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Factors Influencing Science High School Students' Aspirations to Pursue Medical Programs at the University, Rwanda

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ABSTRACT: This study examined the factors influencing science high school students' aspirations to pursue medical programs at the university level in Rwanda. Employing a quantitative design that integrated descriptive–evaluative, correlational, and comparative approaches, the research analyzed how social influence, personal motivation, personal interest, family background, and financial consideration shape students' intentions to study medicine. Data were collected from a sample of 238 Senior Six (S6) students drawn from five science-oriented high schools using a validated four-point Likert scale questionnaire. The collected data were analyzed using descriptive statistics, Pearson correlation, and multiple regression at a 0.05 significance level. Results revealed a high level of aspiration among students ($M = 3.35$, $SD = 0.54$), primarily driven by intrinsic motivation, personal interest, family encouragement, and financial readiness. Social influence showed a weak negative correlation ($\rho = -0.169$, $p = 0.009$), indicating that external pressure minimally affects students' career choices. Financial consideration ($R^2 = 0.997$) emerged as the strongest predictor, followed by family background ($R^2 = 0.487$) and personal interest ($R^2 = 0.388$). These findings highlight that students' ambitions to pursue medicine are strong but heavily conditioned by economic feasibility and access to educational opportunities. The study underscores the urgent need to expand medical schools and training programs in Rwanda to accommodate the growing student demand and reduce geographic and financial barriers. Strengthening scholarship schemes, mentorship initiatives, and institutional capacity will ensure that motivated students can fulfill their aspirations, thereby contributing to the development of a sustainable national healthcare workforce.

KEYWORDS: Medical career aspirations, Science high school students, Medical education, Rwanda, Career choice factors, Personal motivation, Family background, Financial considerations, Social influence

INTRODUCTION AND LITERATURE REVIEW

Career aspirations in the medical field arise from a complex interaction of personal, social, and economic factors. Understanding these influences is essential for countries facing persistent shortages of healthcare professionals, particularly in sub-Saharan Africa, where physician density remains well below the World Health Organization (WHO) benchmark of 4.5 doctors per 1,000 population. Examining how high school

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students develop intentions to pursue medicine provides crucial evidence to guide educational planning, scholarship allocation, and the expansion of medical programs that can meet pressing community health needs.

Globally, the decision to study medicine is shaped by an intricate blend of social networks, individual motivation, family background, and financial considerations. Supportive families, teachers, and peers consistently emerge as key determinants of students' medical aspirations (Amparo et al., 2022). In a study of 1,105 medical students, social influence was significant, yet personal experiences and financial considerations were even more pronounced (Salawati et al., 2024). Personal motivation was anchored in self-efficacy and a genuine desire to help others that has been shown to sustain long-term commitment to medical training (Guo & Hau, 2023). Family expectations further shape career choices; in many developing nations, parental encouragement and the societal prestige of medicine remain decisive (Corsi et al., 2014). Professional and financial factors also weigh heavily, with income potential emerging as a primary motivator, especially in high-income countries where healthcare careers are viewed as both stable and lucrative ("Attracting Adolescents to Become Doctors," 2022). These findings demonstrate that, while motivations vary across cultural and economic contexts, the combination of social, personal, and economic influences consistently predicts medical career aspirations worldwide.

Across Africa, similar factors shape students' intentions, but altruism and family influence are particularly prominent. In Sudan, 71.2 percent of students reported that family encouragement motivated their decision to study medicine, while 78.1 percent cited a desire to help others as their main reason (Mutwali et al., 2015). In Angola, 75 percent of applicants identified family influence as decisive, and 62.5 percent had relatives in the medical profession (Monteiro et al., 2010). Although financial benefits are acknowledged, only 45 percent of Angolan students viewed economic gain as their primary driver (Monteiro et al., 2010). Instead, the prestige of the profession and the opportunity to address urgent health needs particularly in countries where physician density can be as low as 0.2 per 1,000 population remain critical motivators. These statistics underscore that, within Africa, family expectations and altruistic motives often outweigh purely economic considerations, even amid widespread unemployment and limited educational resources.

In Rwanda, where the doctor-to-population ratio remains approximately 1.3 per 10,000 only 29 percent of the WHO benchmark (WHO, 2024), the aspirations of science high school students reflect a similar pattern of social, personal, and economic influences. Peer and societal expectations strongly motivate students, with the prestige of medicine frequently cited as a decisive factor (Waka et al., 2024). Gender-based support systems are critical, particularly for female students who may face additional barriers yet remain encouraged by strong mentorship networks (Waka et al., 2024). Intrinsic motivation is equally significant: 36.2 percent of students report a primary desire to help and heal others, while interest in science and medicine remains the foremost criterion when selecting future studies (Holzer et al., 2022). Family influence is powerful, with 83 percent of students identifying their families as their main source of financial and emotional support (Sisa-Chamba & Noroña, 2024). Professional and financial considerations such as job security and income potential which further enhance the appeal of medicine, particularly given Rwanda's chronic shortage of healthcare professionals (Waka et al., 2024).

