دوافع الطلاب لاختيار تخصصهم

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Students' Motivation for Choosing Their Major

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المستخلص:

تهدف هذه الدراسة إلى تحليل العوامل التي تؤثر على اختيار طلاب جامعة جيهان – أربيل للتخصصات الطبية، مع التركيز على أنواع الدوافع المختلفة وعلاقاتها ببعضها البعض، بالإضافة إلى الفروق بين الجنسين في اختيار التخصصات. تتمثل الأهداف الرئيسية للبحث في تحديد أهم الدوافع المؤثرة، واستكشاف الروابط فيما بينها، وفهم العوامل الشخصية والاجتماعية والمهنية التي تؤثر في قرارات الطلاب. اعتمدت الدراسة على منهج البحث المختلط، حيث تم جمع البيانات من خلال استبيان شمل 241 طالبًا، بالإضافة إلى مقابلات معمقة مع 60 طالبًا. تم استخدام مقياس الدافعية الأكاديمية لتعلم علم الأحياء، الذي طوره أيدين، ييرديلين، يالمانجي، وغوكسو (2014)، لقياس مستويات انعدام الدافعية، والدافعية الخارجية الاجتماعية والمهنية، والدافعية الداخلية. تناولت المقابلات موضوعات متعددة، مثل الاهتمامات الشخصية، وتأثير الأسرة، والطموحات المهنية، والضغوط الثقافية التي تؤثر على اختيار التخصص. تم تحليل البيانات الكمية باستخدام الإحصاءات الوصفية والاستدلالية، في حين خضعت البيانات النوعية

لتحليل الترميز الموضوعي. أظهرت النتائج أن الدافع الخارجي المرتبط بالمهنة يُعَدُّ العامل الأكثر تأثيرًا في اختيار التخصص، يليه الدافع الداخلي بفارق طفيف. في المقابل، كان تأثير انعدام الدافعية والدافع الخارجي الاجتماعي أقل وضوحًا. كما كشفت المقابلات عن دور الشغف الشخصي، وتأثير الأسرة، والأهداف المهنية كعوامل رئيسية مؤثرة في قرارات الطلاب. أظهر تحليل الروابط بين أنواع الدوافع وجود علاقة قوية بين الدافع الخارجي المهني والدافع الخارجي الاجتماعي، في حين ارتبط انعدام الدافعية سلبًا بالدافعية الداخلية. تسلط هذه النتائج الضوء على تعددية العوامل المؤثرة في اختيار التخصص الطبي، مما يوفر رؤى قيمة يمكن أن تسهم في تطوير استراتيجيات جامعية داعمة لمسارات الطلاب الأكاديمية والمهنية.

Abstract:

The purpose of this study is to look at the reasons why students at Cihan University-Erbil choose to study the medical field as a major. The main goals of the research are to determine the most important types of motivation, to investigate the connections between them, and to learn why people of different genders choose different majors. A total of 241 students were surveyed via questionnaires, while 60 students were interviewed as part of the mixed-methods study. Aydin, Yerdelen, Yalmanci, and Göksu's (2014) Academic Motivation Scale for Learning Biology was used in the survey to gauge amotivation, social and professional aspects of extrinsic motivation, and intrinsic motivation. The interviewees' hobbies, family dynamics, professional goals, and cultural pressures were some of the factors explored in depth as they discussed the factors that impacted their major choice. Quantitative data was analyzed using descriptive and inferential statistics, and qualitative data was subjected to thematic coding. While the results show that career-related extrinsic motivation has the biggest impact on major choices, intrinsic motivation comes has been ranked a close second. On the other hand, amotivation and extrinsic-social motivation have had weaker effects. Meanwhile, personal passion, familial influences, and career objectives were among the many aspects that were shown to have a role in major selection throughout the interviews. An examination of the correlations between the two kinds of extrinsic motivation revealed strong links between the two, with amotivation having a negative association with intrinsic motivation. These results help universities assist students better in their academic and professional endeavors by shedding light on the multifaceted factors that influence medical school major decision.

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Introduction:

Motivation is an essential psychological element that impacts an individual's level of exertion and the caliber of their conduct in different tasks (Watters and Ginns, 2000). As per Badubi's (2017) definition, motivation is the act of stimulating someone to engage in a specific action or achieve a desired outcome by offering suitable rewards. Essentially, it entails motivating and inspiring individuals to work with excitement, initiative, confidence, and satisfaction while keeping a synchronized approach toward attaining targeted goals, as stated by Steinmayr, Weidinger, Schwinger, and Spinath (2019). Motivation can be categorized into two main forms - intrinsic and extrinsic. Intrinsic motivation (IM) is the profound sense of satisfaction and pleasure that arises from engaging in an activity for a specific reason, such as the intellectual stimulation of medical knowledge or the strong desire to pursue a career as a doctor. In contrast, extrinsic motivation (EM) is motivated by achieving a result distinct from the action in question, such as the aspiration to receive generous pay as a medical practitioner. (Linnenbrink and Pintrich, 2001; Lisa, 2016).

Enrolling in college has been the customary practice for high school graduates, a longstanding tradition that continues throughout generations (Egan, Stozenberg, Zimmerman, Aragon, Sayson, & Rios-Aguilar, 2016). Deciding on an undergraduate degree is a crucial and impactful choice that young individuals make (Skatova and Ferguson, 2014). Decision-making to pursue higher education and choosing a field of study are essential. The choice of major has a direct impact on the academic environment, including interactions with instructors and peers. It also affects students' behavior in terms of happiness and persistence, and ultimately affects their future employment prospects and rewards (Porter & Umbach, 2006).

Students' motivation might be intrinsic or extrinsic when choosing academic majors. Intrinsic motivation refers to choosing a major based on a sincere interest in the subject, finding pleasure in the associated academic activities, or having the desire to fulfil intellectual curiosity. It is important to consider that a student's confidence and willingness to take chances while choosing a major are influenced by characteristics such as personality, intrinsic talent, personal preference, and academic preparation levels (Porter S R, Umbach, 2006); (Liu, 2012). On the other hand, external reasons for selecting an academic field of study may involve satisfying family expectations or seeking possible employment prospects. The latter offers a sort of motivation that is more internal and extrinsic compared to the former. The references cited are as follows:

Cebula and Lopes (1982), Koch (1972), Soria, & Stebleton (2013), and Moakler and Kim (2014). For instance, individuals who prioritize their profession are more inclined to select a degree that offers definite job opportunities. In contrast, others may be solely motivated by their interest in a subject, regardless of its potential for career advancement or financial gain. Prior research on motivation concerning professional choice has primarily concentrated on factors such as indecisiveness (Guay, Mageau, and Vallerand, 2003) and achievement motivation (Collins, Hanges, and Locke, 2004; Watt & Richardson, 2007).

