



CAREER DECISIONS OF UNIVERSITY STUDENTS

Muhammed Kürşad ÖZLEN¹

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Abstract: *Student career decision-making has attracted research attention in the last two decades especially when it comes to choosing tertiary education. Despite the importance of decision-making skills, there are still limited studies exploring this phenomenon in practice. Therefore, this study aims to explore the potential role of three different platforms including family, learning, and technological environments on the career decisions of university students. A survey about career choices was designed in order to identify the agreement levels of university students in Bosnian higher institutions. The study findings for students' career choices indicate a positive overall picture. Both family and technological environments were found to be influential on students' career choices. However, no impact from learning environment was identified. In order to generalize the findings, further research is required involving other contexts and subject groups. Only by systematically investigating fundamental aspects of students' career choices and by critically examining alternative theoretical decision-making models can further studies continue to progress on this subject matter.*

Keywords: *Student Career Choice, Survey, Technology, Teaching Methods, University Students*

1. Introduction

The human being, through his life, is continuously involved in decision-making or a selection process from available/created options. Decision-making is making a kind of trade-off, because a most suitable option of an alternative that perfectly satisfies all the appropriate criteria is rarely given.

Student decision-making has attracted the attention of research in the last two decades, particularly concerning education/career choices. As a result of economic rationalism, students have become *autonomous choosers* (Peters & Marshall, 1996) who make decisions about whether to enroll in tertiary studies, which course to enroll in, and which institution to attend. James (1999) identifies that the ideology of student choice does not enable non-traditional students to capture the necessary information needed to make qualified decisions. These studies have shown that decision-making is not well

¹ Ishik University, Business and Management Department, Erbil, Iraq, Tel: +964662529841, E-mail: kursadozlen@yahoo.com

² International Burch University, Sarajevo, Bosnia-Herzegovina, E-mail: arnaut.dino@gmail.com

described by econometrics models (Perna, 2000) and is not a rational, linear process as it is proclaimed to be (Tyler, 1998). Social and cultural capital need to be incorporated in econometrics models in order to increase their explanation of students' decisions (Perna, 2000) since decision making is *a complex nexus in which habitus, personal identity, life history, social and cultural contexts, action and learning are inter-related* (Bloomer & Hodkinson, 1997: 46). Therefore, this work aims to explore the degree of importance of each dimension of the proposed model on the career choices of university students.

In relevant research, the focus is on important theoretical and empirical contributions related to students' career choices. Therefore, in this study, students' decision-making on careers is addressed by introducing and applying a modified model of student career choice.

The study prefers survey as the data collection method. The survey is based on questions regarding the improvement of students' decision-making skills and highlights improving career decision-making through the help of adequate teaching methods and technology.

The paper is structured as follows. First, it starts with this introductory section. In the following section, the relevant literature about students and their career choices is reviewed. Afterwards, the general data characteristics are presented. Then, the employed research methodology is described. This is followed by a presentation of results of descriptive analyses, followed by the discussion of the findings with the literature. Finally, the paper is concluded with the contributions/limitations of the study and future implications for research and practice in the last section.

2. Literature Review

This section is drawn from past research, practice and studies in order to develop a more comprehensive understanding of students' decision-making as a ground for developing and improving career choices as well as students' decision-making. Firstly, the section provides the literature concerning the proposed decision-making model components, which are also used to develop the survey questionnaire.

2.1. Family Environment

Socio-economic status is reported to be one of the strongest predictors in student decision-making, especially regarding the choice of tertiary study (Stage & Hossler, 1989; Chalmers, 2001; Looker & Lowe, 2001). Wagenaar (1987) identifies a causal relationship between socio-economic status and post-school choices. It is also reported that the effects of socio-economic status are important at all stages of the decision-making process (Cabrera & La Nasa, 2000). Family size and family composition may also be considered related to socio-economic status (Lillard & Gerner, 1999; Nguyen & Taylor, 2003). Looker & Lowe (2001) identify three characteristics of socio-economic status including parents' education, parents' occupation, and parents' income. These produce social capital (the available resources that enhance the connections with the environment) as well as cultural capital (non-economic assets produced by high levels of education and the experience of middle and upper class values and attitudes.) Reay et

al. (2001) use the idea of habitus in order to explore whether family and institutions have impact on students' choices in their continuing education.