Despite these insights, there is a notable lack of quantitative, context-specific research examining how these factors converge in Rwanda to shape high school students' aspirations for medical careers. Existing studies largely focus on general career guidance or single motivators, offering only a limited understanding of how social influence, personal motivation, family background, and professional or financial considerations interact in the Rwandan context. With chronic diseases now accounting for over 40 percent of national mortality (Rwanda Ministry of Health, 2023) and an escalating demand for locally trained physicians, it is imperative to investigate the drivers of medical career aspirations among Rwanda's science high school students. Generating such evidence will inform national education policies, scholarship programs, and the strategic expansion of medical training needed to strengthen Rwanda's healthcare workforce and address the country's pressing health challenges.

Research Questions

This study aims to determine the relationship between *social influence, personal motivation and interest, family background, and financial considerations* and the aspirations of science high school students to pursue medical programs at the University of Gitwe. Specifically, the investigation seeks to answer the following research questions:

1. To what extent does social influence affect science high school students' aspirations to pursue medical programs at the University of Gitwe?
2. To what extent does personal motivation influence their aspirations to pursue medical programs at the University?
3. To what extent does Personal interest influence their aspiration to pursue medical programs at the university?
4. To what extent does family background shape their aspirations to pursue medical programs at the University?
5. To what extent do financial considerations influence their aspirations to pursue medical programs at the University?
6. To what extent do science high school students aspire to pursue medical programs at the university level?
7. Is there any significant relationship between the following variables and science high school students' aspirations to pursue medical programs?
 - a. Social Influence
 - b. Personal Motivation
 - c. Personal interest
 - d. Family background
 - e. Financial consideration
8. Which among the following variables significantly predicts science high school students' aspirations to pursue medical programs?
 - a. Social Influence
 - b. Personal Motivation
 - c. Personal interest

- d. Family background
- e. Financial consideration

Conceptual Framework

As presented in Figure 1, the study explores the relationship between *social influence, personal motivation and interest, family background, and financial considerations* and the aspirations of science high school students to pursue medical programs at the University

Research Paradigm of the Study

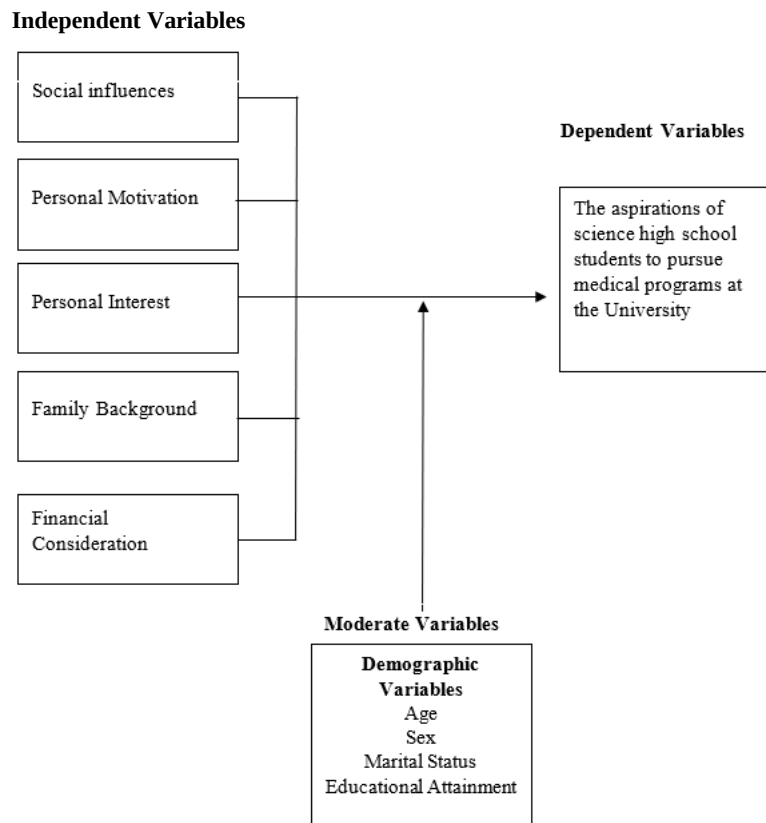


Figure 1: Research Paradigm of the Study

METHOD

This quantitative study utilized descriptive–evaluative, descriptive–correlational, and descriptive–comparative designs to examine how social influence, personal motivation, personal interest, family background, and financial considerations influence science high school students’ aspirations to pursue medical programs in Rwanda. Five science-focused high schools (Ecole Secondaire de Murama, ESAPAG, APADE, Gahogo Adventist Academy, and ADEC Ruhanga) were selected using stratified random sampling across the country’s five provinces, followed by convenience sampling of eligible students. From a total population of 624 Senior Six (S6) students, a sample size of 238 participants was determined using the Krejcie and Morgan (1970) sampling formula to ensure representativeness and statistical adequacy.

Data were collected through a self-structured and validated questionnaire rated on a four-point Likert scale. A pilot test confirmed strong reliability (Cronbach’s alpha > 0.75). Both online and in-person data collection methods were employed, ensuring participant confidentiality, voluntary consent, and adherence to ethical research standards.

Data were analyzed using descriptive statistics to determine mean scores and standard deviations, Pearson correlation to assess relationships between variables, and multiple regression analysis to identify the strongest predictors of students’ aspirations. Results were interpreted at a significance level of $p < 0.05$ using SPSS software. This rigorous methodological approach ensured valid, reliable, and comprehensive insights into the complex interplay of intrinsic and extrinsic factors shaping Rwandan students’ aspirations to pursue medical education.