Undoubtedly, the examination of students' diverse motivations for choosing their majors underscores a number of urgent matters that require additional research. First and foremost, the high occurrence of external incentives, such as the desire for future employment opportunities, presents a difficulty for educators in fostering an authentic enthusiasm for studying among students. When students prioritize future jobs over true interest in the subject matter, their level of engagement with their studies may decrease, resulting in superficial learning and reduced academic performance. Furthermore, the impact of external variables, such as parental aspirations and social influence, might lead students to feel compelled to choose academic disciplines that may not correspond with their genuine passions or aptitudes. The discrepancy between students' inherent drives and their selected majors can lead to disengagement, lack of satisfaction, and poor academic achievement. Moreover, the frequency of students choosing majors only to obtain a certificate highlights larger problems within higher education, such as worries about the utilitarian approach to learning and the diminishing value of information for its intrinsic worth. To tackle these difficulties, it is crucial to have a more profound comprehension of the fundamental motives that influence students' choice of majors and how these motivations impact their level of involvement, academic achievements, and overall well-being. Hence, it is essential to research the factors that drive students to select their degrees. This research will provide valuable insights for developing evidence-based methods and interventions to enhance students' learning experiences, stimulate their intrinsic motivation, and contribute to their fulfilment in their academic endeavours. A search was conducted to analyze the reasoning and importance of students selecting their academic field. The study seeks to address the following questions to enhance comprehension of the decision-making process:

-Which type of motivation is the dominant type regarding the selection of medical departments?

-Is there any correlation among the different types of motivation in medical departments?
-What were the reasons behind the selection of medical departments by male students?
-What were the reasons behind the selection of medical departments by female students?

2. Literature Review:

A study was conducted by Burlage in 1963 involving 385 first-year students who were enrolled in a five-year pharmacy program. The research findings indicated that the principal determinants influencing the selection of pharmacy as a major were aspirations for a substantial salary, fascination with chemistry, and a commitment to aiding others. Following this, Pratt (1965) surveyed 1,569 students pursuing health science degrees (e.g., public health, dentistry, medicine, nursing, and dental hygiene). Among these, 422 were pharmacy students in their first and final years of study. The research revealed that pharmacy students exhibited a greater propensity to select the major for pragmatic motives, including the assurance of financial stability, the potential for career and social standing progression, and the ability to promptly meet their financial obligations. These results underline the significance of economic considerations in the process of major selection for students. Acknowledging and comprehending the impact that practical factors, including financial stability and security, have on students' decision-making processes regarding their future careers is crucial. By recognizing these factors, academic establishments can enhance their ability to assist students and furnish them with opportunities to accomplish their objectives. Furthermore, scholarly investigations have examined the impact of gender on students' choice of disciplines.

Dawson-Threat and Huba (1996) discovered a greater propensity among men to select majors that were men-dominated, whereas women tended to prefer majors that women-dominated. Additional studies have corroborated this gender discrepancy in major selection (Jacobs, 1986; Solnick, 1995), indicating that women's discipline selection is frequently impacted by gender role orientation (Lackland, 2001). Furthermore, research has indicated that the selection of a major can be substantially influenced by the socioeconomic status and educational and professional history of family members (Leppel, Williams, & Waldauer, 2001). According to Pervin (2001), each decision is the consequence of a confluence of various motivations. Hence, it is imperative to distinguish variations in motivation and forecast the consequences that result from such variations. A study was undertaken in 2013 by Krista and Michael to

examine the correlation between students' academic major selection motivations and their level of campus satisfaction and sense of belonging. A multi-institutional survey of students enrolled in prestigious public research universities in 2009 was utilized to conduct the research. The findings indicated that students whose major selection was influenced by external extrinsic factors experienced diminished levels of satisfaction and a diminished sense of belonging. On the contrary, self-satisfaction and a sense of belonging were positively correlated with the major choices of students who were driven by intrinsic and internal extrinsic motivations.

The Concept of Motivation:

The term "motivation" originates from the Latin word "Move," which translates to "to move" and was subsequently incorporated into the English language. Primarily, motivation serves as the fundamental drive for human actions. From a business standpoint, motivating individuals entails fostering their desire to behave in a manner that benefits the organization (Legault, 2016). Motivation can be defined as any internal or external factor that stimulates a living organism to do action (Singh, 2016). Motivation is the force that influences, regulates, and maintains human actions, or, in simpler terms, the factor that enhances guides, and preserves them (Gribanova, 2020). Motivation drives individuals' actions and ensures their sustained involvement (Steinmayr, Weidinger, Schwinger, Spinath, 2019)

Self-Determination Theory (SDT)

Self-determination theory divides motivation into intrinsic and extrinsic, according to the underlying reasons or goals that drive behavior (Deci & Ryan, 1985). The theory is divided into five sub-theories, beginning with Cognitive Evaluation Theory (CET), which explains how external outcomes influence internal motivation (Ross, Perkins, & Bodey, 2016). Self-determination theory includes two sub-theories: Organismic Integration Theory (OIT) and Causality Orientation Theory (COT) Gopalan, Abubakar, Zulkifli, Alwi & Che Mat, 2017). OIT categorizes motivational states into three levels, with an emphasis on impersonal or motivational competence. The Basic Psychological wants Theory (BPNT) divides human wants into three categories: autonomy, competence, and relatedness. A study found that contentment is critical to people's advancement and well-being (Ulstad, 2017). Finally, Goal Contents Theory (GCT) distinguishes intrinsic and extrinsic motivation using essential demands for satisfaction and well-being (Coccia, 2019). Intrinsic goals within a social setting are important in the educational environment and can help students achieve greater academic achievement

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(Gopalan, Abubakar, Zulkifli, Alwi & Che Mat, 2017). Figure 1 depicts OIT's motivational taxonomy, sorted from left to right based on the degree to which the drive for one's behaviour stems from oneself.