2.2. Learning Environment

Even though the literature suggests mixed results as to the influence of school environment on decisions, it has still been suspected that the school environment can affect decisions, and so it could be considered as an influencing factor in decision-making. The two key factors within schools are reported to be teachers, particularly subject teachers, and career guidance staff. Subject teachers can be very influential (Reay et al., 2001) and can act as *positive influencers* for students of low socio-economic status, providing information and advice to make a difference for them (Connor & Dewson, 2001). Bland (2002: 6) noted that *over 50% of students praised particular teachers for their role in directly motivating them and providing a high degree of care*. According to another study, 73% of students said that course teachers are an important source of support in their decisions (Boyd & McDowall, 2003). Teachers are reported to have moderate influence as advisors in Lilly et al.'s study (2000). However, they are also rated as having low impact by Keller & McKeown (1984). In contrast, the studies of James (2000) and Wagenaar (1987) do not suggest them as a factor.

Career guidance, on the other hand, is highly suggested in some studies as a support for people and advisors (Chalmers, 2001; Boyd & MacDowall, 2003). However, Keller & McKeown (1984) reported career guidance as a poor construct, like teachers. Schools, teachers and career guidance staff can have significant influence as Boyd & Chalmers (2001) identified for students from lower socio-economic groups in their decision-making process. Moreover, Connell (2004: 238) suggests that lower class families *are more heavily dependent on the school and teachers to guide, advise, support, encourage and provide information to their children*. St. John (1991) suggests that schools provide special programs to improve academic achievement and to enable students to systematically plan their college degrees. Boyd et al. (2001) stressed the importance of personal attention through career interviews and the development of career plans, as well as increased parental involvement (Perna, 2000). Looker & Lowe (2001) emphasize the importance of teacher-student interaction in students' post-school plans. Moreover, Connor and Dewson (2001) accept teachers and career staff as potential mentors or *Higher Education champions*. Therefore, it can be concluded that schools have the potential to positively influence students' decision-making processes.

Material is delivered to students in a lecture-based format according to the traditional passive view of learning. However, in the modern, constructivist view of learning, students are expected to be active in the learning process by participating in discussion and/or collaborative activities (Fosnot, 1989). Overall, the research generally focuses on the effectiveness of teaching methods and active learning methods. The findings of de Caprañis, Barman and Magee (2001) suggest that lecturing influences the ability to recall facts, but discussion increases the level of comprehension. Further, the research on group-oriented discussion identifies that both team learning and student-led discussions enhance favorable student performance and encourage greater participation, self-confidence and leadership ability (Perkins & Saris, 2001; Yoder & Hochevar, 2005).

Morgan, Whorton and Gunsalus (2000) compare lecturing combined with discussion to active, cooperative learning methods and identify that the use of lectures combined with discussion resulted in superior retention of material among students. However, when the students' preferences for teaching methods are considered, Qualters (2001) suggested that students do not favor active learning methods because of (1) in-class time taken by the activities, (2) fear of not covering all of the material in the course, and (3) anxiety about changing from traditional classroom expectations to the active structure. In contrast, Casado (2000) examined the perceptions of six teaching methods: lecture/discussion, lab work, in-class exercises, guest speakers, applied projects, and oral presentations, and found that students prefer the lecture/discussion method. Lab work, oral presentation, and applied projects are also found to be favorable. Hunt et al (2003) also studied favorable student attitudes towards active learning methods.

2.3. Information Collection

Christie et al. (2004), by using the critiques of Martinez and Munday (1998), recognize that decisions are made in complex social networks through interpersonal communication. In their studies, they found that young people, who do not have access to such information networks, may be eliminated because they have difficulty in accessing important information. Brennan (2001) also argues that the most important sources of information are interpersonal channels. Boyd and MacDowall (2003) identify that all members of interpersonal information networks have significant influences on decisions. Watts and Sultana (2003), in their synthesis of three major studies on career guidance, observe that many of the evaluated 36 countries attempt to provide lifelong career guidance using a variety of information networks. This synthesis suggests that institutions that engage with interpersonal information networks are more successful. Whitley and Neil (1998) distinguish *in-school* and *out of school* information flows and suggest that in-school information provided by teachers and career guidance people is more important, but that peers play a significant role in providing out-of-school information, especially among students of low socio-economic status.

