.01 (0.00***)	1.30 (0.00***)

**Table VII.**  
Results of *post hoc* tests showing pairwise differences between factors

**Notes:** <sup>a</sup>Mean differences are given in terms of factors on the column – factors on the row. \*\*\*Difference significant at the 1 per cent level

The *post hoc* test also indicates that in terms of responses from the science students, the financial prospects and the desired working conditions factors did not show any substantial differences in terms of extent of influence of the career choices of the students. However, the employability factor was significantly higher than the job prestige factor in terms of level of importance while the intrinsic value factor was also rated higher than job prestige factor. A similar trend was observed with the business students as shown in Table VII.

### Conclusion

The purpose of this study was to identify and examine the factors that influence the career choices of students at the tertiary level. Against the backdrop that these factors are believed to be contextual in nature, this study explored the career choice factors within the Ghanaian context focussing on differences between science and business students. The paper explored the dimensionality of the career choice factors and also ascertained the degree of influence of these factors on students' career decisions.

The results of this study demonstrate that within the Ghanaian context, four factors, i.e. employability and financial prospects, desired working conditions, job prestige and intrinsic value, affect the career choice of university students in varying degrees. In addition, parents, university lecturers and other people associated with the student in one way or the other (referent group) also influence the career choice decisions of students. A comparison of these factors, however, indicates that most students attach higher level of importance to employability and financial prospects as well as intrinsic value when deciding on their career choice at the university level. This finding indicates that the sampled students generally place less premium on prestige and working conditions when considering their careers but would rather focus on job availability and security, high remunerations or jobs that would enhance their personal development and place them in high demand. The study also finds the degree of influence of these factors to be higher on business students than science students, although in both disciplines, their respective referent groups make the least influence on the career decisions.

The findings from the present study have important implications for countries especially those faced with the challenge of meeting the demand for professionals in some sensitive sectors such as health, engineering, education, etc. As the results demonstrate, different factors affect the career choice decisions of students. An understanding of these factors could be useful in developing appropriate strategies aimed at attracting students to pursue careers where their services will be most needed. Specific to the Ghanaian context, the findings of this paper have important implications for policymakers and tertiary education providers interested in making the study of science an attractive option for university students in Ghana. An understanding of the career choice factors is relevant to policymakers when developing policies meant to attract students into the science field in order to address the current disparities in enrolment ratio for sciences to humanities in Ghana. Whereas in the past the prestige associated with a profession was enough to attract people to a profession, this study demonstrates that such values are gradually losing their relevance in the Ghanaian culture as students are more inclined to go in for professions with promising financial rewards. Against the backdrop that the existing remuneration for professionals in the science field in Ghana is generally believed to be low compared with other professionals in the business field, policymakers will have to consider addressing the disparities in the wage structure in an attempt to make the study of science more attractive to university students. Again the existing policy in the education sector that permits only students who did science at the senior high level to pursue a degree in science at the university should be reconsidered.

There are some limitations to this research. First, the findings of this research are based on data collected from students from only one university in Ghana. The results of this study are thus not representative of factors influencing career decisions of university students in the country. Future studies could consider this same subject matter using students in other tertiary institutions within the country to improve the extent of generalisations of the present findings. Second, the study limited the students' response to only the career choice factors that were mentioned in the questionnaires distributed. Respondents were not given the opportunity to state any other peculiar factors which they consider influential on their career choices. An important avenue for extension of the current study will therefore be to consider these other factors by means of a qualitative design.

Despite these limitations, this study provides some evidence that career decisions of university students are not made in a vacuum, but certain underlining factors significantly shape students' decision to pursue a particular career.

### Notes

1. Parents from Asian backgrounds are expected to have higher academic standards and higher aspirations for their children's education, compared with Anglo-Celtic Australian parents.
2. In an individualistic culture, people have the tendency to consider only their own interests by viewing themselves as "independent" of social establishments or individuals and placing high value of self-reliance and individual actions. A collectivistic culture, on the other hand, shows an inclination of the people to being part of a larger society, to view themselves as "interdependent" and to protect the interests of group members (Agarwala, 2008).

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**Appendix**

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**Table A1.**  
Loadings for influence  
of referent groups

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Indicators	Loading	Eigenvalue	Percentage of variance explained
Lecturers in the university	0.789	1.940	48.5
Peers (classmates)	0.702		
Parents	0.652		
People working in your field of profession	0.633		

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