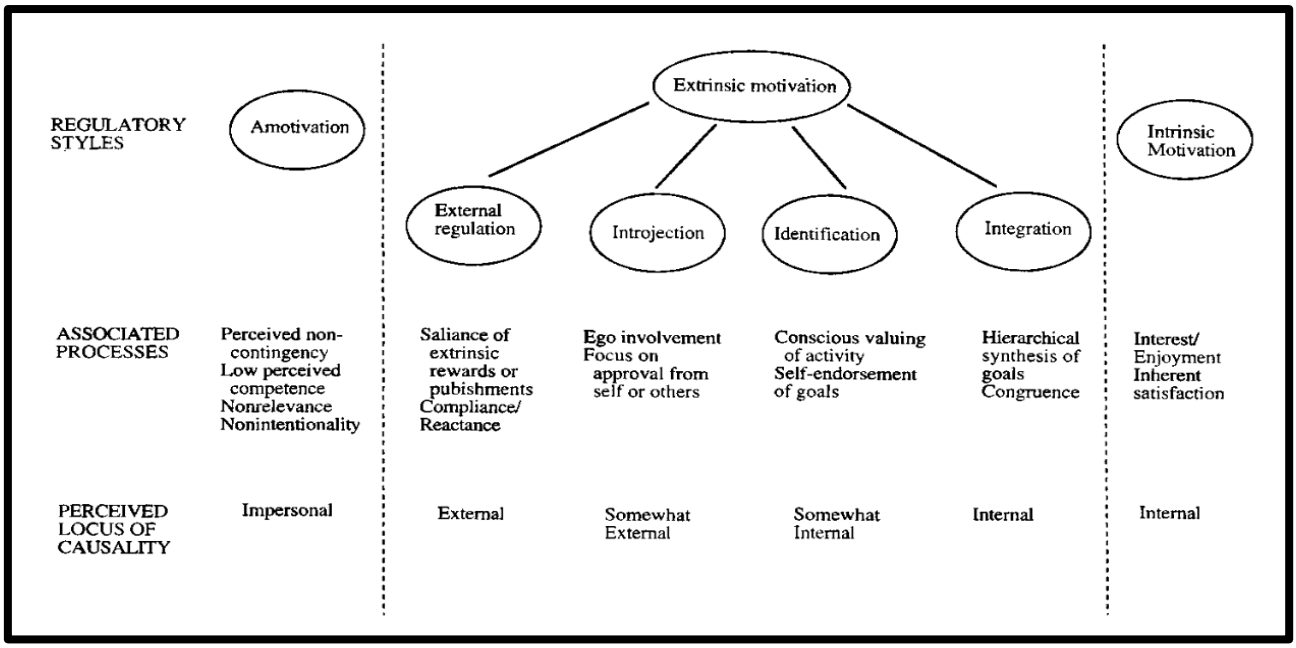

Fig. 1: *Taxonomy of Human Motivation*

Motivation is not one-sided; a comprehensive approach is required to properly comprehend it. According to a well-known theory, motivation has three dimensions: intrinsic, extrinsic, and amotivation.

Intrinsic motivation (IM) is a sort of motivation in which people engage in tasks because they like and feel satisfied doing so. It involves voluntary engagement, free of external or internal constraints and rewards (Deci and Ryan, 1985; Deci, Vallerand, Pelletier, and Ryan, 1991; Vallerand and Bissonnette 1992; Vallerand, Pelletier, Blais, Pelletier, Blais, Briere, Senecal, & Vallieres, 1992; Frederick and Ryan 1995; Deci and Ryan 2008). People with an intrinsic drive for achievement participate in activities to excel, develop something new, or fulfil a new benchmark, focused on the process rather than the outcome. These individuals want to feel competent and creative. Finally, intrinsic motivation to experience stimulation denotes participation in an activity for the purpose of having fun, excitement, and pleasurable sensations (Vallerand et al. 1992).

Extrinsic motivation (EM) refers to when an activity is pursued to acquire benefits. Extrinsic motivation can also manifest as engaging in activities under external or internal demands. In these circumstances, the behavior is largely used to achieve a goal rather than for its own sake. Furthermore, Deci and Ryan (1985) view extrinsic motivation as a multifaceted phenomenon. Self-determination theory defines three types of extrinsic motivation: external regulation, introjection, identification, and integrated regulation (Deci and Ryan, 2000).

The first type is *External regulation, which* refers to a form of extrinsic motivation in which individuals participate in an activity with the goal of obtaining rewards or avoiding punishment. Deci and Ryan (2000) indicate that this behaviour is impacted by both external and internal factors. When individuals participate in behaviour that is regulated by external factors, they often experience a sense of being controlled or disconnected, and believe that the external demand or reward system is the reason behind their behaviours. Essentially, this implies that the drive to engage in the behaviour stems from an external stimulus rather than from one's internal motivation. The reference "EPLOC; deCharms, 1968" is provided. The second type is *introjection*, where individuals experience greater involvement in an activity; however, it is not yet driven by their self-determination (Deci and Ryan, 2000). The motives underlying their behaviours are internalized, yet their behaviour remains highly regulated. These activities are motivated by the desire to avoid shame and worry or achieve ego-enhancements or pride. Ego involvement refers to the process of persons engaging in behaviours with the intention of improving or preserving their self-esteem and self-worth (Nicholls, 1989; Ryan, 1982). The third type is Identification, which is regarded as a form of extrinsic motivation that is more self-directed, where individuals perceive and regard their actions as significant. The engagement is regarded as a voluntary decision made by the individuals involved. (Deci and Ryan, 2000). The last type of extrinsic motivation is *integrated regulation*, which is the highest level of extrinsic motivation driven by one's values and beliefs. At this stage, the behaviour is still motivated by external factors but is regarded as an integral part of one's identity. Goal-directed behaviours are regularly pursued, but the lack of inherent motivations implies the behaviour is not considered entirely autonomous.

Amotivation is one of the three dimensions of motivation that has been established in Self-Determination Theory (SDT). It is regarded as the least autonomous level on the spectrum of motivating styles. *Amotivated* persons exhibit a lack of intention to take action and do not pursue their goals in a systematic manner. This mental state arises from a lack of

appreciation for an activity, a sense of inadequacy in performing it (Ryan, 1995), or a disbelief that it would produce a desired result (Seligman, 1975). *Amotivation* is associated with learned helplessness, in which individuals reduce their effort due to feelings of ineptitude and lack of control. It is crucial to acknowledge that amotivation can result in a deficiency of purpose and guidance in life, which can affect one's mental and emotional well-being. (Deci and Ryan, 1985; Deci, Vallerand, Pelletier, & Ryan, 1991; Vallerand and Bissonnette, 1992; Vallerand et al., 1992; Frederick and Ryan, 1995).

The differences in attitudes and adaptation can be ascribed to the different forms of extrinsic motivation. Research has shown that externally governed students demonstrate lower levels of interest, value, and effort. They are also more likely to attribute unfavourable outcomes to others, such as their professors. However, introjected regulation has been discovered to have a favourable correlation with exerting effort. Nevertheless, it is also linked to elevated levels of worry and less effective coping with failures. Research has found a correlation between identified regulations, increased school satisfaction, and the adoption of healthier coping strategies. Intrinsic motivation is highly beneficial as it is associated with factors such as interest, enjoyment, perceived competence, and good coping. Moreover, numerous studies have expanded upon these discoveries, revealing that a higher level of self-directed external motivation is linked to increased involvement (Connell & Wellborn, 1990), enhanced achievement (Miserandino, 1996), reduced rates of discontinuation (Vallerand & Bissonnette, 1992), superior learning quality (Grolnick & Ryan, 1987), and heightened psychological well-being (Sheldon & Kasser, 1995), among other results.