2.4. Technological Environment

Technology, as a tool in education, provides opportunities for students and increases both their awareness and understanding of the importance of making informed choices. Such awareness enhances students' thinking and encourages informed decisions (Patronis et al., 1999; Kennett & Stedwill, 1996). In a Digital Leadership Divide (2004) survey, school leaders reported that they accept technology as a tool to improve productivity and efficiency. 74% of them confirmed that technology provides timely data for decision-making, 71% agreed that it improves staff efficiency, 71% agreed that it increases administrators' productivity, 70% reported that it improves communications among parents, teachers and the community, and 61% said that it increases teacher productivity.

2.5. Career Choice

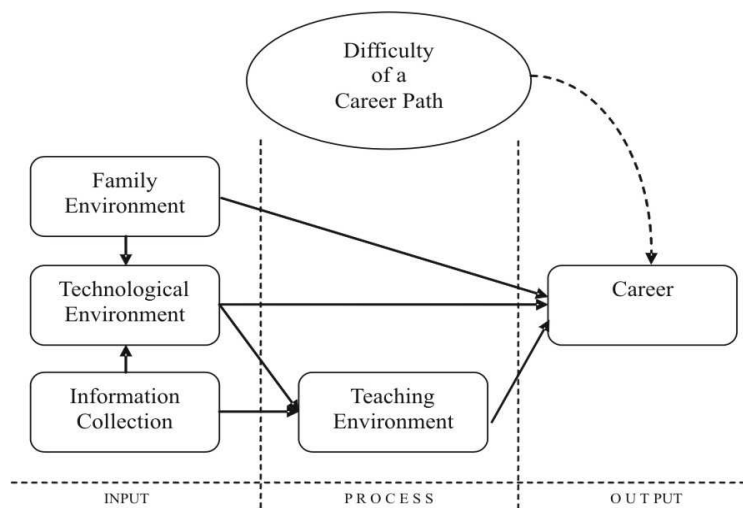
There are many critical factors influencing career decisions. One recurring factor is academic aptitude and achievement. Stage & Hossler (1989) suggest that student school

success is positively associated with planning for university study. When secondary school options are considered (actually choosing a post-school career), academic aptitude appears to be a critical factor. Wagenaar's (1987) findings showed that educational attainment in secondary school, when combined with social class background, influences tertiary study choices. Within the career development literature, the student career decision-making process has received a lot of theoretical and empirical attention. Almost all models propose that the career decision-making process occurs in a series of predefined phases (Gati, Shenhav & Givon, 1993; Peterson, Sampson, & Reardon, 1991). A more recent model of career decision-making by Germeijs and Verschueren (2006) distinguishes six basic tasks in the process: (1) orientation to choice, (2) self-exploration, (3) broadly exploring the environment, (4) in-depth exploration of the environment, (5) choosing an alternative, and (6) committing to a particular career alternative. Another model by Van Esbroeck, Tibos and Zaman (2005) includes six career choice development activities: (1) sensitization (becoming aware of required career choice activities), (2) self-exploration, (3) environmental exploration, (4) combining (2) & (3), (5) specification (deepening knowledge of career options and specifying choices), and (6) choosing one alternative. Empirical research with these models confirms their validity and utility for career development (Gati & Asher, 2001; Germeijs & Verschueren, 2006; Tibos & van Esbroeck, 2003).

2.6. Research Model

Regarding the literature review, this study proposes a research model including seven variables with its sub-items (see Table 1). The model represents a basis for constructing the survey (Figure 1).

Figure 1. Research model



3. Data and Methodology

3.1. The Survey Questionnaire

The survey was designed in order to examine the agreement levels of the respondents on the influencing factors on students' career choices. The survey included questions regarding the improvement of students' decision-making skills by highlighting improved career decision-making as a result of using adequate teaching methods and technology. The questions were designed in accordance with the proposed research model including seven major factors (variables), with subsequent sub-items. The survey employed a 5-point Likert scale where 1 is used for the negative end point and 5 is used for the positive end point. In total, excluding the demographic section, the survey covered 29 questions (see Appendix).

