Comprehensive Investigation of Factors Influencing University Students’ Academic Performance in Saudi Arabia

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Abstract: Academic success in undergraduate programs is indicative of potential achievements for graduates in their professional careers. The reasons for an outstanding performance are complex and influenced by several principles and factors. An example of this complexity is that success factors might change depending on the culture of students. The relationship of 32 factors with the reported academic performance (RAP) was investigated by using a survey distributed over four key universities in Saudi Arabia. A total of 3565 Saudi undergraduate students completed the survey. The examined factors included those related to upbringing, K-12 education, and structured and unstructured activities. Statistical results validate that many factors had a significant relationship with the RAP. Among those factors, paternal’s education level and work field, type of intermediate and high schools, and the attendance of prayers in mosques were significantly associated with the reported performance. This study provides important insights into the potential root causes of success so that they can be targeted by educators and policy makers in the effort to enhance education outcomes.

Keywords: K-12 education; parents’ education; academic performance

1. Introduction

Throughout human evolution, the quality of education and its outcomes have been the key reasons for nations to have sustainable growth. High education is the source of an advanced workforce in most countries. Hence, reforming educational programs and examining reasons for impacting learners are highly significant for education institutions and educators. According to constructivism principles, the previous experiences and practices of students most likely affect academic performance by wide variety of factors that are likely to influence their learning outcome. Furthermore, many studies have investigated factors that influence academic performance. For instance, studies have been conducted to test the effects of class size [1], the effects of living on or off campus [2], learning facilities, family guidance and support [3], extracurricular activities [4], and the attitudes of learners [5].

The literature review shows that little research on factors influencing academic performance in Saudi Arabia, which has its own culture and environment, has been conducted. Numerous factors can affect student performance. Factors can be internal (e.g., personality, motivation, and passion) or external (e.g., socio-economic factors) ones that are out of the control of students. Several studies have explored the key internal and external factors to examine their effects on academic performance. The following section gives a brief background on education system in Saudi Arabia, followed by a literature review of eight factors that influence academic performance of students.
1.1. Background on the Education System in Saudi Arabia

The education system of Saudi Arabia was formally established in 1953 by three government institutions. Then, it was ruled by two institutions, the first being the Ministry of Education (MoE), which functions to “range from policy-making, planning and budgetary staffing to provide physical and teaching materials and supplement all elementary, intermediate and secondary schools” [6]. The second institution was the Ministry of Higher Education (MoHE), which was established in 1975 to administer, develop, and coordinate the demands of the Kingdom with regards to higher education. At that time, the MoHE supported and maintained the development of all the universities of the country, i.e., for male and female colleges. Diplomas, bachelors, masters, and Ph.D. degrees in divergent scientific and humanity specializations were offered. In addition, there were no private universities in the Kingdom prior to 1999/2000 and there were only seven government-funded universities. Currently, there are 29 universities in total, all of which are under the supervision of the MoE. Furthermore, education in Saudi Arabia is supported by the government and no tuition fees are charged.

Each year, all students who want to apply to a university must submit an application to a unified website system called “unified admission system for universities” run by the MoE, which then distributes applicants into universities. Moreover, all high school students in Saudi Arabia who apply to universities come from five different types of schools: government and private schools that offer identical curriculum, Islamic schools which focus more with religious curriculum, international schools which offer similar curriculum to private school with some addition of material from overseas schools and taught mainly in English language, and finally, overseas schools which are Saudi schools that are located overseas. Additionally, admitted students to universities start studying in a preparatory year, a one-year program before undergraduate academic programs. In addition, two local tests, namely the Tahseel and Qyias ability tests, must be taken by all students in high school as of 2007. The Tahseel test is for evaluating student levels on all high school subjects, and the Qyias test is for testing the ability to analyze the cognitive skills of students in K11-12. Those tests are administered by the Education and Training Evaluation Commission. Furthermore, the two tests and high school grades are used in university admission scores using a weight as follows: 20% of high school, 40% of the Qyias test, and 40% of the Tahseel test. Finally, grades from the preparatory year are the main basis for admission into college, and some colleges consider Tahseel and Qyias scores, as well.

Given that students in Saudi Arabia are enrolled in the preparatory year and proceed in their academic programs and follow constructivism theory, they are affected by several factors that possibly impact their academic performance.

1.2. Prior Experiences and Achievements

Constructivism theory claims that the knowledge of learners is affected by accumulated experiences of learners [7]. Learners connect life experiences and personal standpoints with the learning environment [8], i.e., education and prior knowledge and practices, family background, lifestyle, religious practices in some countries, motivation, and the personalities of learners. Therefore, the constructivism theory was chosen because it covers all possible factors that can affect students’ learning outcome. Further, learning becomes an active process affected by internal and external factors besides the process of gathered involvements and attitudes, and these factors influence acquired learning. Nevertheless, constructivism describes the development of learning outlines for learners to collaboratively interact/impact with diverse facets associated with different issues [9]. Gaining knowledge is viewed as socially constructed; thus, learners (persons) affected by the social context must be considered according to the vision of Vygotsky [10]. Moreover, they begin to exercise more control and announce explanations to a degree that accords with their ability to learn. This ability is also related to/affected by culture [11].
1.3. Previous Academic Achievements

Generally, there are different opinions about the predictive value of prior-examination performances upon future prospects for success. Staffolani and Bratti [12] observed that a measure of the prior educational achievements of students is the most influential factor on future achievements. Ringland and Pearson [13] also found a correlation between academic performances before and during university years. Hence, the future achievement of students is almost a linear trajectory from their previous one. Conversely, Huws et al. [14] verified that no tangible link emerged between the grades obtained at the A level and the performance at a university among psychology students in the UK. This finding was also supported by the Academic Admission Council at Oregon State University [15]. In similar issues, Rhodd et al. [16] asserted that a foundation year has an impact on education performance. Specifically, they affirmed that students who had undertaken a foundation year of study were more likely to achieve academic success on the subsequent Principles of Economics course. McKenzie and Schweitzer [17] also studied the academic, psychosocial, cognitive, and demographic predictors of the academic performance of first-year Australian university students. They further found that previous academic performances were identified as the most significant predictor of university performance.

1.4. Family Income and Education Background

Some researchers have recognized that the broadening dispersion in the family level of income and wealth is widening the ability gap between students. A few studies have investigated the correlation between the family background and subsequent academic performance of students. For instance, Graetz [18] suggested that the academic attainment of students is heavily dependent on the social status of their parents in the society. Similarly, Considine and Zappala [19] argued that parental income and social status can influence student performance. Furthermore, Humble and Dixon [20] confirmed that family wealth factors are positively associated with reading test scores and negatively associated with mathematics test scores. This finding may suggest that the effects of background factors depend on the study area of students. Contrarily, Hanushek et al. [21] concluded that any increase in the disparities in wealth, earnings, and income that may have occurred over the past half century do not translate into an increased connection between the family backgrounds of students and their achievement levels in adolescence.

Fields [2] reported that students can have a greater risk of not completing their degrees when the highest achieved education degree of their parents is a high school diploma. This study highlights a link between student performance and parental education level. Three facets are considered beneficial to the academic attainment of students in the latter study. They are parental participation in the educational program, knowledge of educational needs and goals, and an optimistic view of the future of their child. In Indonesia, Suryadarma et al. [22] discussed that parental education level can have a strong impact on the academic performance of students. Owens [23] equally expressed that the higher the level of academic achievement by the parent, the higher the achievement of the child. In Pakistan, Hijaz and Naqvi [24] went even further and suggested that maternal education level is the true predictor of the academic performance of students.