Methodology

This section outlines the methodology utilized in the investigation. The study employed a mixed-methodologies approach involving quantitative and qualitative methods to investigate student motivation for selecting their major in medical departments.

Research Design

The study utilized a mixed-methods approach to collect thorough insights into the factors that motivate students in their selection of a major. In the quantitative phase, a questionnaire was distributed to a total of 241 university students. In the same vein, a total of 60 students were interviewed in the qualitative phase. 30 female students from the Biomedical Sciences, Nutrition, and Dietetics departments and 30 male students from the Medical Biochemical Analysis and Physiotherapy departments were included in the interview. The purpose of these

interviews were to delve into the detailed viewpoints of the factors influencing students' choice of medical departments, specifically examining gender disparities.

Participants

The study involved 241 students who were currently enrolled in different medical departments at Cihan University-Erbil, including Dentistry, Pharmacy, Biomedical Sciences, Medical Microbiology, Medical Laboratory Science, Medical Biochemical Analysis, Physiotherapy, Nutrition, and Dietetics. A total of 60 students from the Medical Biochemical Analysis, Biomedical Sciences, Nutrition and Dietetics, and Physiotherapy Department at Cihan University-Erbil were chosen for the interview round. The individuals were chosen randomly, and ethical concerns were carefully taken into account throughout the investigation. Prior to gathering data, the researchers acquired informed consent from all participants, highlighting the importance of voluntary involvement, confidentiality, and the ability to withdraw from the study at any point. Furthermore, all gathered data were handled with the utmost security and anonymity, therefore safeguarding the privacy and well-being of the participants.

Instrument

For the purpose of data collection, the researcher of the present study made use of two distinct instruments which have been introduced meticulously in the following.

Questionnaire

The researcher employed the Academic Motivation Scale for Learning Biology (AMSLB), initially created by Aydin, Yerdelen, Yalmanci, and Göksu in 2014. The researcher modified the questions from this scale to align with the specific circumstances of the study. The questionnaire comprised four factors, that is, Intrinsic Motivation, Extrinsic Motivation-Career, Extrinsic Motivation-Social, and Amotivation. The survey consisted of a total of 18 questions, with six items specifically addressing intrinsic motivation, four questions, each focusing on extrinsic motivation related to profession and extrinsic motivation related to social factors, and four questions about amotivation. Students assessed their level of agreement with these assertions using a 5-point Likert scale, where 1 represented "Strongly Disagree" and 5 represented "Strongly Agree."

Interviews

During the interview phase, a total of 60 students were interviewed to obtain a comprehensive understanding of the factors influencing their choice of medical departments. The sample consisted of 30 female students and 30 female students. The female ones were selected from the

biomedical sciences, nutrition, and dietetics departments, in which the number of female students was more than the male students. On the other hand, the male students were selected from the Medical Biochemical Analysis and Physiotherapy department, in which, the male students outnumbered the females. The researcher formulated a series of six inquiries for the interviewees. Prior to distributing the surveys, the researcher obtained approval from the department heads and faculty members affiliated with the medical departments. They elucidated the research and ensured that all individuals were informed of the ethical guidelines. Additionally, prior to the students completing the surveys, the researcher engaged in discussions with the instructors. The researcher subsequently distributed the questionnaire to students via Google Forms. The students required approximately one week to complete the questionnaire. Regarding the interviews, they were required approximately two weeks to send back the results. The investigator adhered to a predetermined timetable and conducted student interviews under the guidance of the medical department heads. The purpose of these questions was to investigate different facets of students' motives and decision-making processes when choosing their majors. The initial question sought to reveal the factors that influence students' choices of their department, followed by inquiries regarding the extent of autonomy in decision-making and potential influences from peers or family members. Further inquiries aimed to ascertain the particular courses, assignments, or encounters that inspired students to choose their degrees, as well as the competencies or talents that ignited their curiosity. Furthermore, students were inquired about their deliberation on future career possibilities and work opportunities prior to selecting their department. The interviews yielded valuable qualitative data that supplemented the quantitative results and provided a full insight into the factors influencing students' choice of major.

Data Analysis

During the quantitative phase, the data collected from the questionnaire was analyzed to generate descriptive statistics for four specific categories of motivation scores: Intrinsic Motivation (IM), Extrinsic Motivation - Career (EMC), Extrinsic Motivation - Social (EMS), and Amotivation (AM). The assessment of each form of motivation included calculating its mean score, standard deviation, minimum score, and maximum score. At first, the researcher tried to evaluate the relationship between various forms of motivation using the One-Sample Kolmogorov-Smirnov test. Nevertheless, the obtained significance values were below 0.05, suggesting that the data did not conform to a normal distribution.

Therefore, non-parametric data analysis approaches were used. The researcher employed the Spearman rank correlation coefficient (Spearman Rho) to precisely ascertain the association between various forms of motivation in medical departments.

The qualitative phase consisted of conducting interviews with students, which were subsequently transcribed and analyzed using theme coding. This technique involved discerning recurring themes, patterns, and categories in students' responses. The researcher conducted a qualitative analysis to obtain a more profound comprehension of the aspects and rationales influencing students' selection of their academic field. This study aimed to gain a thorough understanding of the topic by using a combination of different research approaches. By using both quantitative and qualitative data gathering and analysis methodologies, a comprehensive investigation was conducted, capturing both numerical patterns and detailed qualitative observations.

Results

In this section, the researcher conducts a thorough analysis of the data gathered in the survey. The study intends to examine the relationships and primary factors that influence participants' choice of medical departments. The goal was to use a thorough analytical method to explore the descriptive statistics and correlation analyses to reveal patterns, correlations, and trends present in the dataset.

This section is organized to thoroughly analyze the main factors being studied, which are the different types of motivation: Intrinsic Motivation (IM), Extrinsic Motivation - Career (EMC), Extrinsic Motivation - Social (EMS), and Amotivation (AM). It will explore how these different types of motivation influence individuals' choices when it comes to selecting medical departments.

Table 4.1. *Descriptive Statistics*

	Types of Motivation		Statistic	Std. Error
Average Scores	IM	Mean	3.9910	.04219
		Std. Deviation	.65496	
		Minimum	1.00	
		Maximum	5.00	
	EMC	Mean	4.0197	.04538
		Std. Deviation	.70443	
		Minimum	1.00	

	Maximum	5.00	
EMS	Mean	3.6784	.04908
	Std. Deviation	.76193	
	Minimum	1.00	
	Maximum	5.00	
AM	Mean	2.4367	.06125
	Std. Deviation	.95082	
	Minimum	1.00	
	Maximum	5.00	

The table displays descriptive statistics for four unique categories of motivation scores: Intrinsic Motivation (IM), Extrinsic Motivation - Career (EMC), Extrinsic Motivation - Social (EMS), and Amotivation (AM). Every form of motivation is evaluated according to its average score, standard deviation, lowest score, and highest score.