Table 1. Variables and Sub-items

Family Environment	Post-school choices
	Family size and composition
	Parental education and occupation
	Parental income
Learning Environment	Habitus
	Teacher
	Career staff
	Special programs
	Career plans
	Career interviews
Information Collection	Parents
	Peers
	Interpersonal communication
Technological Environment	Information networks
	Staff efficiency
	Teacher productivity
	Communication
Teaching Environment	Administrators' productivity
	Discussions
	Self confidence
	Cooperative learning
Career Choice	Active learning
	Sensation
	Self-exploration
	Environmental exploration
	Relationship self/environment
	Specification
	Decision for an alternative

3.2. Data

Undergraduate students in Bosnia and Herzegovina were targeted while conducting the survey. The reason for selecting this particular group was the need to obtain a realistic view on the perception of career and influential factors of students' career decision-making. 273 surveys out of 350 distributed surveys, through Google docs and by hand, were filled out completely and accurately according to the survey guidelines that were specified on the survey sheet and Google docs online form. The response rate (78%) and number were found to be quite enough in order to run analyses. After conducting the survey, the data was entered into an excel spreadsheet and analyzed descriptively.

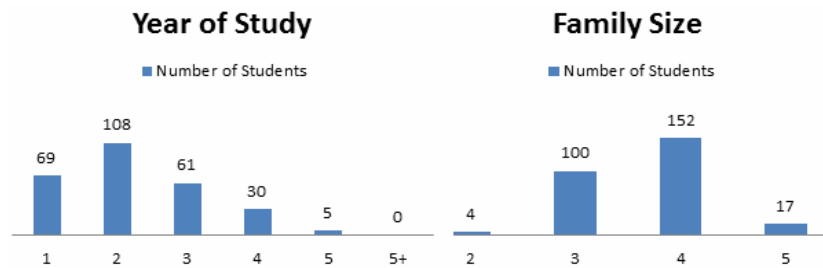
4. Results

This part presents the results of the analysis of the collected survey data. The first section examines respondents' demographic information, and the next sections present respondents' views about the Family Environment, Learning Environment, Information Collection, Technological Environment, Teaching Environment, Career Choice and other Influencing factors on career choice. The final section presents the most notable comments on all mentioned dimensions.

4.1. Respondent demographics

In the demographics section of the survey, parents' education level and employment status as well as overall family size, in addition to their year of study and gender are provided.

Figure 2. Year of Study and Family Size



119 males and 154 females contributed to the study. The data regarding the year of study and the data about family size can be seen on the chart (Figure 2). The respondents are mainly from first, second and third grades. Very few students about to graduate were involved in the study. It can be seen that the family size is changing between 3 and 4 members.

Table 2. Parents Information

Parents Education Level and Employment Status					
Education Level	Primary	Secondary	Bachelor	Master	Doctoral
Father	0	114	138	16	5
Mother	12	141	115	5	0
Total	12	255	253	21	5
Employment Status	Employed	Employer	Self-employed	Unemployed	Retired
Father	184	6	44	22	17
Mother	129	0	25	97	22
Total	313	6	69	119	39

Parents' education levels are found to be not high, and they are generally employed. A high percentage of unemployed parents may have a negative influence on the students' career choices. Therefore, the sample seems to represent children of small and employed families.

5.2. Family Environment

The respondents strongly feel the involvement and influence of their parents in their education and career choices. It is identified that the home environment is supportive for learning. Furthermore, they are comfortable with the income level of their parents in supporting their career development (Table 3).

Table 3. Descriptive Results for Family Environment

Items	Mean	Std. Deviation
There is a supportive learning environment at home.	4.47	.536
My parents are involved in my education and career.	4.16	.595
My parents' had a lot of influence on my education and career choices.	4.59	.492
My parents' income is good enough to support my career development.	3.83	.819

5.3. Learning Environment

According to the results, it is observed that schools provide no career advisors, plans or programs for the career development of students. However, they seem to be almost neutral about the interests of their teachers on their careers (Table 4).