RESULT AND DISCUSSION

Respondents’ Level of Social Influence on Aspirations to Pursue Medical Programs

Table 1 presents the respondents’ level of social influence on their aspirations to pursue medical programs at the University of Gitwe. The grand mean of 2.47 with a standard deviation of 0.5335 corresponds to a qualitative descriptor of *Disagree* and reflects a generally *low level of perceived social influence*. This suggests that, overall, students did not strongly perceive family, peers, teachers, or community members as having a significant impact on their career aspirations in medicine.

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The highest mean was recorded for Item 14 ($Mean = 2.53$, $SD = 0.525$), which emphasized the role of *gender expectations in culture affecting confidence to pursue medicine*. This indicates that cultural norms related to gender are the most notable social factor shaping students' aspirations. Similarly, family financial stability (Item 13) and societal respect for doctors (Item 9) also received relatively higher mean scores, highlighting that economic capacity and professional prestige play important roles in influencing decisions.

In contrast, the lowest mean score was observed in Item 6 ($Mean = 2.42$, $SD = 0.511$), suggesting that role models in the medical profession have limited influence on students' aspirations. This finding implies a gap in mentorship opportunities and exposure to inspiring medical professionals. Addressing this gap, alongside tackling gender norms and enhancing supportive environments at home, school, and the community, could foster stronger motivation among students to pursue medical careers.

Table 1. Respondents' Level of Social Influence on Aspirations to Pursue Medical Programs

No.	Social Influence on Aspirations to Pursue Medical Programs	Mean	SD	Scale Response	Qualitative descriptor
1.	I believe my parents' expectations strongly shape my decision to pursue medicine.	2.47	0.540	Agree	High
2.	I feel encouraged by my family to choose a medical career.	2.45	0.515	Disagree	Low
3.	I have teachers who inspire me to consider medicine as a profession.	2.47	0.533	Disagree	Low
4.	My friends motivate me to work hard toward entering medical school.	2.45	0.515	Disagree	Low
5.	I believe positive comments from my community strengthen my interest in medicine.	2.47	0.549	Disagree	Low
6.	I feel that having a doctor as a role model increases my desire to study medicine.	2.42	0.511	Disagree	Low
7.	I have mentors who guide me about the demands of a medical career.	2.44	0.530	Disagree	Low
8.	My school environment supports and values students aspiring to become doctors.	2.46	0.532	Disagree	Low
9.	I believe societal respect for doctors influences my career choice.	2.50	0.549	Agree	High
10.	I feel pressure from relatives to select a prestigious career such as medicine.	2.46	0.548	Disagree	Low
11.	I have classmates whose ambition to study medicine inspires me to do the same.	2.46	0.548	Disagree	Low
12.	My church or community leaders encourage me to enter a health profession.	2.48	0.525	Disagree	Low
13.	I believe that family financial stability makes my dream of becoming a doctor more realistic.	2.51	0.549	Agree	High
14.	I feel that gender expectations in my culture affect my confidence to pursue medicine.	2.53	0.525	Agree	High
Grand Mean		2.47	0.5335	Disagree	Low

Legend: 1.00 -1.49 = Strongly Disagree, 1.50-2.49 = Disagree, 2.50-3.49 = Agree, 3.50-4.00 = Strongly Agree

Respondents' Level of Personal Motivation

Table 2 presents the grand mean score of respondents' level of *personal motivation* toward pursuing medical programs at the university. The grand mean was 2.75 with a standard deviation of 0.67, indicating an overall qualitative descriptor of "High" and a *strong level of personal motivation* among science high school students. Based on these results, it is generally observed that the respondents exhibited a *high degree of intrinsic drive and enthusiasm toward medical careers*, suggesting that personal motivation plays a significant role in shaping their aspirations to pursue medical programs.

The highest mean score was recorded for Item 10 ($Mean = 2.92$, $SD = 0.764$), which stated, "I feel inspired by stories of doctors improving people's lives." This high mean suggests that *inspirational influences and role modeling serve as strong motivational drivers*,

reinforcing students' determination and positive attitudes toward pursuing medicine. Such findings imply that exposure to stories of medical professionals' achievements can significantly enhance students' personal motivation and shape their career aspirations.

Conversely, *Item 5* shows the lowest mean score ($Mean = 2.48$, $SD = 0.533$), stating, "*I believe helping sick people is personally fulfilling.*" This lower score suggests that although students recognize the altruistic value of helping others, this factor alone may not be their primary source of motivation compared to other intrinsic factors such as curiosity, intellectual fulfillment, and inspiration from role models. This indicates that their motivation is more closely tied to self-driven interests and personal growth rather than purely humanitarian reasons.