In terms of mean scores, Extrinsic Motivation - Career (EMC) emerges as the highest among the types examined, with an average score of 4.01. Following closely behind is Intrinsic Motivation (IM), with a mean score of 3.99, indicating a slightly higher average level of motivation compared to IM. Extrinsic Motivation-Social (EMS) exhibits a somewhat lower mean score of 3.67, suggesting a slightly lesser degree of motivation compared to the other two types. Finally, Amotivation (AM) records the lowest mean score among the types analyzed, with an average of 2.43, indicating a generally low level of motivation within this category.

Regarding variability, the standard deviation offers insights into the spread of scores around the mean. Intrinsic Motivation (IM) displays the lowest variability, with a standard deviation of 0.65, indicating that scores are relatively close to the mean. Extrinsic Motivation - Career (EMC) and Extrinsic Motivation - Social (EMS) show slightly higher variability with standard deviations of 0.70 and 0.76, respectively. Amotivation (AM) demonstrates the highest variability among the types examined, with a standard deviation of 0.95, suggesting a wider dispersion of scores around the mean.

Furthermore, the minimum and maximum scores provide information about the range of scores observed for each type of motivation. Across all types, the minimum score is 1.00, indicating the lowest level of motivation possible, while the maximum score is 5.00, representing the highest level of motivation. This indicates that participants in the study

exhibited a broad range of motivation levels across all types assessed, as illustrated in the following figure.

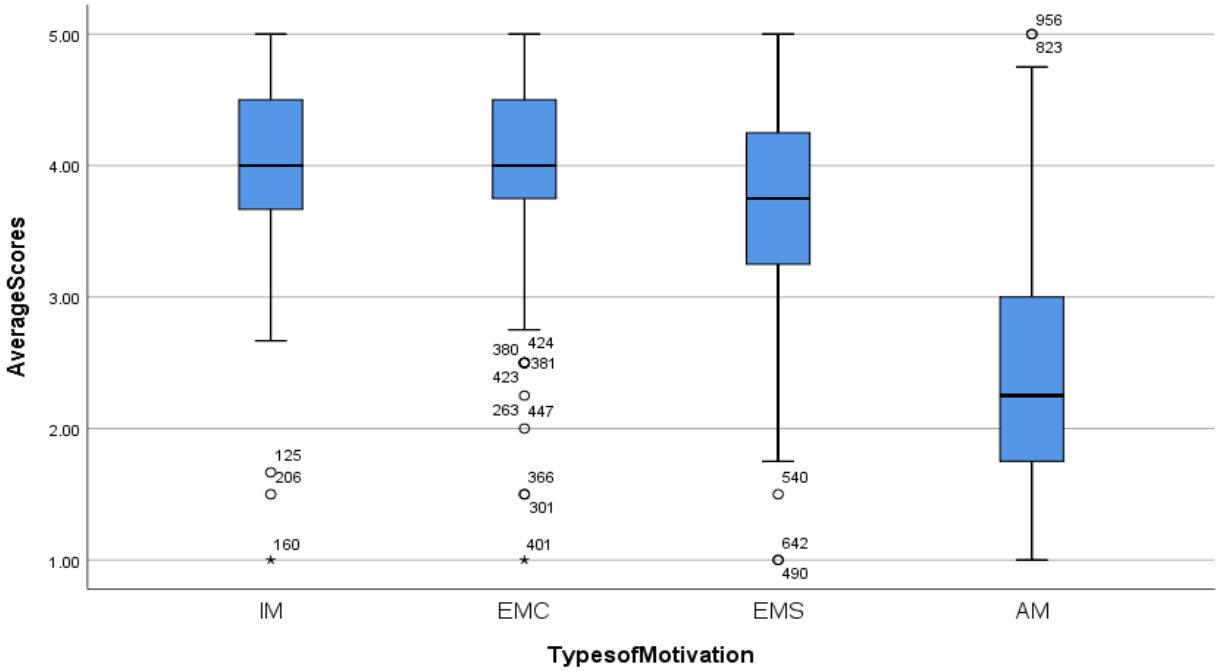

Figure 4.1. Illustration of Average Scores of Different Types of Motivation

Regarding the first research question, to identify the dominant type of motivation influencing the selection of medical departments, the descriptive statistics table and the figure offer insights into the mean scores for each motivational category. Among the types assessed, Intrinsic Motivation (IM) emerges with a mean score of 3.9910, while Extrinsic Motivation - Career (EMC) surpasses this with a mean score of 4.0197. Meanwhile, Extrinsic Motivation-Social (EMS) registers a slightly lower mean score of 3.6784, and Amotivation (AM) exhibits the lowest mean score at 2.4367.

In light of these findings, Extrinsic Motivation - Career (EMC) emerges as the dominant type of motivation regarding the selection of medical departments. Its notably higher mean score suggests that individuals pursuing medical fields are primarily motivated by career-related factors over intrinsic motivations, social incentives, or amotivation. This implies that career prospects, professional advancement, and related external rewards play a significant role in guiding individuals towards choosing medical career paths. Thus, understanding and catering to these career-

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oriented motivations could be pivotal in recruitment and retention strategies within medical education and practice.

For the second research question, the researchers of the present study tried to find out the correlation among different types of motivation. To this end, the One-Sample Kolmogorov-Smirnov Test was run to assess the normality of data distribution for all the types of motivation under investigation.

Table 4.2. *One-Sample Kolmogorov-Smirnov Test*

		IM	EMC	EMS	AM
N		241	241	241	241
Normal Parameters	Mean	3.9910	4.0197	3.6784	2.4367
	Std. Deviation	.65496	.70443	.76193	.95082
Most Extreme Differences	Absolute	.115	.194	.124	.096
	Positive	.062	.082	.061	.096
	Negative	-.115	-.194	-.124	-.065
Test Statistic		.115	.194	.124	.096
Asymp. Sig. (2-tailed)		.000	.000	.000	.000

The significance level (sig level) in the table indicates the results of a normality test for the distribution of the data. A significance level of less than 0.05 suggests that the data may not be normally distributed. In this case, since the significance levels are less than 0.05, it implies that the data does not follow a normal distribution.

Consequently, when analyzing the data, the researcher should use non-parametric data analysis instruments instead of parametric ones. Non-parametric tests do not rely on assumptions about the distribution of the data and are, therefore, more appropriate when dealing with non-normally distributed data. By acknowledging the non-normality of the data and utilizing appropriate non-parametric tests (here, Spearman rho), the researcher can ensure the validity and reliability of their analysis results.