1.5. Religion

Religion can be a key component of academic achievements, especially for Saudi students. Faith is a common integral part of a day-to-day life for many individuals, e.g., individuals must pray five times per day in a mosque (place for praying in each area; commonly, in most cities, each prayer takes nearly 10 min). Consequently, religion can be linked to several daily religious activities performed by students. Springsteen [25] said, “Having an extremely culturally-competent teacher is essential to the positive intellectual growth of the students”. Therefore, foreign teachers must be culturally sensitive to students to advance learning outcomes. Religion is equally pertinent when comparing the performance of students who are members of minority groupings to that of majority groupings.
Carpenter et al. [26] also corroborated that minority students performed at a lower level in a study of accountancy, and this effect was partially attributed to "lower performance expectations". Cole and Ahmadi [27] investigated whether or not the religious preference of Islam (being a Muslim) had a significant influence on the academic achievement of students. They also compared Muslim, Jewish, and Christian students.

1.6. Lifestyle and Extracurricular Activities

Al Shawwa et al. [28] studied medical students in Saudi Arabia and found no significant correlation between student time spent on personal hobbies and/or extracurricular activities and academic performance. Notwithstanding, the study found that spending more time on social networking was strongly correlated with reduced student performance. Salem et al. [29] examined factors such as the students’ demographic data, motivation, educational factors, and socio-cultural factors, and identified whether these factors affect the academic performance of undergraduate medical students in Saudi Arabia. They found that academic performance was significantly affected by factors such as gender, marital status, interest and motivation, and the transportation used. Al-Ansari et al. [4] verified that how students perceive the relationship between extracurricular activities and their academic studies can affect actual participation in such activities. Additionally, a majority of the sample (345 dental students) participants were dissatisfied with school organized extracurricular activities. By contrast, Wooten [30] demonstrated that extracurricular activities and work responsibilities do not necessarily have a significant impact on motivation nor student performance. Similarly, Principe [1] asserted that external classroom factors did not have a statistically significant impact on student performance. Contrarily, Baker [31] and Derous and Ryan [32] confirmed the positive association between extracurricular activities—social networking aside—and academic achievement. Glass et al. [33] found that among Chinese university students, those who reported using social networking sites excessively were more likely to have lower academic performance. Alkhateeb [34] claims that there is positive affect of the social media platforms on the academic achievement in terms of the usage, especially if it considered as a learning tool.

1.7. Personality

Several studies have investigated how certain personality traits translate into improved examination performance. Kappe and van der Flier [35] noted that 33% of the variance in GPA scores could be attributed to a combination of intelligence, personality, and motivational predictors. Specifically, those with “conscientiousness” (characterized by being more organized and exhibiting greater perseverance) performed better than their less conscientious counterparts. Conscientiousness was actually singled out as the most influential predictor of academic achievement that explained 22% of the variance in GPAs. Ayala and Manzano [36] investigated the relationship between the dimensions of resilience, engagement, and the academic performance of first-year university students. They also found that the two dimensions of resilience (hardiness and resourcefulness) and the two dimensions of engagement (dedication and absorption) can predict the academic performance of students.

1.8. Nutrition and Health

Generally, it has been claimed that nutrition affects humans in different aspects, e.g., physical and energy, cognitive increase, and physical effort with capacity growth. Good nutrition is particularly crucial for students, as in the absence of parental influence, poor sleeping habits often lead to a higher frequency of searching for convenient (i.e., fast and easy to cook) and less healthy food options Deliens et al. [37]. Nutrition, or lack thereof, is a major concern that can affect all aspects of one’s life, including student achievements. Nutrition problems can be sensed by common obesity among students, and food insecurity in many regions of the world is present and can affect students. Likewise, it was reported that 10% of U.S. households with children encountered food insecurity in 2012 [38].
Additionally, deficiencies in nutrition can impact the thinking, concentration, behavior, and overall health of students. Belot and James [39] conducted a study assessing the test scores of students who took part in a campaign banning junk food against those who did not. It was found that the students who scored higher were from the group who were eating healthier food.

In Saudi Arabia, university students probably are less pressured to consume these types of food because they benefit from an allowance provided by their university and the students typically remain financially cared for by their families until graduation [28]. Elsayead and Said [40] found clearly that there is a positive connection between nutrition status and student achievement in Saudi Arabia. Most studies have confirmed that there is a relationship between body health and student achievements.

Nevertheless, nutrition is not the only concern—general wellness and health are equally essential. Brown et al. [41] discussed the effect of illness on the absence frequency of students. Student attendance is an evident factor that can increase student performance, which means that students with chronic illnesses are more likely to experience reduced performance.

1.9. Motivation

Motivation is undeniably a key factor in terms of determining the academic performance of a student. A student who is highly motivated to achieve an academic goal is much more likely to achieve a higher level of success than a student with a low level of motivation. Evidently, other factors will come into play, and there is a chance that a highly motivated student, despite his/her intentions and focus, is unable to achieve high levels of academic performance due to learning disabilities. However, highly motivated students are commonly successful.

Al-Shawwa et al. [28] validated that among medical students in Saudi Arabia, across a host of determinants, motivational factors are the most significant factors affecting student performance: “strong motivation for achievement and a clear goal will positively affect the GPA”. Similarly, Rhodd et al. [16] reported a strong correlation between motivation and student performance. Using a sample of 184 first-year university students, Bailey and Phillips [42] found that the lack of motivation is significantly associated with depression and anxiety. The lack of motivation can also be associated with lower academic performance and reduced self-esteem [43].

1.10. Summary of Factor Review and Objective of the Study

On the basis of the previous discussion and according to constructivism theory associated with factors that affect student achievements, the prior experiences of students will commonly have an impact on future performance, especially in education learning.

Additionally, there is a mix of internal and external factors that can influence the academic performance of students (as measured by GPA). This endorses the notion expressed by Mlambo [44] that context-specific research should be undertaken to address pedagogical factors impeding student performance. This highlights that findings might be restricted to the context they have been observed in. A review of the literature on this topic illustrates that a wide range of factors can contribute to the academic performance of students. There is no single factor standing out as a lesser or more important determinant than the others. Observing one determinant in isolation might be too limiting to provide a comprehensive understanding. Hence, creating a comprehensive assessment that includes the potential of key factors is critical. More focus should be placed on the factors that are within the control of students and/or educators.

The current study aims to examine the most prominent factors that potentially affect the academic performance of undergraduate students in Saudi Arabia. Examining the hypothesized prominent factors is important given that the Saudi context can have special characteristics (e.g., religion and culture). Such characteristics can change common findings in the literature regarding the effects of the tested factors. Relating those factors with
constructivism theory assists parents and education policy makers to address the factors that impact students’ learning so that their learning outcome is improved.

2. Methodology

A survey was emailed to a subset of undergraduate students of four major Saudi Arabian universities, listed in Table 1. The targeted sample was composed of those who have completed the first two years of their bachelor’s degree. Two universities are located in Riyadh City: King Saud University (KSU) and Princes Nourah University (PNU). King Abdulaziz University (KAU) and King Fahd University of Petroleum and Minerals (KFUPM) are located in Jeddah and Dhahran cities, respectively. A total of 3565 participants completed the survey, with a response rate of 1.2%.