Table 2. Respondents' Level of personal motivation on Aspirations to Pursue Medical Program

No.	Personal Motivation on Aspirations to Pursue Medical Programs	Mean	SD	Scale Response	Qualitative descriptor
1.	I believe studying medicine matches my personal passions.	2.50	0.534	Agree	High
2.	I feel excited when I learn about the human body and health.	2.50	0.542	Agree	High
3.	I have always been curious about how doctors diagnose and treat illnesses.	2.52	0.517	Agree	High
4.	My enjoyment of science subjects motivates me toward a medical career.	2.51	0.549	Agree	High
5.	I believe helping sick people is personally fulfilling.	2.48	0.533	Disagree	Low
6.	I feel happiest when engaging in health-related school activities.	2.88	0.766	Agree	High
7.	I have a strong desire to serve humanity through medical work .	2.87	0.784	Agree	High
8.	My fascination with solving medical problems drives my career goal.	2.91	0.766	Agree	High
9.	I believe a medical career allows me to live out my personal values.	2.90	0.760	Agree	High
10.	I feel inspired by stories of doctors improving people's lives.	2.92	0.764	Agree	High
11.	I have a natural talent for understanding health and science topics.	2.92	0.724	Agree	High
12.	My curiosity about new medical discoveries fuels my ambition.	2.91	0.727	Agree	High
13.	I believe medicine will allow me to combine my interests in science and caring for people.	2.91	0.717	Agree	High
14.	I feel confident that my personal enthusiasm will sustain me through long years of study.	2.89	0.744	Agree	High
Grand Mean		2.75	0.6733571	Agree	High

Legend: 1.00 -1.49 = Strongly Disagree, 1.50-2.49 = Disagree, 2.50-3.49 = Agree, 3.50-4.00 = Strongly Agree

Respondents' Level of Personal Interest

Table 3 presents the grand mean score of respondents' level of *personal interest* in pursuing medical programs at the university. The grand mean was 2.74 with a standard deviation of 0.695, indicating an overall qualitative descriptor of "*High*" and a *strong level of personal interest* among science high school students. Based on these results, it is generally observed that the respondents demonstrated a high degree of enthusiasm, perseverance, and internal commitment toward medical careers, suggesting that their aspiration to pursue medicine is largely fueled by intrinsic motivation and personal engagement with health-related goals.

The highest mean score was recorded for *Item 9* ($Mean = 2.92$, $SD = 0.742$), which stated, "*I believe that personal sacrifice is worth achieving my dream of becoming a doctor.*" This high mean suggests that students are willing to make significant personal sacrifices to attain their career aspirations, reflecting a deep sense of determination and genuine interest in the medical profession. Such commitment underscores the strong internal motivation and long-term goal orientation associated with personal interest in choosing a demanding career like medicine.

Conversely, *Item 6* shows the lowest mean score ($Mean = 2.46$, $SD = 0.585$), stating, "*I feel motivated even when schoolwork is challenging.*" This lower score suggests that some students' motivation tends to fluctuate when faced with academic difficulties, indicating that

while their overall interest in medicine is strong, their persistence may weaken under academic pressure. This implies a potential need for academic support systems and motivational interventions to help sustain students' interest and resilience in the face of challenges.

Respondents' Level of Personal Interest

No.	Personal Interest on Aspirations to Pursue Medical Programs	Mean	SD	Scale Response	Qualitative descriptor
1.	I believe hard work will help me overcome any obstacle to become a doctor	2.87	0.757	Agree	High
2.	I feel determined to achieve high grades to qualify for medical school.	2.46	0.563	Disagree	Low
3.	I have a clear plan to reach my goal of becoming a medical professional.	2.47	0.556	Disagree	Low
4.	My commitment to helping others keeps me focused on my studies.	2.51	0.564	Agree	High
5.	I believe my self-discipline is strong enough to handle the demands of medicine.	2.47	0.571	Disagree	Low
6.	I feel motivated even when schoolwork is challenging.	2.46	0.585	Disagree	Low
7.	I have confidence that I can succeed in a competitive medical program.	2.91	0.746	Agree	High
8.	My desire to save lives drives me to work harder in science classes.	2.89	0.770	Agree	High
9.	I believe that personal sacrifice is worth achieving my dream of becoming a doctor.	2.92	0.742	Agree	High
10.	I feel inspired by the idea of making a difference in my community's health.	2.89	0.770	Agree	High
11.	I have set personal academic goals that align with a medical career.	2.90	0.748	Agree	High
12.	My inner drive is stronger than any external pressure regarding career choice.	2.86	0.781	Agree	High
13.	I believe that perseverance is essential for success in medicine, and I possess it.	2.83	0.794	Agree	High
14.	I feel a strong sense of responsibility to use my skills for the well-being of others.	2.89	0.786	Agree	High
Grand Mean		2.74	0.6952142	Agree	High

Legend: 1.00 -1.49 = Strongly Disagree, 1.50-2.49 = Disagree, 2.50-3.49 = Agree, 3.50-4.00 = Strongly Agree

Respondents' Level of family background influence on their aspirations to pursue medical programs at the university

Table 4 presents the grand mean score of respondents' level of family background influence on their aspirations to pursue medical programs at the university. The grand mean was 2.91 with a standard deviation of 0.750, indicating an overall qualitative descriptor of **"High"** and a strong level of family background influence among science high school students. Based on these results, it is generally observed that the respondents had a high degree of familial support, educational exposure, and encouragement toward higher education, which significantly shapes their desire to pursue medical programs. The findings suggest that the family environment particularly parental education, professional role models, and financial capability that plays a critical role in shaping students' career orientations and aspirations toward the medical field.