Table 4. Descriptive Results
for Learning Environment

Items	Mean	Std. Deviation
Most of my teachers are/are interested in my education development.	2.67	1.388
My school organized career interviews that helped with my career choice.	1.97	1.043
I had a career advisor who helped me with my career and education choices.	1.92	1.133
My school developed career plans for students.	1.73	1.124
There are/are special programs for career development at my school.	1.33	.670

5.4. Information Collection

There is a strong influence from peers and friends on the respondents' career choices, but respondents don't gladly accept constructive criticism from other people. The majority of the respondents seem to have a resistance to incorporating information from others into their decision-making. Finally, they did not use the internet to make their university choices (Table 5).

Table 5. Descriptive Results
for Information Collection

Items	Mean	Std. Deviation
My friends influenced my school choice.	3.77	.570
I visited many sites (blogs, forums, etc.) before choosing my university.	1.97	.757
I talk to others to obtain information for easier decision-making.	2.52	1.198
I consider other people's opinions and constructive criticism.	2.88	1.000

5.5. Technological Environment

The students strongly believe that they can get a benefit from technology to increase their career development opportunities. They use technology to a high degree in order to communicate with their teachers and peers. However, they don't feel that technology is used by the instructors to improve their understanding or career development (Table 6).

Table 6. Descriptive Results for Technological Environment

Items	Mean	Std. Deviation
I regularly use technology to communicate with my teachers and peers.	4.67	.472
My instructors use technology to enhance our understanding.	2.60	1.137
University staff provide important career and education information for us through the university network.	2.54	.817
I believe that technology provides crucial career development opportunities.	4.84	.365

5.6. Career Choice

The respondents are observed to be strongly confident in their career related considerations, always having known what they were capable of doing, now and in the future. They feel that they can assess career alternatives and compare them to their abilities and possibilities. Furthermore, it is observed that they found out all their career alternatives and made their career decisions accordingly (Table 7).

Table 7. Descriptive Results for Career Choice

Items	Mean	Std. Deviation
I always knew what I wanted to do in the future.	4.07	.552
I am aware of my abilities and possibilities.	4.42	.495
I can assess my career alternatives.	4.14	.663
I can compare my abilities and possibilities with my career alternatives.	4.24	.520
I explored all my career alternatives in detail.	3.71	.677
I chose my career path after I analyzed all possibilities.	3.75	.632

5.7. Influencing Factors on Career Choice

The respondents answered this group of questions positively, except concerning the opportunity to work abroad. They are influenced positively by easy to do jobs, their friends and family members, available scholarships, and job opportunities. Furthermore, low necessary experience level for a job is also influential on their career choices (Table 8).

Table 8. Descriptive Results for influencing Factors on Career Choice

Items	Mean	Std. Deviation
Friend or family member working in a similar career	4.14	.529
Ease of subject matter - easy for me influence my career choice	4.32	.467
Job opportunities affect my career choice	3.98	.612
Availability of scholarships affect my career choice	4.13	.782
Opportunities to work abroad affect my career choice	2.75	.792
Good prospects in obtaining a first job without any prior experience affect my career choice	3.66	.742

6. Conclusion

The purpose of this study is to identify the potential role of three different platforms including family, learning and technological environments on the career decisions of university students. Student career decision-making attracted the attention of research in the last two decades, especially for choosing tertiary education. A literature review suggests that the development and improvement of students' decision-making skills should be an important part of general education. Technology and teaching methods are influential on students' career choices.

Despite the importance of decision-making skills, there are still limited studies about this issue in practice. Research studies generally consider optimization techniques during decision-making processes. However, other methodologies such as survey and interview studies can be employed in order to collect and analyze data.

The study findings on students' career choices indicate a positive overall picture. The results concerning the influences of three different environments including family, learning and technological environments provide mixed results. The respondents seem to be mainly influenced from the family and technological environments but not from the learning environment. The findings are in accordance with literature that suggests that students' families have a high influence on their career and school choices. Contrarily to the literature, the respondents slightly agree that their teachers are interested in their education development and career choices. However, support from career advisors is not identified. This result is not surprising, since most educational institutions in Bosnia and Herzegovina still do not have career advisors or planners.

Technology seems to be considered as a career opportunity, but teachers in Bosnia are still not keen enough on using technology as a tool for knowledge transfer. The respondents are observed to be highly dedicated towards their career choices, being aware of their abilities, possibilities and career alternatives, knowing what they want to do in the future, and exploring all these in order to choose their career path. However, they still prefer easier subject matters for their careers, that is, they tend to follow an easier path to achieve their career goals.