Table 1. Summary of universities selected for data collection.

| University                                      | Year of Establishment | Location | Colleges                           | Number of All Students (M/F) |
|-------------------------------------------------|-----------------------|----------|------------------------------------|-----------------------------|
| King Saud University (KSU)                       | 1957                  | Riyadh   | Humanities and Social Sciences     | 60,936                      |
| King Fahd University for Petroleum and Minerals (KFUPM) | 1975                  | Dhahran  | Scientific                         | 11,568                      |
| King Abdulaziz University (KAU)                 | 1976                  | Jeddah   | Health                             | 176,187                     |
| Princess Nora bint Abdul Rahman University (female) (PNU) | 2010                  | Riyadh   |                                     | 46,935                      |

Consistent with the indicated objective, the survey was designed to be comprehensive and included all potential factors that could affect the academic performance of students in Saudi Arabia. Total of 32 factors were examined in the study. The factors were divided into groups to simplify the description and interpretation of the results. For example, Table 2 lists gender, university, and college factors. The students responded on the basis of their perceptions of the choices. The available responses to each factor were determined on the basis of best judgment and expertise of the authors. The noted tables illustrate the responses of the students to each factor. For instance, Table 2 indicates that a total of 1806 students reported that they are males. Out of the 1806, a total of 457 students reported that their GPA is low (less than 3.5).

In the survey, the students were required to choose a category that describes their academic performance (as defined by their current GPA). As shown below, there were three GPA classifications: High (4.25 ≤ GPA ≤ 5), Middle (3.5 ≤ GPA < 4.25), and Low (GPA < 3.5).

A parameter, Outstanding %, to highlight outstanding percentage was defined to be the ratio between the outstanding respondents who obtained GPA in the High category over the total respondents in each factor. For instance, 67% of the female respondents reported an outstanding GPA compared with only 35.7% of the male students (Table 2).

Chi-square tests were employed to statistically examine if there was a relationship between the reported academic performance (RAP) and each of the 32 factors of interest (e.g., gender). The Bonferroni method was also employed to control for type 1 error rates in these multiple comparisons. Therefore, the relationships were considered statistically significant at the p value < 0.0015 level. When requirements were violated, Fisher’s exact test was used.
Table 2. Summary results for gender, university, and college factors. A bold p value indicates a significant relationship between the related factor and the reported academic performance. Outstanding percentage is the highest RAP category divided by the same row total.

| Factor             | Response   | High | Middle | Low  | Total | Outstanding % | p Value |
|--------------------|------------|------|--------|------|-------|---------------|---------|
| Gender             | Male       | 645  | 704    | 457  | 1806  | 35.7          | <0.0001 |
|                    | Female     | 1179 | 437    | 143  | 1759  | 67.0          |         |
| University         | KSU        | 1266 | 669    | 281  | 2216  | 57.1          |         |
|                    | KAU        | 266  | 172    | 110  | 548   | 48.5          | 0.0004  |
|                    | KFUPM      | 238  | 266    | 193  | 697   | 34.2          |         |
|                    | PNU        | 36   | 22     | 9    | 67    | 53.7          |         |
| College            | Engineering| 312  | 256    | 160  | 728   | 42.9          |         |
|                    | Computer and Information Sciences | 217  | 141    | 69   | 427   | 50.8          |         |
|                    | College of Medicine | 38   | 13     | 3    | 54    | 70.4          |         |
|                    | Dentistry  | 14   | 8      | 1    | 23    | 60.9          |         |
|                    | Pharmacy   | 37   | 22     | 4    | 63    | 58.7          |         |
|                    | Applied Medical Science | 124  | 34     | 10   | 168   | 73.8          |         |
|                    | Architecture and Planning | 4    | 9      | 2    | 22    | 18.2          |         |
|                    | Business Administration | 297  | 195    | 73   | 565   | 52.6          |         |
|                    | Sciences   | 11   | 9      | 9    | 29    | 37.9          | 0.0004  |
|                    | Food and Agricultural Sciences | 155  | 98     | 56   | 309   | 50.2          |         |
|                    | Law and Political Sciences | 81   | 35     | 8    | 124   | 65.3          |         |
|                    | Arts       | 118  | 93     | 70   | 281   | 42            |         |
|                    | Education  | 141  | 58     | 23   | 222   | 63.5          |         |
|                    | Nursing    | 24   | 11     | 2    | 37    | 64.9          |         |
|                    | Languages and Translation | 66   | 22     | 7    | 95    | 69.5          |         |
|                    | Preparatory year | 73   | 49     | 38   | 160   | 45.6          |         |
|                    | Others     | 70   | 60     | 46   | 176   | 39.8          |         |

3. Results

3.1. Gender, College, and University Factors

Gender was significantly associated with the RAP (X-squared = 382.59, df = 2, p < 0.0001), with females reporting higher academic performance than males. The university of the respondent factor was significantly associated with his/her RAP (p = 0.0004). Particularly, the respondents from KSU and PNU reported the highest academic performance. The college of the respondent factor was significantly associated with his/her RAP (p = 0.0004). Specifically, the respondents from colleges of Medicine, Medical Sciences, Languages, and Translation appeared to report higher academic performance, while the lowest RAP occurred for the Agriculture, Tourism, and Architecture, and Planning colleges.

3.2. Personal Factors

Table 3 shows the results for selected personal factors. Whether or not the students maintain prayers in the mosque was also significantly associated with the RAP (X-squared = 422.77, df = 8, p < 0.0001). Students who performed all or all except for *Alfajer* prayer (Morning prayer) in the mosque reported higher academic performance than those who did not pray or infrequently pray at the mosque. Students who performed all prayers, except for *Alfajer*, reported slightly higher academic performance compared with those who performed all prayers there. Involvement in extracurricular activities was significantly associated with the RAP (X-squared = 21.618, df = 2, p < 0.0001). Particularly, involvement in these activities was associated with higher RAP. Whether or not the students eat breakfast was significantly associated with the RAP (X-squared = 16.986, df = 2, p = 0.0002). That is, students who eat breakfast reported higher academic performance.
Table 3. Summary results for selected personal factors. A bold \( p \) value indicates a significant relationship between the related factor and the reported academic performance. Outstanding percentage is the highest RAP category divided by the same row total.

| Factor                     | Response     | High | Middle | Low  | Total | Outstanding % | \( p \) Value |
|----------------------------|--------------|------|--------|------|-------|---------------|--------------|
| Praying in the mosque      | Yes, all     | 171  | 156    | 96   | 423   | 40.4          | \(<0.0001\)   |
| (Male only)                | All but \( \text{Alfajer} \) | 136  | 137    | 57   | 330   | 41.2          |              |
|                            | Sometimes    | 243  | 320    | 235  | 798   | 30.5          |              |
|                            | No           | 70   | 74     | 63   | 207   | 33.8          |              |
| Extracurricular activities | Yes          | 899  | 472    | 205  | 1576  | 57            | \(<0.0001\)   |
|                            | No           | 836  | 628    | 230  | 1694  | 49.4          |              |
| Eating breakfast           | Yes          | 1059 | 601    | 306  | 1966  | 53.9          | 0.0002        |
|                            | No           | 679  | 499    | 272  | 1450  | 46.8          |              |

1 \( \text{Alfajer} \) prayer is the morning prayer.