Table 4.3. *Spearman's rho Correlation Coefficient*

			IM	EMC	EMS	AM
Spearman's rho	IM	Correlation Coefficient	1.000	.548**	.457**	-.414**
		Sig. (2-tailed)	.	.000	.000	.000
		N	241	241	241	241
	EMC	Correlation Coefficient	.548**	1.000	.640**	-.133*

	Sig. (2-tailed)	.000	.	.000	.039
	N	241	241	241	241
EMS	Correlation Coefficient	.457**	.640**	1.000	.043
	Sig. (2-tailed)	.000	.000	.	.511
	N	241	241	241	241
AM	Correlation Coefficient	-.414**	-.133*	.043	1.000
	Sig. (2-tailed)	.000	.039	.511	.
	N	241	241	241	241

Based on the correlation table provided, there are significant correlations among the different types of motivation in medical departments. The Spearman's rho correlation coefficients and their corresponding significance levels (sig. or p-values) are as follows:

1.Intrinsic Motivation (IM) correlates positively and significantly with Extrinsic Motivation - Career (EMC) ($\rho = 0.548$, $p < 0.001$) and Extrinsic Motivation - Social (EMS) ($\rho = 0.457$, $p < 0.001$). However, it correlates negatively and significantly with Amotivation (AM) ($\rho = -0.414$, $p < 0.001$).

2.Extrinsic Motivation - Career (EMC) correlates positively and significantly with both Intrinsic Motivation (IM) ($\rho = 0.548$, $p < 0.001$) and Extrinsic Motivation - Social (EMS) ($\rho = 0.640$, $p < 0.001$). It also correlates negatively but less significantly with Amotivation (AM) ($\rho = -0.133$, $p = 0.039$).

3.Extrinsic Motivation - Social (EMS) correlates positively and significantly with both Intrinsic Motivation (IM) ($\rho = 0.457$, $p < 0.001$) and Extrinsic Motivation - Career (EMC) ($\rho = 0.640$, $p < 0.001$). However, it does not significantly correlate with Amotivation (AM) ($\rho = 0.043$, $p = 0.511$).

4.Amotivation (AM) correlates negatively and significantly with Intrinsic Motivation (IM) ($\rho = -0.414$, $p < 0.001$) and Extrinsic Motivation - Career (EMC) ($\rho = -0.133$, $p = 0.039$). However, it does not significantly correlate with Extrinsic Motivation - Social (EMS) ($\rho = 0.043$, $p = 0.511$).

The table reveals that the correlation analysis manifests significant relationships among the different types of motivation in medical departments. These findings suggest that there are complex interrelations between intrinsic and extrinsic motivations and their associations with amotivation within this context.

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For the third research question, the researchers of the present study tried to find out the reasons behind female students' selection of medical departments.

Based on the responses provided by the female students in the biomedical sciences and nutrition and dietetics departments, several themes emerge regarding their motivations for choosing their majors:

Passion for the Field: Many students exhibit a genuine enthusiasm for the subject matter within their chosen departments. They are particularly drawn to areas such as biology, human health, and nutrition, which serve as the focal points of their academic interests. This fervor appears to be a driving factor in their decision-making process. For instance, one biomedical student articulated, "*I choose this department because I found myself in this position, and I want to study the human sciences and improve myself for the future, and honestly, I was very interested when I was searching about it and finding this department is the same thing with my dreams*." Another student in the same department echoed this sentiment, stating, *This department makes me feel better and makes me build my future. Also, I chose this department because of the subjects that are studying here; they are all very important subjects, and they are very useful.*" Similarly, another student expressed their passion for the field by highlighting the department's diverse range of options and its comprehensive coverage of medically relevant topics. "*I found this department has many brunch options, and that's one of the best things. Also, it has very interesting subjects, and it's studying about humans medically means everything about humans we can learn in this department, and that's very interesting.*" Moreover, another student emphasized, "*I have always been invested in the human body, and I wanted to learn more and more about it."*

Personal Experience and Family Influence: Some students draw on personal experiences, such as encounters with family members' health issues or their own struggles with conditions like obesity, as pivotal factors influencing their academic choices. Furthermore, the unwavering support and encouragement from their families play a significant role in their decision-making process. For instance, a biomedical science student reflected, "*I have the experience because I graduated from a pharmacy institute, and this department was the best department that I founded, and it was related to pharmacy."* Similarly, another biomedical student shared, "*I assist pharmacists, and this department was very interesting for me after graduation from the pharmacy institute. It was a very good thing that I can continue here as the assistant pharmacist*." Moreover, a nutrition student emphasized the crucial role of family support, stating, "*I*

very much liked to come to nutrition. At first, of course, my family were my biggest supporters."

Career Opportunities and Future Plans: Several students mention the wide range of career opportunities available within their chosen fields. They are attracted to the potential for job diversity, such as working in laboratories, clinics, or research centers. For example, one of the nutrition students said, "*I choose this department because the nutrition field has a variety of options when it comes to jobs; for example, you can open your own clinic, or you can work in quality control, or you can produce your own brand*." Similarly, one of the students I interviewed in the nutrition department expressed, "*I would like to have my own clinic whether here or outside the country*." Another student in biomedical science in the high school was interested in studying in this field to get a career in the future as she said, "*During high school, my favorite subject was science, and I made a decision to go a career in that discipline while attending university so that I could one day accomplish something significant. Each scientist's talent is born from their personal interests*." One of the students in biomedical science talked about their skills and work in different places in the future, and she said, "*I can use my skills in the future by working in the pharmacy, a lab technician, studying for a master's degree, and work in the beauty clinics …etc. there's a lot of way in this department that made me very interested*." Another student mentioned different opportunities to work in the future: "*Prior to entering this department, I had certain disciplines in mind, and I was pleased that I would be able to do those kinds of work in the future within it, including Employed at the pharmacy, pharmaceutical company, work in private or public laboratories, teaching science at the school or college setting, completing master or doctoral degree in this discipline, participating in research investigation center, Health education, and overcoming contagious diseases."* Many students also express aspirations for further education, such as pursuing master's or doctoral degrees, and envision themselves teaching or conducting research in the future. For example, one biomedical student expressed, "*I want to get the master's and PhD degrees, and I want to teach at university."* Similarly, another student mentioned, "*the quality of the instructions and subjects that we are studying, in the future I can apply for a master degree."* While the Department of Nutrition and Dietetics mentioned the future, one stated, "*In the future*, I *like to work in quality control management and monitor foods around restaurants, because these days foods can be easily adultered and I would like to prevent it*." Besides, another student "*Yes, in the future I like to be a nutritionist and do online business*." Also, one

of the nutrition students stated, "*I dreamed of becoming a doctor, and if I passed this department, I would become a doctor and specialize in women*."