It is obvious that the results of this research are limited to a specific higher education context. Future studies may consider the perceptions of the students in private and public universities. Moreover, alumni can be included in research to state their satisfaction with their career choices.

This research is important in that it is among the few works of its kind done in Bosnian territory. This study can be a guideline for the government and companies, in that they can encourage students by stimulating their career paths for necessary positions in the labor market, and lower the high unemployment rate.

Universities would benefit from this research by creating models for students' career paths, advising them on their careers through their studies, and opening new study areas by considering students' career decisions.

In order to generalize the findings, further research is required which would consider other contexts and subject groups such as parents, members of educational institutions, in order to achieve a clearer picture of students' career choices. Future research is also necessary to study the impact of various tasks, environment and people related to students' careers.

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Appendix**Students' Decision-making Questionnaire**

Please answer all questions.

For each numeric question, circle the number that best reflects your opinion of the factor judged:

1=strongly disagree, 2=disagree, 3=neither, 4=agree, 5=strongly agree

Circle only one number for each scale.

Thank you for doing this survey!

General Demographics											
Gender:		Year of study:					Family size:				
Male Female		1	2	3	4	5	2	3	4	5	5+
Father's					Mother's						
Employment status:		Education level:			Employment status:		Education level:				
Employed Employer Self-employed Unemployed Retired		Primary Secondary Bachelor Master Doctoral			Employed Employer Self-employed Unemployed Retired		Primary Secondary Bachelor Master Doctoral				

**11 question relate to your previous and current education
(primary, secondary and tertiary)**

1.	Family Environment	Disagree				Agree
a.	There is a supportive learning environment at home.	1	2	3	4	5
b.	My parents are involved in my education and career.	1	2	3	4	5
c.	My parents' had a lot of influence on my education and career choices.	1	2	3	4	5
d.	My parents' income is good enough to support my career development.	1	2	3	4	5

2.	Learning Environment	Disagree				Agree
a.	Most of my teachers are/are interested in my education development.	1	2	3	4	5
b.	My school organized career interviews that helped with my career choice.	1	2	3	4	5
c.	I had a career advisor who helped me with my career and education choices.	1	2	3	4	5
d.	My school developed career plans for students.	1	2	3	4	5
e.	There are/are special programs for career development at my school.	1	2	3	4	5

3.	Information Collection	Disagree				Agree
a.	My friends influenced my school choice.	1	2	3	4	5
b.	I visited many sites (blogs, forums, etc.) before choosing my university.	1	2	3	4	5
c.	I talk to others to obtain information for easier decision-making.	1	2	3	4	5
d.	I consider other people's opinions and constructive criticism.	1	2	3	4	5

4.	Technological Environment	Disagree				Agree
a.	I regularly use technology to communication with my teachers and peers.	1	2	3	4	5
b.	My instructors use technology to enhance our understanding.	1	2	3	4	5
c.	University staff provide important career and education information for us through the university network.	1	2	3	4	5
d.	I believe that technology provides crucial career development opportunities.	1	2	3	4	5

5.	Career	Disagree				Agree
a.	I always knew what I wanted to do in the future.	1	2	3	4	5
b.	I am aware of my abilities and possibilities.	1	2	3	4	5
c.	I can assess my career alternatives.	1	2	3	4	5
d.	I can compare my abilities and possibilities with my career alternatives.	1	2	3	4	5
e.	I explored all my career alternatives in detail.	1	2	3	4	5
f.	I chose my career path after I analyzed all possibilities.	1	2	3	4	5

6.	Influencing factors on your career choice?	Disagree Agree				
a.	Friend or family member works in a similar career	1	2	3	4	5
b.	Ease of subject matter- easy for me influence my career choice	1	2	3	4	5
c.	Job opportunities affect my career choice	1	2	3	4	5
d.	Availability of scholarships affect my career choice	1	2	3	4	5
e.	Opportunities to work abroad affect my career choice	1	2	3	4	5
f.	Good prospects in obtaining a first job without any prior experience affect my career choice	1	2	3	4	5