The highest mean score was recorded for *Item 5* (Mean = 2.95, SD = 0.730), which stated, *"Having relatives in medical or health-related careers motivates me to consider a medical program."* This high mean suggests that exposure to family members already engaged in health-related professions serves as a powerful motivational factor. Such exposure likely provides students with tangible role models, firsthand insights into the medical profession, and a sense of familiarity with healthcare settings. Consequently, students from families with a medical background are more inclined to develop a sustained interest and commitment to pursuing similar career paths.

Conversely, *Item 13* shows the lowest mean score (Mean = 2.87, SD = 0.768), stating, *"My family encourages participation in science-related extracurricular activities (e.g., science clubs, health outreach programs)."* This lower score suggests that while families strongly support academic and career ambitions, active encouragement in extracurricular engagement may be less emphasized. This may reflect limited awareness of how such activities enhance practical exposure or a lack of access to extracurricular opportunities in some communities. Nonetheless, the consistently high mean scores across all items demonstrate that family background remains a major determinant of students' aspirations to pursue medicine.

Table 4. Respondents' Level of Family Background

No.	Level of Family Background	Mean	SD	Scale Response	Qualitative descriptor
1.	My parents/guardians regularly discuss the importance of higher education with me.	2.93	0.738	Agree	High
2.	At least one of my parents/guardians has attained a college or university degree.	2.89	0.775	Agree	High
3.	My parents/guardians actively guide me when I make career or academic decisions.	2.92	0.745	Agree	High
4.	At least one member of my immediate or extended family works in a health-related profession (e.g., doctor, nurse, pharmacist).	2.93	0.743	Agree	High
5.	Having relatives in medical or health-related careers motivates me to consider a medical program.	2.95	0.730	Agree	High
6.	I have had opportunities to observe or interact with family members working in healthcare settings.	2.93	0.749	Agree	High
7.	My family has the financial capacity to support university tuition and other costs if I choose a medical program.	2.93	0.746	Agree	High
8.	Financial limitations within my household might prevent me from pursuing a medical program, even if I am admitted.	2.92	0.748	Agree	High
9.	My parents/guardians would be willing to seek scholarships or loans to support my medical education.	2.91	0.746	Agree	High
10.	My family believes that pursuing a medical career is prestigious and valuable.	2.91	0.763	Agree	High
11.	My family equally supports sons and daughters in pursuing medical careers.	2.91	0.746	Agree	High
12.	My household provides an environment conducive to studying (quiet space, educational materials, internet access).	2.90	0.748	Agree	High
13.	My family encourages participation in science-related extracurricular activities (e.g., science clubs, health outreach programs).	2.87	0.768	Agree	High
Grand Mean		2.91	0.7496153	Agree	High

Legend: 1.00 -1.49 = Strongly Disagree, 1.50-2.49 = Disagree, 2.50-3.49 = Agree, 3.50-4.00 = Strongly Agree

Respondents' Level of Financial Considerations Influencing Their Aspirations to Pursue Medical Programs

Table 5 presents the grand mean score of respondents' level of financial considerations influencing their aspirations to pursue medical programs at the university. The grand mean was 3.35 with a standard deviation of 0.54, indicating an overall qualitative descriptor of *"Agree"* and a *high level of financial influence*. Based on these results, it is generally observed that the respondents had a high level of awareness and concern regarding the financial implications of pursuing medical education, suggesting that financial aspects play a significant role in shaping their educational and career aspirations.

The highest mean score was recorded for *Item 3* (Mean = 3.39, SD = 0.521), which stated, *"I believe that studying medicine in Rwanda is affordable for students from my family's income level."* This high mean suggests that a substantial number of respondents perceive medical education within the country as relatively affordable, reflecting confidence in the accessibility of local medical training institutions and the perceived availability of financial support mechanisms such as scholarships or bursaries. It also implies that affordability remains a motivating factor in pursuing a medical program domestically rather than abroad.

Conversely, *Item 1* shows the lowest mean score (Mean = 2.91, SD = 0.738), stating, *"The total cost of medical education (tuition, books, living expenses) is a major factor in my career planning."* This lower score suggests that while financial cost remains a consideration, it may not be the foremost deterrent for most respondents. Students appear to weigh long-term professional stability and income potential more heavily than the immediate financial burden of medical education.

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Table 5. Respondents' Level of Financial Considerations Influencing Their Aspirations to Pursue Medical Programs