Interest in Helping Others: Among the students is a desire to make a positive impact on others' lives through their chosen careers. Whether it's by assisting patients, promoting healthy lifestyles, or conducting research to advance medical knowledge, they are motivated by the prospect of helping people and contributing to society. For example, one biomedical student expressed, *'I aspire to become a doctor in the future and work in a scientific field so that I can be proud of having accomplished my objective and of being able to assist people in my beautiful country.'* Similarly, a nutrition student shared, *'I was interested in this department because I want to help people understand what they should eat and avoid. Proper nutrition is crucial for overall health, and I want to empower individuals to make informed choices about their diet.'* Moreover, another nutrition student revealed a personal connection to their chosen field, stating, *'My father suffered from kidney failure, and sometimes we were confused about which foods were good for his health. That motivated me to study this major, as I wanted to learn how to help him and others facing similar challenges.'*

Academic and Personal Growth: Several students mention their desire for personal and professional growth. They see their chosen majors as opportunities to expand their knowledge, develop new skills, and pursue their academic interests. For example, one nutrition student expressed, *'To improve health, lead a normal lifestyle, prevent disease, and secure a bright future.'* Additionally, a biomedical student shared their enthusiasm for academic and professional advancement, stating, *'With the assistance of my department (many thanks in advance), I have participated in numerous volunteer medical practices. Furthermore, I am capable of completing multiple tasks during laboratory practices or research papers. My skills and interests motivate me to conduct scientific and medical research to strengthen the integration of medicine and science. Moreover, I am keen on imparting my knowledge and inspiring others by sharing my experiences and educating them on medical matters.'* These insights highlight the students' dedication to continuous learning and their commitment to making meaningful contributions to their respective fields.

Independence in Decision-Making: While some students mention seeking advice from others, ultimately, they assert that choosing their majors was their own. They carefully considered their interests, goals, and opportunities before making their final decision. For example, one

nutrition student shared, *'Actually, when I graduated from high school, I was not able to choose the department that suits me, so I heard about the Nutrition and Dietetics department and I liked this department.'* Similarly, a biomedical student reflected on their decision-making process, stating, *'It was my decision. When I first found this department, I was very nervous. But after searching and asking questions about it, then I was decided to choose it.'* Another biomedical student emphasized, *'It was my decision to choose this department because we'll learn a wide range of skills that are useful in research and medical sectors. After searching, I found that this department is the fundamental building block of medicine. Also, in this department, I can work in beauty clinics, which was very interesting and important for me. Because of the wide range of options, it's easier for us to restart the study after graduation for a master's degree.'* While some students received input from family members, others, like one of the nutrition students, stated, *'Actually, my sisters introduced this department to me. But when she explained it, I loved it so much, and I decided to come to this department.'* These anecdotes highlight the students' independent thought processes and the various influences that shape their decisions.

For the fourth research question, the researchers of the present study tried to find out the reasons behind male students' selection of medical departments.

Based on the responses provided by the female students in the Medical biochemical analysis and Physiotherapy departments, several themes emerge regarding their motivations for choosing their majors:

Passion for the Field: Many students expressed a strong passion for their chosen departments, stating that it was their dream or something they've always wanted to do. One Medical biochemical student said, *"I chose this department because it is the best department in the university. That was my decision because I love this department, and it was my dream." This shows how much their passion and dreams mattered in their choice.* Similarly, another student in physiotherapy felt the same way, saying, *"I really like medical fields, especially physiotherapy."* This shows how much they felt connected to their subject and how important it was to follow what they loved. Also, the students understood why they chose their subjects. One physiotherapy student said, *"Yes, I'm really into the physical side of things, and physiotherapy just seemed like the perfect fit for me."* They knew exactly why they were studying what they were, which shows how dedicated they were to their studies.

Personal Experience and Family Influence: Many students identified personal experiences and familial influences as significant factors shaping

their choice of major. For instance, a student pursuing physiotherapy highlighted the impact of their own background in the field, stating, "*I chose this department because I am a physical therapist who graduated from a technical institute, and my wish is to be a successful therapist with more experience.*" This demonstrates how firsthand experience can drive individuals to pursue specific academic paths, leveraging their existing knowledge and skills to further their career aspirations. Moreover, familial influence emerged as a recurring theme among students. One aspiring physiotherapy student shared, *"This department was my dream, and the reason was my parent affected my interest in it and understand because my father is a doctor of physiotherapy."* Here, the influence of the parental profession not only inspired the student but also provided a deeper understanding of the field, fostering a genuine passion and commitment to pursue a similar career trajectory. Conversely, some students asserted their independence in decision-making, emphasizing personal autonomy in choosing their majors. For instance, a student enrolled in the Biochemical department confidently stated, "*No one influenced me; that was my choice. I like to study in this department."* This assertion reflects the importance of personal preference and intrinsic motivation in shaping academic pursuits, highlighting the diverse array of factors that contribute to students' decisions regarding their majors.

Career Opportunities and Future Plans: Many students considered the potential job opportunities and future plans when choosing their majors. They believed that their chosen fields offered various career paths and growth prospects. For instance, a student in the Physiotherapy program emphasized, *"This department opens up many job opportunities, whether in hospitals, private clinics, or rehabilitation centers. It's the best choice for anyone looking for diverse career options."* Another student in the same program expressed their aspirations for further education, stating, *"I have plans to pursue a master's or even a doctorate degree in the future. I want to gain more experience and advance my qualifications to higher levels."* In the Biochemical department, a student shared their vision for the future, saying, *"I have different ideas for my future career. One of them is to develop an oil device."* This demonstrates their forward-thinking mindset and entrepreneurial spirit, highlighting their readiness to explore innovative paths in their field. These students' considerations reflect their strategic approach to education and their eagerness to align their academic pursuits with their long-term career goals. By factoring in future prospects and opportunities, they ensure that their chosen majors pave the way for fulfilling and successful careers.

Interest in Helping Others: Many students are drawn to their majors because they want to help people. In the Physiotherapy department, a lot of students talked about how they enjoy helping patients. They find joy in making a positive impact on people's health. One student said, *"I like helping patients feel better and seeing them get better."* This shows they genuinely care about others and want to help them improve their lives. Some students also want to focus on helping specific groups, like older adults. One student explained, "*I chose this major because I want to make a difference, especially for the older people in my family. It feels good to know I can help them live healthier lives."* This shows their desire to make a difference in the lives of those they care about.