3.3. Parents Education, Work Field, and Financial Status

Table 4 shows that paternal academic degree was significantly associated with the student RAP (X-squared = 36.21, df = 14, \( p = 0.0009 \)). Specifically, having a father with a Ph.D. degree was associated with the highest RAP, which was followed by master, bachelor, and elementary schools (there was comparable RAP among these three degrees). The other categories also had comparable RAPs. The area of paternal degree was not significantly associated with the student RAP (X-squared = 22.08, df = 8, \( p = 0.0047 \)). The sector in which the father works (or worked before retirement) was significantly associated with the RAP (X-squared = 23.44, df = 6, \( p = 0.0007 \)). The highest to the lowest RAP sectors were Business, Government, Private, and Military, respectively.

Maternal academic degree was not significantly associated with the student RAP (X-squared = 17.907, df = 14, \( p = 0.2111 \)). The area of maternal degree was not significantly associated with the student RAP (X-squared = 9.5399, df = 6, \( p = 0.1454 \)). The sector in which the mother works (or worked before retirement) was not significantly associated with the RAP (X-squared = 12.511, df = 6, \( p = 0.0515 \)). Parents living together was not significantly associated with the RAP (X-squared = 6.2916, df = 2, \( p = 0.0430 \)). Whether or not the parents continuously follow the student academic status was not significantly associated with the RAP (X-squared = 9.1462, df = 4, \( p = 0.0575 \)). The reported family financial status was significantly associated with the RAP (X-squared = 22.632, df = 4, \( p = 0.0001 \)). Specifically, there was a positive association between both factors, i.e., improved family financial status was associated with higher RAP. Whether physical punishment by parents was used as a raising method was not significantly associated with the RAP (X-squared = 8.4824, df = 2, \( p = 0.0144 \)).

The number of siblings was not significantly associated with the RAP (X-squared = 24.947, df = 10, \( p = 0.0054 \)). The rank of the students among their siblings (e.g., oldest or youngest) was not significantly associated with his/her RAP (X-squared = 3.2788, df = 4, \( p = 0.5123 \)). The residence was significantly associated with the RAP (X-squared = 66.114, df = 6, \( p <0.0001 \)). Specifically, living with parents and on campus were associated with the highest and lowest RAP, respectively. There were comparable reported performances among the students from the other two living options.
Table 4. Summary results for parental education, work field, and financial status factors. A bold $p$ value indicates a significant relationship between the related factor and the reported academic performance. Outstanding percentage is the highest RAP category divided by the same row total.

| Factor                      | Response              | High | Middle | Low | Total | Outstanding % | $p$ Value |
|-----------------------------|-----------------------|------|--------|-----|-------|---------------|-----------|
| Paternal education level    | Ph.D.                 | 115  | 55     | 19  | 189   | 60.9          |           |
|                             | MS                    | 155  | 82     | 43  | 280   | 55.4          |           |
|                             | BS                    | 553  | 331    | 143 | 1027  | 53.9          |           |
|                             | Diploma               | 179  | 132    | 75  | 386   | 46.4          | 0.0009    |
|                             | High school           | 329  | 224    | 140 | 693   | 47.5          |           |
|                             | Middle school         | 203  | 136    | 85  | 424   | 47.9          |           |
|                             | Elementary School     | 150  | 102    | 42  | 294   | 51            |           |
|                             | Did not study         | 108  | 62     | 45  | 215   | 50.2          |           |
| Paternal major              | Medicine related      | 60   | 30     | 16  | 106   | 56.6          |           |
|                             | Engineering related   | 343  | 191    | 103 | 637   | 53.9          |           |
|                             | Literature and arts   | 525  | 358    | 153 | 1036  | 50.7          | 0.0047    |
|                             | Military              | 302  | 226    | 141 | 669   | 45.1          |           |
|                             | No degree             | 551  | 316    | 171 | 1038  | 53.1          |           |
| Paternal work field         | Governmental employee (civil) | 794 | 513    | 240 | 1547  | 51.3          | 0.0007    |
|                             | Private sector employee | 309 | 177    | 108 | 594   | 52            |           |
|                             | Business man          | 364  | 202    | 91  | 657   | 55.4          |           |
|                             | Military or security forces | 318 | 230    | 150 | 698   | 45.6          |           |
| Maternal education          | Ph.D.                 | 21   | 16     | 2   | 39    | 53.9          |           |
|                             | MS                    | 48   | 22     | 14  | 84    | 57.1          |           |
|                             | BS                    | 488  | 296    | 149 | 933   | 52.3          |           |
|                             | Diploma               | 169  | 107    | 48  | 324   | 52.2          | 0.2111    |
|                             | High school           | 357  | 236    | 116 | 709   | 50.4          |           |
|                             | Middle school         | 221  | 153    | 84  | 458   | 48.3          |           |
|                             | Elementary School     | 219  | 161    | 88  | 468   | 46.8          |           |
|                             | Did not study         | 267  | 135    | 90  | 492   | 54.3          |           |
| Maternal major              | Medicine related      | 44   | 21     | 17  | 82    | 53.7          |           |
|                             | Engineering related   | 122  | 55     | 29  | 206   | 59.2          | 0.1454    |
|                             | Literature and arts   | 606  | 405    | 192 | 1203  | 50.4          |           |
|                             | No degree             | 1014 | 643    | 350 | 2007  | 50.5          |           |
| Maternal work field         | Governmental employee (civil) | 520 | 353    | 145 | 1018  | 51.1          | 0.0515    |
|                             | Private sector employee | 66  | 54     | 23  | 143   | 46.2          |           |
|                             | Business woman        | 44   | 28     | 13  | 85    | 51.8          |           |
|                             | House wife            | 1160 | 690    | 410 | 2260  | 51.3          |           |
| Do parents Live together?   | Yes                   | 1659 | 1020   | 534 | 3213  | 51.6          | 0.043     |
|                             | No                    | 129  | 106    | 58  | 293   | 44            |           |
| Do parents follow-up on your study? | Yes                  | 941  | 576    | 271 | 1788  | 52.6          |           |
|                             | No                    | 178  | 111    | 73  | 362   | 49.2          | 0.0575    |
|                             | Sometimes             | 675  | 437    | 236 | 1362  | 49.6          |           |
| Family perceived financial status | Rich                 | 168  | 68     | 29  | 265   | 63.4          | 0.0001    |
|                             | Middle-class          | 1586 | 1030   | 541 | 3157  | 50.2          |           |
|                             | Low-income            | 37   | 27     | 22  | 86    | 43.0          |           |
| Physical punishment by parents | Yes                 | 613  | 407    | 242 | 1262  | 48.6          | 0.0144    |
|                             | No                    | 1179 | 716    | 351 | 2246  | 52.5          |           |
| Number of siblings          | More than 10          | 179  | 162    | 85  | 426   | 42.0          |           |
|                             | Between 7 and 9       | 693  | 416    | 231 | 1340  | 51.7          |           |
|                             | Between 4 and 6       | 751  | 447    | 235 | 1433  | 52.4          |           |
|                             | Between 2 and 3       | 146  | 92     | 40  | 278   | 52.5          | 0.0054    |
|                             | 1                     | 21   | 5      | 2   | 28    | 75.0          |           |
|                             | None                  | 3    | 3      | 0   | 6     | 50.0          |           |
Table 4. Cont.