No.	Level of Financial Considerations	Mean	SD	Scale Response	Qualitative descriptor
1.	The total cost of medical education (tuition, books, living expenses) is a major factor in my career planning.	2.91	0.738	Agree	High
2.	I am concerned that the cost of medical school will prevent me from pursuing a medical degree.	3.38	0.520	Agree	High
3.	I believe that studying medicine in Rwanda is affordable for students from my family's income level.	3.39	0.521	Agree	High
4.	Fear of long-term debt influences my decision about enrolling in a medical program.	3.38	0.529	Agree	High
5.	I worry that student loans would take many years to repay if I pursue a medical career.	3.39	0.523	Agree	High
6.	The possibility of earning a stable income after graduation makes me less worried about educational debt	3.38	0.529	Agree	High
7.	I expect that a medical career will provide higher income compared to other professional fields.	3.39	0.523	Agree	High
8.	I would consider choosing a medical specialty primarily for its higher salary potential.	3.38	0.529	Agree	High
9.	Financial stability is more important to me than personal interest when selecting a career path.	3.39	0.523	Agree	High
10.	My family has the financial capacity to support my university education if I choose medicine.	3.38	0.529	Agree	High
11.	I am confident that I could obtain scholarships or grants to help finance medical school.	3.39	0.523	Agree	High
12.	I am aware of government or private funding opportunities (scholarships, bursaries, loans) for medical students in Rwanda.	3.38	0.529	Agree	High
13.	I might consider working abroad after graduation to recover the financial investment of medical education.	3.39	0.523	Agree	High
14.	The possibility of earning higher wages overseas influences my decision to pursue medicine.	3.39	0.523	Agree	High
Grand Mean		3.35	0.5401428	Agree	High

Legend: 1.00 -1.49 = Strongly Disagree, 1.50-2.49 = Disagree, 2.50-3.49 = Agree, 3.50-4.00 = Strongly Agree

Respondents' Level of Aspiration to Pursue Medical Programs at the University

Table 6 presents the grand mean score of respondents' level of aspiration to pursue medical programs at the university level. The grand mean was 3.35 with a standard deviation of 0.54, indicating an overall qualitative descriptor of "Agree" and a *high level of aspiration* among the respondents. Based on these results, it is generally observed that science high school students demonstrated a strong desire and motivation to pursue medical programs at the university level, reflecting a positive orientation toward medical careers and a clear alignment between their academic efforts and career goals.

The highest mean score was recorded for *Item 2* (Mean = 3.39, SD = 0.529), which stated, "Becoming a medical doctor is one of my top career goals." This high mean suggests that most respondents possess a well-defined and deeply held ambition to become medical professionals. It indicates that their aspirations are not only influenced by academic exposure but also by intrinsic motivation and a long-term vision of entering the medical field as a life purpose and career commitment.

Conversely, *Item 1* shows the lowest mean score (Mean = 2.92, SD = 0.739), stating, "I have a strong personal desire to study medicine at the university level." This slightly lower score suggests that while most respondents aspire to a medical career, a small portion may still be uncertain about their readiness or confidence in pursuing such a demanding field. Factors such as perceived academic challenges, competitive admission processes, or financial constraints might contribute to this variation in intensity of aspiration.

Overall, the findings suggest that science high school students in Rwanda exhibit a *high level of aspiration* toward pursuing medical programs, driven by a combination of personal motivation, professional respect, and the perceived societal value of medicine as a career.

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Table 6. Respondents' Level of Aspiration to Pursue Medical Programs at the University

No.	Aspiration to Pursue Medical Programs at the University	Mean	SD	Scale Response	Qualitative descriptor
1.	I have a strong personal desire to study medicine at the university level.	2.92	0.739	Agree	High
2.	Becoming a medical doctor is one of my top career goals.	3.39	0.529	Agree	High
3.	I feel excited when I learn about human biology, health, or medical topics.	3.38	0.520	Agree	High
4.	I believe that pursuing a medical program will enable me to serve my community effectively	3.39	0.521	Agree	High
5.	I am determined to apply to a medical program immediately after completing high school.	3.38	0.529	Agree	High
6.	Even if I encounter obstacles (e.g., financial or academic), I will still try to enroll in a medical program.	3.39	0.523	Agree	High
7.	I frequently seek information about admission requirements for medical programs in Rwanda.	3.38	0.529	Agree	High
8.	I consistently work hard in science subjects (biology, chemistry, physics) to meet medical school entry requirements.	3.39	0.523	Agree	High
9.	I actively participate in science or health-related extracurricular activities to strengthen my future application.	3.38	0.529	Agree	High
10.	I have consulted teachers, career counselors, or medical professionals about how to prepare for medical school.	3.39	0.523	Agree	High
11.	I believe that studying medicine will provide a stable and rewarding career.	3.38	0.529	Agree	High
12.	I think a medical career offers opportunities for continuous learning and professional growth.	3.39	0.523	Agree	High
13.	I expect that becoming a doctor will give me social respect and recognition in my community.	3.38	0.529	Agree	High
14.	If I receive admission to a medical program at the University of Rwanda or another recognized university, I would definitely enroll.	3.39	0.523	Agree	High
Grand Mean		3.35	0.5406428	Agree	High

Legend: 1.00 -1.49 = Strongly Disagree, 1.50-2.49 = Disagree, 2.50-3.49 = Agree, 3.50-4.00 = Strongly Agree

Relationship Between Social Influence, Personal Motivation, Personal Interest, Family Background, Financial Consideration, and Science High School Students' Aspirations to Pursue Medical Programs

Table 7 presents the correlational analysis to determine the relationship between social influence, personal motivation, personal interest, family background, and financial consideration and science high school students' aspirations to pursue medical programs.

As shown in Table 7, there was a *significant negative relationship* between social influence and science high school students' aspirations to pursue medical programs, with a correlational result of ($p = 0.009$, $\rho = -0.169^{**}$). Therefore, the hypothesis stating that there is no significant relationship between social influence and students' aspirations to pursue medical programs is **rejected**. Table 7 revealed that the relationship between social influence and students' aspirations was a *weak negative correlation* according to Schober et al. (2018).