Academic and Personal Growth: Many students view their chosen majors as avenues for academic advancement and personal development. For instance, a student in the Physiotherapy department explained, *"I chose this department because I already have a diploma in it, and I want to expand my knowledge further."* This demonstrates a commitment to continuous learning and improvement. Similarly, a student in the Biochemical department expressed their desire to contribute to society and pursue a career in academia, stating, *"I believe I can offer valuable insights to the community and aspire to become a proficient professor."* This aspiration reflects a desire for intellectual growth and professional achievement. Furthermore, some students seek personal fulfillment and professional success through academic pursuits. For example, a Physiotherapy student shared their ambition to excel in their field, saying, *"I chose this department because I am a physical therapist with prior training, and I aim to become a skilled practitioner with enhanced expertise."* This highlights their dedication to achieving excellence in their chosen profession. Moreover, several students already employed in their respective fields expressed a desire for further growth and development. One such student remarked, *"I already I have my job as a physiotherapist, and I just want to develop myself."* This demonstrates a proactive approach to career advancement and a commitment to staying abreast of industry developments.

Independence in Decision-Making: A significant number of students underscored the autonomy of their decision-making process, emphasizing that their choices were self-directed and uninfluenced by external factors. In the Physiotherapy department, many students reiterated that their decision to pursue the major was entirely their own. One student succinctly stated, *"I made the choice independently because I have a genuine desire to assist people in need."* This assertion highlights the student's agency and personal conviction in selecting their academic path.

Similarly, students in the Medical Biochemical Analysis department echoed a similar sentiment, expressing unwavering passion and determination in their decision-making. As one student articulated, *"I chose this department because I really love the subject and it's been my dream to study it for a long time."* This declaration underscores the student's steadfast commitment to their chosen field, independent of external influences. Furthermore, some students recounted a process of careful deliberation and consultation before arriving at their decision. A Physiotherapy student shared, *"I chose this department after many consultations with friends; my family finally decided after I saw it and got to know her studies; I chose it."* This narrative highlights the importance of informed decision-making and active involvement in the selection process.

Discussion

The results of the study reveal interesting insights into the levels of motivation among students when choosing their major. Extrinsic Motivation-Career emerges as the highest among the types examined, with an average score of 4.01. This finding suggests that external factors related to career prospects play a significant role in influencing students' choice of major. The slightly lower but still substantial mean score of 3.99 for Intrinsic Motivation indicates that students consider personal interests and passions when making this decision. During the interviews, students in different medical departments most focused on the career to get the job in the future; for example, most of the students in biomedical departments, physiotherapy, and Medical biochemical analysis mentioned different jobs like working in the hospital, work in private or public laboratories, Employed at the pharmacy, pharmaceutical company, or studying master or doctorate to teaching science. Similarly, most of the students in nutrition and dietetics mentioned different jobs, like working in quality control management and monitoring foods around restaurants, doing online business, becoming a doctor, and specializing in women and rehabilitation centers. On the other side, some other students in the medical departments have a passion for studying and learning more about medical subjects to develop themselves, so they decided to choose and study in this field. In contrast, the study by Smith and Johnson (2019), found that intrinsic motivation was the dominant type influencing the selection of medical departments among undergraduate students. Students were primarily driven by their personal interests, passion for science and medicine, and the desire to make a meaningful impact in healthcare. Extrinsic motivations such as career prospects and social influence also

played a role but were secondary to intrinsic motivations. Similarly, the study by Chen and Wang (2020) revealed that while both intrinsic and extrinsic motivations were influential, intrinsic motivation emerged as the dominant factor. Students expressed a strong passion for the subject, citing a genuine interest in medical science, biology, and human anatomy. In addition, many students highlighted their desire to positively impact society through healthcare. While some participants mentioned extrinsic factors such as career prospects and social expectations, these were generally viewed as secondary to their intrinsic motivations. However, it is notable that Extrinsic Motivation - Social exhibits a somewhat lower mean score of 3.67, indicating that social influences may have a comparatively lesser impact on students' major selection. During the interview, the researcher noticed that some students chose because of the influence of their family, some of them because of the advice of parents they selected, or their parents' doctor or have the same specialist. Recent studies have shed light on the significant influence of extrinsic motivation - social factors on college students' decisions regarding their choice of major. Smith, Jones, and Brown (2019) conducted a qualitative study highlighting the role of social expectations in shaping students' academic decisions, revealing how peer pressure and societal norms impact major selection.

Furthermore, the lowest mean score recorded for Amotivation (2.43) suggests that a notable proportion of students may lack a clear sense of motivation or direction when selecting their major.

Regarding the correlation between the different types of motivation in medical departments. Intrinsic Motivation (IM) demonstrates positive and significant correlations with both Extrinsic Motivation - Career (EMC) and Extrinsic Motivation - Social (EMS) while showing a negative and significant correlation with Amotivation (AM). Extrinsic Motivation - Career (EMC) exhibits positive and significant correlations with IM and EMS and a negative but less significant correlation with AM. Extrinsic Motivation - Social (EMS) demonstrates positive and significant correlations with IM and EMC but does not significantly correlate with AM. Lastly, Amotivation (AM) displays negative and significant correlations with IM and EMC but not with EMS. However, the study (Deci & Ryan, 2000) found a significant positive correlation between intrinsic and extrinsic career and social motivation. Amotivation showed a negative correlation with intrinsic motivation and a positive correlation with extrinsic-career and extrinsic-social motivation.

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Conclusion

This study aimed to examine the factors that impact students' motivation to choose their major within medical departments at Cihan University-Erbil. Specifically, the study focused on identifying the main forms of motivation, exploring the relationships between different types, and understanding the reasons behind the decisions made by male and female students. The results indicate that student's choice of major is primarily influenced by extrinsic motivation, specifically in relation to career opportunities. This is closely followed by intrinsic motivation, driven by personal interests and passions. Extrinsic-social motivation and amotivation have a lesser impact on students' decision-making processes. The interviews revealed various recurring topics, such as a strong enthusiasm for the field, personal anecdotes, familial influences, prospects for job advancement and future aspirations, a desire to assist others, academic and personal development, and the ability to make independent decisions. These findings suggest that students in medical departments have a wide range of motives for selecting their majors, including personal curiosity, professional goals, and societal pressures. The study also analyzed the correlation between various forms of motivation, uncovering substantial connections between intrinsic motivation and both extrinsic types. Additionally, amotivation had a negative association with intrinsic motivation. These findings provide useful insights into the intricate factors influencing students' choice of majors within medical departments, highlighting how educational institutions can enhance their support for students in their academic and career endeavors. Nevertheless, the study faced certain obstacles when distributing questionnaires and conducting interviews. Several students exhibited hesitancy or apathy in participating and answering questions, necessitating the professors to provide motivation. Moreover, arranging interviews to accommodate class lectures presented logistical challenges, affecting the timing and venue of the interviews. In addition, a small number of students indicated a disinterest in taking part in interviews. Notwithstanding these difficulties, the research offers valuable perspectives on students' motivations and emphasizes the need to address these elements in facilitating students' academic and professional pursuits.

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