| Factor                        | Response     | High | Middle | Low  | Total | Outstanding % | p Value |
|-------------------------------|--------------|------|--------|------|-------|---------------|---------|
| Student rank among sibling    | Oldest       | 404  | 282    | 150  | 836   | 48.3          | 0.5123  |
|                               | Youngest     | 232  | 147    | 75   | 454   | 51.1          |         |
|                               | In between   | 1153 | 697    | 369  | 2219  | 52.0          |         |
| Residence                     | On campus    | 239  | 231    | 157  | 627   | 38.1          |         |
|                               | With parents | 1358 | 802    | 370  | 2530  | 53.7          | <0.0001 |
|                               | Off campus with roommates | 12   | 6     | 5    | 23    | 52.2          |         |
|                               | Others       | 179  | 87     | 62   | 328   | 54.6          |         |

3.4. K-12 Education

Whether the respondents attended a pre-school (before the elementary school) or not was not significantly associated with the RAP (X-squared = 4.6286, df = 2, p = 0.0988) (Table 5). The elementary school type was not significantly associated with the RAP (X-squared = 22.949, df = 8, p = 0.0034). However, the intermediate school type was significantly associated with the RAP (X-squared = 31.441, df = 8, p = 0.0001). Particularly, the respondents from international schools and overseas schools reported the highest performance followed by religious schools, while the respondents from public and private schools reported comparable performances. The high school type was significantly associated with the RAP (p = 0.0005), while the respondents from public and private schools reported comparable performances. The respondents from religious and international schools reported the highest performance followed by overseas schools. Having a tutor (in the past) was significantly associated with the RAP (X-squared = 13.322, df = 2, p = 0.0013). Specifically, the respondents who reported not having a tutor reported higher academic performance.

Table 5. Summary results for factors related to K-12 education. A bold p value indicates a significant relationship between the related factor and the reported academic performance. Outstanding percentage is the highest RAP category divided by the same row total.

| Factor                        | Response     | High | Middle | Low  | Total | Outstanding % | p Value |
|-------------------------------|--------------|------|--------|------|-------|---------------|---------|
| Pre-school enrollment         | Yes          | 941  | 626    | 301  | 1868  | 50.4          | 0.0988  |
|                               | No           | 883  | 518    | 304  | 1705  | 51.8          |         |
| Classification of elementary school | Public     | 1318 | 848    | 455  | 2621  | 50.3          |         |
|                               | Private      | 318  | 208    | 111  | 637   | 49.9          |         |
|                               | Religious    | 118  | 69     | 22   | 209   | 56.5          | 0.0034  |
|                               | International| 8    | 1      | 2    | 11    | 72.7          |         |
|                               | Overseas     | 64   | 17     | 11   | 92    | 69.6          |         |
| Classification of intermediate school | Public    | 1325 | 856    | 467  | 2648  | 50            |         |
|                               | Private      | 314  | 205    | 107  | 626   | 50.2          |         |
|                               | Religious    | 113  | 66     | 22   | 201   | 56.2          |         |
|                               | International| 11   | 2      | 3    | 16    | 68.8          | 0.0001  |
|                               | Overseas     | 59   | 12     | 5    | 76    | 77.6          |         |
| Classification of high school | Public       | 1188 | 755    | 401  | 2344  | 50.7          | 0.0005  |
|                               | Private      | 544  | 370    | 199  | 1113  | 48.9          |         |
|                               | Religious    | 33   | 5      | 0    | 38    | 86.8          |         |
|                               | International| 14   | 3      | 0    | 17    | 82.4          |         |
|                               | Overseas     | 47   | 10     | 5    | 62    | 75.8          |         |
| Sought a tutor in school      | Yes          | 527  | 393    | 212  | 1132  | 46.6          | 0.00013 |
|                               | No           | 1291 | 747    | 393  | 2431  | 53.1          |         |
3.5. Pre-Undergraduate Degree Credentials

The RAP was significantly associated with the high school GPA (X-squared = 183.11, df = 12, \( p < 0.0001 \)), Qiyaas score (X-squared = 203.88, df = 12, \( p < 0.0001 \)), and Tahseli score (X-squared = 241.26, df = 12, \( p < 0.0001 \)) (Table 6). More specifically, there was a positive association between the RAP and each of the three metrics.

Table 6. Summary results for factors related to the prior application to undergraduate degree credentials. A bold \( p \) value indicates a significant relationship between the related factor and the reported academic performance. Outstanding percentage is the highest RAP category divided by the same row total.

| Factor                   | Response     | High       | Middle    | Low        | Total | Outstanding % | \( p \) Value |
|--------------------------|--------------|------------|-----------|------------|-------|---------------|--------------|
| High school graduation score | 95–100%     | 1401       | 719       | 312        | 2432  | 57.6          | \( <0.0001 \) |
|                          | 90–95%       | 255        | 260       | 152        | 667   | 38.2          |              |
|                          | 85–90%       | 79         | 84        | 64         | 227   | 34.8          |              |
|                          | 80–85%       | 39         | 39        | 24         | 102   | 38.2          |              |
|                          | 75–80%       | 27         | 21        | 26         | 74    | 36.5          |              |
|                          | 70–75%       | 15         | 7         | 15         | 37    | 40.5          |              |
|                          | Less than 70%| 6          | 10        | 13         | 29    | 20.7          |              |
| Qiyaas test score ¹      | 95–100%      | 113        | 23        | 8          | 144   | 78.5          | \( <0.0001 \) |
|                          | 90–95%       | 289        | 100       | 51         | 440   | 65.7          |              |
|                          | 85–90%       | 372        | 238       | 110        | 720   | 51.7          |              |
|                          | 80–85%       | 389        | 262       | 118        | 769   | 50.6          |              |
|                          | 75–80%       | 334        | 257       | 111        | 702   | 47.6          |              |
|                          | 70–75%       | 194        | 163       | 94         | 451   | 43            |              |
|                          | Less than 70%| 72         | 85        | 100        | 257   | 28            |              |
| Tahseli test score ²     | 95–100%      | 111        | 25        | 6          | 142   | 78.2          | \( <0.0001 \) |
|                          | 90–95%       | 200        | 58        | 26         | 284   | 70.4          |              |
|                          | 85–90%       | 285        | 135       | 63         | 483   | 59            |              |
|                          | 80–85%       | 355        | 193       | 106        | 654   | 54.3          |              |
|                          | 75–80%       | 391        | 284       | 117        | 792   | 49.4          |              |
|                          | 70–75%       | 219        | 239       | 109        | 567   | 38.6          |              |
|                          | Less than 70%| 169        | 187       | 160        | 516   | 32.8          |              |

¹ The Qiyaas test is a general aptitude test given to high school graduates to measure their analytical and deductive skills. It focuses on testing their capacity for learning in general regardless of any specific skill in a certain subject or topic. The test also measures abilities relevant to reading comprehension, recognizing logical relations, solving problems on the basis of basic mathematical notions, and inference skills.

² The Tahseli test is a scholastic achievement admission test. The test covers the general and key concepts in biology, chemistry, physics, mathematics, and English covered in the courses of the last three grades of high school. Questions vary in their focus on knowledge levels. Some questions measure comprehension, while others measure application and inference.