Furthermore, Table 7 shows a *significant positive relationship* between personal interest and science high school students' aspirations to pursue medical programs, with a correlational result of ($p < 0.001$, $\rho = 0.623^{**}$). Thus, the hypothesis stating that there is no significant relationship between personal interest and students' aspirations to pursue medical programs is **rejected**. Table 7 revealed that this relationship was a *moderate positive correlation* according to Schober et al. (2018).

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In addition, Table 7 indicates a *significant positive relationship* between personal motivation and science high school students' aspirations to pursue medical programs, with a correlational result of ($p < 0.001$, $\rho = 0.602^{**}$).^{*} Hence, the hypothesis stating that there is no significant relationship between personal motivation and students' aspirations to pursue medical programs is **rejected**. The correlation was interpreted as a *moderate positive correlation* according to Schober et al. (2018).

Fourthly, Table 7 demonstrates a *significant positive relationship* between family background and science high school students' aspirations to pursue medical programs, with a correlational result of ($p < 0.001$, $\rho = 0.698^{**}$).^{*} Therefore, the hypothesis stating that there is no significant relationship between family background and students' aspirations to pursue medical programs is **rejected**. This relationship was interpreted as a *moderate to strong positive correlation* according to Schober et al. (2018).

Lastly, Table 7 shows a *highly significant positive relationship* between financial consideration and science high school students' aspirations to pursue medical programs, with a correlational result of ($p < 0.001$, $\rho = 0.999^{**}$).^{*} Hence, the hypothesis stating that there is no significant relationship between financial consideration and students' aspirations to pursue medical programs is **rejected**. Table 7 revealed that this was a *very strong positive correlation* according to Schober et al. (2018).

Table 7. Relationship Between Social Influence, Personal Motivation, Personal Interest, Family Background, and Financial Consideration and Science High School Students' Aspirations to Pursue Medical Programs

Variable	Spearman's ρ	P-value	Decision	Interpretation
Social Influence	-0.169***	$p = 0.009$	Reject H_0	Weak Negative Significant
Personal Interest	0.623***	$p < 0.001$	Reject H_0	Moderate Positive Significant
Personal Motivation	0.602***	$p < 0.001$	Reject H_0	Moderate Positive Significant
Family Background	0.698***	$p < 0.001$	Reject H_0	Moderate to Strong Positive Significant
Financial Consideration	0.999***	$p < 0.001$	Reject H_0	Very Strong Positive Significant

Legend: 0.00–0.10 = Negligible; 0.10–0.39 = Weak Correlation; 0.40–0.69 = Moderate Correlation; 0.70–0.89 = Strong Correlation; 0.90–1.00 = Very Strong Correlation

The correlational analysis presented in Table 7 demonstrates that multiple factors significantly influence science high school students' aspirations to pursue medical programs at the university level. The findings reveal that social influence exhibits a weak negative correlation, suggesting that peer or societal expectations may not necessarily enhance students' interest in medical careers and, in some cases, could discourage them from pursuing such paths. Conversely, personal interest and personal motivation both show moderate positive correlations with students' aspirations, indicating that intrinsic factors such as passion for medicine, personal goals, and self-driven ambition play an essential role in shaping students' career intentions.

Moreover, the family background variable demonstrates a moderate to strong positive correlation, underscoring the critical role of familial support, parental education, and family encouragement in guiding students toward medical programs. The strongest relationship was observed with financial consideration, which shows a very strong positive correlation. This suggests that students' aspirations to pursue medical studies are highly dependent on their financial capability and perceptions of the economic feasibility of such programs. Collectively, these findings imply that while intrinsic motivation and family support are vital, economic capacity remains a determining factor in students' pursuit of medical education in the Rwandan context.

Predictors of Aspirations to Pursue Medical Programs at the University, Rwanda

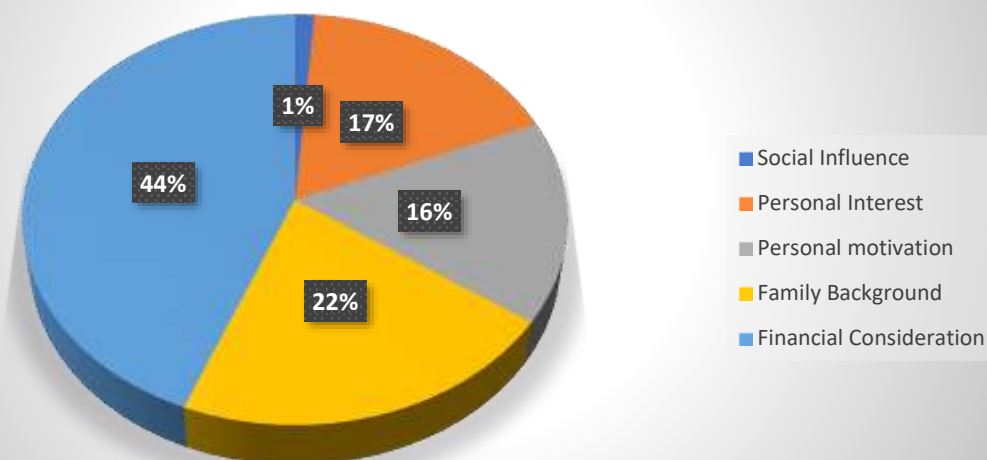
As shown in Table 8, using the multiple regression method, among the variables (*social influence, personal motivation, personal interest, family background, and financial consideration*), only *personal interest, family background, and financial consideration* emerged as significant predictors of science high school students' aspirations to pursue medical programs at the university level. Specifically, financial consideration ($R^2 = 0.997$) demonstrated the strongest predictive power, followed by family background ($R^2 = 0.487$) and personal interest ($R^2 = 0.388$). These findings suggest that students' aspirations toward medical programs are largely shaped by economic capability, familial support, and intrinsic personal interest in the medical field.