3.6. Preparatory Year

The preparatory year reported percentage was significantly associated with the RAP (X-squared = 1390, df = 12, \( p < 0.0001 \)) (Table 7). The respondents with a higher reported preparatory year percentage also reported higher academic performance. How the preparatory year was perceived significantly affected the RAP (X-squared = 55.011, df = 6, \( p < 0.0001 \)). Particularly, the respondents who did not attend this year reported highest academic performance followed by the respondents who were uncertain how beneficial it was. The lowest RAP was for the respondents who did not perceive the year as beneficial. Perceiving the preparatory year as beneficial for the English proficiency of the respondents was significantly associated with the RAP (X-squared = 52.55, df = 8, \( p < 0.0001 \)). More specifically, those who were uncertain if the year was beneficial for their English reported the highest academic performance.
Table 7. Summary results for the preparatory year factors. A bold $p$ value indicates a significant relationship between the related factor and the reported academic performance. Outstanding percentage is the highest RAP category divided by the same row total.

| Factor                      | Response                  | High  | Middle | Low  | Total | Outstanding % | $p$ Value |
|-----------------------------|---------------------------|-------|--------|------|-------|---------------|-----------|
| Preparatory year GPA        | 4.75–5                    | 897   | 181    | 20   | 1098  | 81.7          | <0.0001   |
|                             | 4.25–4.75                 | 507   | 353    | 101  | 961   | 52.8          |           |
|                             | 3.75–4.25                 | 136   | 291    | 105  | 532   | 25.6          |           |
|                             | 3.5–3.75                  | 29    | 127    | 89   | 245   | 11.8          |           |
|                             | 3–3.5                     | 20    | 95     | 137  | 252   | 7.9           |           |
|                             | Less than 3               | 15    | 38     | 101  | 154   | 9.7           |           |
|                             | Did not study             | 201   | 51     | 43   | 295   | 68.1          |           |
| Was the preparatory year    | Yes                       | 1231  | 824    | 413  | 2468  | 49.9          | <0.0001   |
| useful?                     | No                        | 296   | 218    | 128  | 642   | 46.1          |           |
|                             | Do not know               | 81    | 48     | 21   | 150   | 54            |           |
|                             | Did not study             | 216   | 53     | 42   | 311   | 69.5          |           |
| Did the preparatory year    | Yes, a lot                | 652   | 426    | 235  | 1313  | 49.7          | <0.0001   |
| improve your English?       | Yes, not too much         | 481   | 306    | 147  | 934   | 51.5          |           |
|                             | Yes, a little             | 283   | 235    | 104  | 622   | 45.5          |           |
|                             | No                        | 178   | 112    | 73   | 363   | 49            |           |
|                             | Do not know               | 225   | 63     | 46   | 334   | 67.4          |           |

3.7. Social Media Use

The most-used social media application factor was significantly associated with the RAP ($X^2 = 32.421, df = 8, p < 0.0001$) (Table 8). While comparable results were found between the other applications, the respondents who reported using YouTube more also reported lower academic performance. The number of hours using social media was not significantly associated with the RAP ($X^2 = 15.879, df = 10, p = 0.1032$).

Table 8. Summary results for the social media factors. A bold $p$ value indicates a significant relationship between the related factor and the reported academic performance. Outstanding percentage is the highest RAP category divided by the same row total.

| Factor                      | Response        | High  | Middle | Low  | Total | Outstanding % | $p$ Value |
|-----------------------------|-----------------|-------|--------|------|-------|---------------|-----------|
| Most used social media      | Facebook        | 138   | 54     | 36   | 228   | 60.5          |           |
|                             | Snapchat        | 578   | 360    | 193  | 1131  | 51.1          |           |
|                             | Twitter         | 611   | 421    | 167  | 1199  | 51            | 0.0001    |
|                             | Instagram       | 205   | 121    | 71   | 397   | 51.6          |           |
|                             | YouTube         | 279   | 182    | 133  | 594   | 47            |           |
| Number of hours spent on    | More than 4 h   | 648   | 424    | 207  | 1279  | 50.7          |           |
| social media daily          | 3–4             | 486   | 318    | 139  | 943   | 51.5          |           |
|                             | 2–3             | 346   | 192    | 133  | 671   | 51.6          |           |
|                             | 1–2             | 225   | 139    | 88   | 452   | 49.8          | 0.1032    |
|                             | Less than an    | 102   | 57     | 27   | 186   | 54.8          |           |
| hour                        | Do not use social media | 17   | 12     | 10   | 39    | 43.6          |           |

4. Discussion

This study aims to test the association of 32 diverse factors with the academic performance of undergraduate students in Saudi Arabia. Exploring the effects of these factors in Saudi Arabians particularly is important because education performance determinants can differ depending on the context [44].

In conclusion, the female students outperformed their male counterparts (Table 2). This result is consistent with the results found in other studies [45,46]. Contradicting the general finding here, Felder et al. [47] confirmed that male students outperformed their
female counterparts in engineering courses. Among other potential reasons, the authors of the latter study referred gender differences to match to instructional styles and the perceptions of students of their fit to their field of study.

The tested personal factors were significantly associated with the RAP (Table 3). Generally, only males are required to perform prayers in mosques in Islam. This is the reason why data from males only were collected for this variable (praying in mosques, Table 3). Students who have generally maintained their prayers in the mosques reported slightly higher performance than those who do not. Additionally, those who are keen to eat breakfast and are involved in extracurricular activities also reported higher performance. Personality type differences might explain the findings here. This factor (i.e., personality type) can determine the most appropriate learning style of students and, subsequently, affect education performance [48].

While surprisingly not observed for the mothers, only the students’ paternal education level and work field were significantly associated with the RAP (Table 4). Parental involvement in student education can lead to better performance, which was found in a meta-analysis of 52 studies by Jeynes [49]. In the context of Saudi Arabia, the relationship was detected only for the father potentially because he has generally more control over the children’s educational affairs in Saudi Arabian culture.

The preparatory year seeks to facilitate transitioning students from high school to university and to fill the gap in skills between the two levels. During this year, students must be equipped with the necessary skills and knowledge required to excel in their desired bachelor’s degree. Generally, the results found here support the effectiveness of this year (Table 7), which are also consistent with results found by the study of Knox [50] conducted in a Scottish context.

Pre-undergraduate credentials (high school graduation grade and grades in two standardized university entrance exams) were significantly associated with the RAP (Table 6). Supporting this pattern of results, Staffolani and Bratti [12] highlighted that the earlier academic achievements of students can be the most important determinant for their future education performance.

The types of intermediate and high school factors were also found to be significantly associated with the RAP (Table 5). Consistent in the two factors, the students who have graduated from religious, international, or overseas schools reported higher academic performance than those who have graduated from public or private schools. Moreover, the students who have graduated from the latter two school types reported comparable levels of performance. The education systems in private and public schools follow the same rules and are administrated by the Ministry of Education, and this could be the reason why there are no differences between the performances of those who are graduates of public and private schools. The effect of school type was found in other studies. For instance, Miller and Birch [15] and Anderton [45] asserted that students from government schools performed better than those from non-government schools in studies conducted in Australia.

The most-used social media sites factor was significantly associated with the RAP (Table 8). Among other tested social media sites, the students who reported using Facebook the most also reported higher academic performance (Table 8). Using data from 1165 Malaysian university students, Ainin et al. [51] also argued that Facebook use was also associated with higher reported performance. However, in a meta-analysis study involving data from more than 100 thousand students, Liu et al. [52] found a negative correlation between GPA and social media use. This correlation was found stronger among female students, but the study found a positive correlation with performance in language testing. For the integration of these findings, the effect of social media use on education performance might be moderated by factors such as the demands of the studied major and gender. Fields of study can differ in the types of demands they require from students. Social media use may strengthen (or weaken) certain skills required by a given area of study. Additionally, social media sites can differ in their cognitive demands and required skills.
This may explain the differences between social media sites regarding their relationship with education performance.

5. Conclusions

The current study examined the relationship of 32 diverse factors with the reported academic performance among the undergraduate Saudi Arabian students. While many findings were consistent with the findings found in other contexts, the study identified factors that might be unique to the Saudi Arabian context. For instance, while this was not found for the mothers, the students reported that performance was related to paternal credentials (education level and work field, Table 4). Another example is that students who graduated from international schools and overseas schools reported the highest performance, followed by religious schools, while students who graduated from public and private schools reported comparable performances (classification of school, Table 5). In addition, students who reported not having a tutor reported higher academic performance.

In summary, 20 factors were found to have significant relationship with the reported academic performance. Those factors were gender, university, college, praying in mosques, extracurricular activities, eating breakfast, paternal education level, paternal work field, family perceived financial status, residence, classification of intermediate school, classification of high school, tutor in school, high school graduation score, Qiyas test score, Tâhseî test score, preparatory year GPA, preparatory year overall usefulness, improvement of English in preparatory year, and most-used social media platform.

However, 12 factors were not found to have significant relationship with the reported academic performance. Those factors were paternal major, maternal education, maternal major, maternal work field, whether parents live together, parents follow-up on study, physical punishment by parents, number of siblings, rank among sibling, pre-school enrollment, classification of elementary school, and number of hours spent on social media daily. Last, the results from this study can be practically useful for parents, educators, and decision makers to focus on factors that can improve education outcomes.

6. Limitations and Future Directions

While this study has highlighted important “correlative” relationships, knowledge of causal relationships might be limited. For instance, the factor of praying in mosques was found to be significantly associated with the RAP. It is possible that because people who pray at the mosque were more diligent, they performed better academically. Another example might be the Ph.D. of the father (recall that we have found father education factor to be associated with the RAP; Table 4). Possibly, Ph.D. holders live in cities that offer better education; therefore, their children reported higher academic performance (i.e., it is not necessarily because of the Ph.D. of their father that they performed better). Moreover, some of the factors that were found significantly associated with the RAP might be correlated (e.g., paternal education level and work field, Table 4). In addition to this, the study was limited to four universities that are in major cities and did not consider universities in rural areas, which have different environments. Further, the study was limited to undergraduate students and have not considered graduate students whom might have different experiences.

In future studies, developing statistical models is crucial to better understand the impact of the factors examined here with the RAP. Additionally, from such models, effect size measures can be calculated to understand how much of the variability in the RAP is explained by each factor. Prioritizing the influential factors based on their impact level is practically important. This prioritization is useful to optimize resources (e.g., money, time, and effort) use. The current study identified factors that should be considered for building such statistical models particularly for the Saudi undergraduate students.

Future work might also consider studying the factors (i.e., RAP and the other factors of interest) as continuous instead of categorical variables. Continuous factors can provide more knowledge and show the shape of the relationship. For instance, the students who
reported themselves to be involved in extracurricular activities also reported higher RAP (Table 3). However, the former factor was a categorical factor with two levels (yes and no). Whether there is a cut-off point beyond which involving such activities can deteriorate performance is unclear.

Future studies can also include deeper analysis on, for example, why students who studied in private and public schools have comparable academic performance while students who studied in religious, international, or overseas schools reported higher academic performance. Such in-depth analysis can help educators and decision makers improve the education outcome of public and private schools.

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References

1. Principe, H.R. Factors Influencing Students’ Academic Performance in the First Accounting Course: A Comparative Study between Public and Private Universities in Puerto Rico. Ph.D. Thesis, Argosy University, Sarasota, FL, USA, 2005.
2. Fields, V. An Investigation into Factors Affecting Academic Success Associated with On-Campus and Off-Campus Living Experiences for African-American Undergraduate Students at Iowa State University. Ph.D. Thesis, Iowa State University, Ames, IA, USA, 1991.
3. Mushtaq, I.; Khan, S.N. Factors affecting students academic performance. Glob. J. Manag. Bus. Res. 2012, 12, 17–22.
4. Al-Ansari, A.; Al-Harbi, F.; AbdelAziz, W.; Abdelsalam, M.; El Tantawi, M.M.; ElRefaie, I. Factors affecting student participation in extra-curricular activities: A comparison between two Middle Eastern dental schools. Saudi Dent. J. 2016, 28, 36–43. [CrossRef]
5. Neemati, N.; Hooshangi, R.; Shurideh, A. An investigation into the learners’ attitudes towards factors affecting their exam performance: A case from Razi University. Procedia Soc. Behav. Sci. 2014, 98, 1331–1339. [CrossRef]
6. Al-Salloom, H. Education in Saudi Arabia, 2nd ed.; Saudi Arabian Cultural Mission to the U.S.A. Amane Publications: Beltsville, MA, USA, 1995.
7. Almala, A.H. Applying the principles of constructivism to a quality e-learning environment. Distance Learn. 2006, 3, 33–40.
8. Von Glasersfeld, E. Radical Constructivism: A Way of Knowing and Learning. Studies in Mathematics Education; RoutledgeFalmer: London, UK; New York, NY, USA, 1996.
9. Bruner, J.S. The Process of Education; Harvard University Press: Cambridge, MA, USA, 1977.
10. Vygotsky, L. The Collected works of LS Vygotsky. Problems of the Theory and History of Psychology; Rieber, R.W., Wollock, J., Eds.; Springer: Boston, MA, USA, 1997; Volume 3.
11. Yang, B. Toward a holistic theory of knowledge and adult learning. Hum. Resour. Dev. Rev. 2003, 2, 106–129. [CrossRef]
12. Bratti, M.; Staffolani, S. Student time allocation and educational production functions. Ann. Econ. Stat. 2013, 103–140. [CrossRef]
13. Ringland, C.; Pearson, S.A. Graduate entry to medical school: Testing some assumptions. Faculty of Medicine and Health Sciences. Med Educ. 2003, 38, 778–786. [CrossRef]
14. Huws, N.; Reddy, P.; Talcott, J. Predicting university success in psychology: Are subject-specific skills important? Psychol. Learn. Teach. 2006, 5, 133–140. [CrossRef]
15. Birch, E.R.; Miller, P.W. The influence of type of high school attended on university performance. Aust. Econ. Pap. 2007, 46, 1–17. [CrossRef]
16. Rhodd, R.G.; Schrouder, S.M.; Allen, M.T. Does the performance on Principles of Economics courses affect the overall academic success of undergraduate business majors? Int. Rev. Econ. Educ. 2009, 8, 48–63. [CrossRef]
17. McKenzie, K.; Schweitzer, R. Who succeeds at university? Factors predicting academic performance in first year Australian university students. High. Educ. Res. Dev. 2001, 20, 21–33. [CrossRef]
18. Graetz, B. Socio-economic status in education research and policy in John Ainley et al. Socio-economic status and school education DEET/ACER Canberra. J. Pediatric Psychol. 1995, 20, 205–216. [CrossRef]
19. Considine, G.; Zappalà, G. The influence of social and economic disadvantage in the academic performance of school students in Australia. J. Sociol. 2002, 38, 129–148. [CrossRef]
20. Humble, S.; Dixon, P. The effects of schooling, family and poverty on children’s attainment, potential and confidence—Evidence from Kinondoni, Dar es Salaam, Tanzania. Int. J. Educ. Res. 2017, 83, 94–106. [CrossRef]

21. Hanushek, E.A.; Peterson, P.E.; Tallepy, L.M.; Woessmann, L. The Unwavering SES Achievement Gap: Trends in Us Student Performance. Available online: https://www.nber.org/papers/w25648 (accessed on 21 July 2021).