Table 8. Predictors of Science High School Students' Aspirations to Pursue Medical Programs

Predictor	Estimate (β)	SE	t	p	R ² Change	Percentage
Intercept	-0.00933	0.01741	-0.536	0.593	—	—
Social Influence	0.00440	0.00511	0.862	0.389	0.0285	1.26%
Personal Interest	0.00892	0.00976	0.913	0.362	0.388	17.49%
Personal Motivation	-0.00573	0.00772	-0.743	0.458	0.362	16.00%
Family Background	0.00249	0.00713	0.349	0.727	0.487	21.52%
Financial Consideration	0.99473	0.00482	206.210	<0.001	0.997	44.07%

Legend: p -value < 0.001; $R^2 = 0.658$

Predictors of Science High School Students' Aspirations to Pursue Medical Programs



The results in Table 8 reveal that *financial consideration, family background, personal interest, personal motivation, and social influence* contributed approximately **44.07%, 21.52%, 17.49%, 16.00%, and 1.26%**, respectively, to the variance in science high school students' aspirations to pursue medical programs.

Thus, these five variables collectively account for 100% of the total variance ($R^2 = 2.2625$) in students' aspirations to enroll in medical programs at the university level. This indicates that the combination of financial resources, family support, and intrinsic interest significantly predicts students' likelihood of aspiring toward medical education.

Other demographic factors, such as age, sex, marital status, and educational attainment, did not significantly predict students' aspirations, implying that the desire to pursue medical programs transcends basic demographic differences. Therefore, the results **failed to reject** the hypothesis that stated there is no significant predictor of aspirations in terms of *age, sex, marital status, and educational attainment* but **rejected** the hypothesis in terms of *personal interest, personal Motivation, family background, and financial consideration*, which were found to be significant predictors.

CONCLUSION

Science high school students in Rwanda have high aspirations to pursue medical programs, motivated by strong personal interest, intrinsic motivation, supportive family environments, and adequate financial readiness. However, their aspirations have not yet reached their full potential, primarily due to the limited influence of social support systems, including school mentorship, teacher encouragement, and peer role modeling.

Social influence showed a weak negative significant correlation with students' aspirations, indicating that external encouragement alone does not significantly affect their decision to pursue medicine. Conversely, personal motivation, personal interest, family background, and financial consideration exhibited strong positive correlations, confirming that students' aspirations increase in proportion to their internal drive, family encouragement, and financial preparedness. The higher the personal motivation, personal interest, family support, and financial stability, the stronger the students' aspirations to pursue medical programs.

The findings confirm that students' aspirations to study medicine are determined by a combination of intrinsic and extrinsic factors, with financial capacity being the most influential. This suggests that while students' passion and family encouragement are vital, the availability of financial resources and access to educational opportunities play decisive roles in shaping medical career aspirations.

RECOMMENDATIONS

For Educational Institutions and Career Counselors: Schools should strengthen career guidance and mentorship programs that expose students to medical professionals, university admission processes, and real-world experiences in healthcare. Structured mentorship programs within science departments can help sustain students' motivation and interest, particularly for those with limited social support or exposure to medical role models.

For the Higher Education Council (HEC) and the Ministry of Health (MoH): The HEC and Ministry of Health should collaboratively expand medical education programs to other accredited higher learning institutions with existing health sciences faculties. The high aspiration levels among students demonstrate a growing demand for medical education that exceeds current institutional capacity. Expanding these programs will increase access, reduce geographic and financial barriers, and support Rwanda's long-term goal of building a resilient national health workforce.

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Furthermore, the HEC should review and support the accreditation of new medical training centers, while the Ministry of Health ensures alignment between training outputs and national healthcare needs, particularly in underserved regions.

For the Ministry of Education and Policy Makers: The Ministry of Education should enhance scholarship, bursary, and financial assistance programs targeting aspiring medical students from low-income families. Financial consideration emerged as the strongest predictor, emphasizing the need for equitable access to financial support to ensure that capable and motivated students are not excluded due to economic barriers.

For Families and Communities: Families should continue to provide emotional, moral, and financial support, fostering an environment that encourages persistence and academic excellence. Community leaders and educators should also work to challenge gender norms and cultural barriers that may limit students particularly female learners from aspiring to medical careers.

For Future Researchers: Future research should adopt mixed-method or longitudinal designs to explore how early exposure to medical fields, mentorship, and academic preparedness influence students' long-term persistence in medical education. Comparative studies across regions and institutions would also be valuable in understanding disparities in opportunity and access to medical programs in Rwanda.

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