22. Suriyadarma, D.; Suriahadi, A.; Sumarto, S.; Rogers, F.H. Improving student performance in public primary schools in developing countries: Evidence from Indonesia. Educ. Econ. 2006, 14, 401–429. [CrossRef]

23. Owen, V. Exploring beliefs about academic performance achievement. Uganda Educ. J. 1999, 2, 57.

24. Hijazi, S.T.; Naqvi, S.M.M. Factors Affecting Students’ Performance. Available online: http://bangladeshsoziology.org/BEJS%203.1%20Naqvi.pdf (accessed on 21 July 2021).

25. Carpenter, T.; Ansell, E.; Franke, M.; Fennema, E. Models of problem solving: A study of kindergarten children’s problem-solving processes. J. Res. Math. Educ. 1993, 24, 428–441. [CrossRef]

26. Cole, D.; Ahmadi, S. Reconsidering campus diversity: An examination of Muslim students’ experiences. J. High. Educ. 2010, 81, 121–139. [CrossRef]

27. Al Shawwa, L.; Abulaban, A.A.; Abulaban, A.A.; Merdad, A.; Baghlaf, S.; Algethami, A. Factors potentially influencing academic performance among medical students. Adv. Med Educ. Pract. 2015, 6, 65–75. [CrossRef]

28. Salem, R.O.; Al-Mously, N.; Al-Zalabani, A.H.; Al-Dhawi, A.F.; Al-Hamdan, N. Academic and socio-demographic factors influencing students’ performance in a new Saudi medical school. Med Teach. 2013, 33, S83–S89. [CrossRef]

29. Wooten, T.C. Factors influencing student learning in introductory accounting classes: A comparison of traditional and non-traditional students. Issues Account. Educ. 1998, 13, 357.

30. Baker, C.N. Under-represented college students and extracurricular involvement: The effects of various student organizations on academic performance. Soc. Psychol. Educ. 2008, 11, 273–298. [CrossRef]

31. Derous, E.; Ryan, A.M. When earning is beneficial for learning: The relation of employment and leisure activities to academic processes. Eur. J. Educ. Psychol. South Africa. 2017, 29, 1–17. [CrossRef]

32. Ayala, J.C.; Manzano, G. Academic performance of first-year university students: The influence of resilience and engagement. High. Educ. Res. Dev. 2018, 37, 1321–1335. [CrossRef]

33. Glass, R.; Li, S.; Pan, R. Personality, problematic social network use and academic performance in China. J. Comput. Inf. Syst. 2014, 54, 88–96. [CrossRef]

34. Alkhateeb, M.A. The Impact of Social Media on Students’ Academic Performance: A Case Study at the University of Jordan. Sci. J. King Faisal Univ. Humant. Manag. Sci. 2020, 21, 54–61. [CrossRef] [PubMed]

35. Kappe, R.; Van der Flier, H. Predicting academic success in higher education: What’s more important than being smart? Eur. J. Psychol. Educ. 2012, 27, 605–619. [CrossRef]

36. Ayala, J.C.; Manzano, G. Academic performance of first-year university students: The influence of resilience and engagement. High. Educ. Res. Dev. 2018, 37, 1321–1335. [CrossRef]

37. Ayala, J.C.; Manzano, G. Academic performance of first-year university students: The influence of resilience and engagement. High. Educ. Res. Dev. 2018, 37, 1321–1335. [CrossRef]

38. Coleman-Jensen, A.; Nord, M.; Singh, A. Household Food Security in the United States in 2011; BiblioGov: Washington, DC, USA, 2013.

39. Belot, M.; Ryan, A.M. When earning is beneficial for learning: The relation of employment and leisure activities to academic processes. Eur. J. Educ. Psychol. South Africa. 2017, 29, 1–17. [CrossRef]

40. Elsayead, M.; Said, A. A Study of the Relationship between Nutritional Status and Scholastic achievement among primary school students in Wadi Eldawasir City in Kingdom of Saudi Arabia. J. Med Pharm. Sci. 2020, 4, 57–82.

41. Brown, J.L.; Beardslee, W.H.; Prothrow-Stith, D. Impact of School Breakfast on Children’s Health and Learning: An Analysis of the Scientific Research; Sodexo Foundation: Gaithersburg, MD, USA, 2008.

42. Bailey, T.H.; Phillips, L.J. The influence of motivation and adaptation on students’ subjective well-being, meaning in life and academic performance. High. Educ. Res. Dev. 2016, 35, 201–216. [CrossRef]

43. Petersen, I.H.; Louw, J.; Dumont, K. Adjustment to university and academic performance among disadvantaged students in South Africa. Educ. Psychol. 2009, 29, 99–115. [CrossRef]

44. Mlambo, V. An analysis of some factors affecting student academic performance in an introductory biochemistry course at the University of the West Indies. Caribb. Teach. Sch. 2011, 1, 79–92.

45. Anderton, R.S. Identifying factors that contribute to academic success in first year allied health and science degrees at an Australian University. Aust. J. Educ. 2017, 61, 184–199. [CrossRef]

46. Mills, C.; Heyworth, J.; Rosenwax, L.; Carr, S.; Rosenberg, M. Factors associated with the academic success of first year health science students. Adv. Health Sci. Educ. Theory Pract. 2009, 14, 205–217. [CrossRef]

47. Felder, R.M.; Felder, G.N.; Mauney, M.; Hamrin, C.E., Jr.; Dietz, E.J. A longitudinal study of engineering student performance and retention. III. Gender differences in student performance and attitudes. J. Eng. Educ. 1995, 84, 151–163. [CrossRef]

48. Borg, M.O.; Shapiro, S.L. Personality type and student performance in principles of economics. J. Econ. Educ. 1996, 27, 3–25. [CrossRef]

49. Jeynes, W.H. The relationship between parental involvement and urban secondary school student academic achievement: A meta-analysis. Urban Educ. 2007, 42, 82–110. [CrossRef]
50. Knox, H. Making the transition from further to higher education: The impact of a preparatory module on retention, progression and performance. *J. Furth. High. Educ.* 2005, 29, 103–110. [CrossRef]

51. Ainin, S.; Naqshbandi, M.M.; Moghavvemi, S.; Jaafar, N.I. Facebook usage, socialization and academic performance. *Comput. Educ.* 2015, 83, 64–73. [CrossRef]

52. Liu, D.; Kirschner, P.A.; Karpinski, A.C. A meta-analysis of the relationship of academic performance and Social Network Site use among adolescents and young adults. *Comput. Hum. Behav.* 2017, 77, 148–157. [CrossRef]