

## **Analysis of the Factor's Student Dropout in the Faculty of Engineering and Informatics at UASF from 2016 to 2023**

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### **Abstract**

*This study investigates the multifaceted issue and factors of student dropout in the Faculty of Engineering and Informatics at UASF during the period 2016-2023. Through an extensive analysis of various factors, including academic, socio-economic, and institutional variables, this research aims to identify the underlying causes that lead to student bullying. Using a comprehensive database, statistical methodology, and qualitative insights, this paper shows all the factors that influence student persistence and identifies possible strategies to mitigate dropout rates. The findings of this study have implications for higher education institutions aiming to increase student success and retention. This is a phenomenon that many countries are facing, and it is very disturbing not only for the university career of students but also for institutions and society in general. During the last eight (8) years, a significant number of students have dropped out of this Faculty, and we have identified several factors that have influenced young people to drop out. The high rate of dropping out of the programs in the Faculty of Engineering and Informatics affects the lack of professionals in these fields and negatively affects the global economy of the country. The phenomenon of students dropping out of school is a serious problem in education at the university level in Kosovo and in many other countries. Dropout prevention is a major challenge for university education and for society in general. Therefore, discovering the underlying factors that influence student dropout is an essential step in preventing student dropout. The main reasons given by students for such dropout blah blah blah. This research suggests possibilities for reducing the dropout rate by updating curricula, using contemporary literature of recent years, applying modern teaching methodologies, improving laboratories, and improving student services through the self-service terminal.*

**Keywords:** *Student Dropout, Higher Education, Engineering and Informatics, Factors and Socio-economic.*

### **1. Introduction**

The issue of student dropouts continues to be a significant challenge for higher education institutions around the world. As such, this study focuses on the research of all the factors

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that contribute to the dropout of students within the Faculty of Engineering and Informatics at the UASF during the period from 2016 to 2023. Understanding the complexity of this issue, institutions must design a strategy to promote student success as well as to improve general conditions to retain students.

Studies in engineering and informatics in Kosovo are offered at the Faculty of Engineering and Informatics (FII), which is part of the University of Applied Sciences in Ferizaj (UASF). UASF has an academic life of 47 years, while as a University it was founded in 2015, i.e. eight years ago. From the academic year 2015/2016 to the academic year 2020/2021, FII developed a bachelor program (six semesters) including 180 ECTS credits: Industrial Engineering with Informatics and a Master program (four semesters) including 180 ECTS credits: Engineering and Informatics (further changed to Engineering and Production Management). In the academic year 2021/2022, we started with the new program called Applied Informatics, which also has 180 ECTS credits. All these programs were fully in line with Bologna Statement **Error! Reference source not found.**

From 2016 to 2023, the selection of students to be enrolled in the bachelor study programs at FII is based on three criteria: prior achievement as measured by high school success (30%), the scores of the state matriculation exam (30%), and the scores of the entrance exam in mathematics, physics, and chemistry entrance exam scores (40%).

Many countries are facing the student dropout phenomena. By studying this phenomenon in different countries, dropout is much lower in countries with systems that use the selective admissions system in higher education than in countries that do not use the selection system, that is, through admission tests. Many universities are interested in the quality of students, while others pay more attention to the quantity of students **Error! Reference source not found.** Faculty abandonment is an international phenomenon that negatively affects students, their families, professors, and society in general **Error! Reference source not found.** and **Error! Reference source not found.**

This is one of the reasons that Spain is making institutional reforms, to re-evaluate its educational system and examine the dropout phenomenon, as part of new social needs. **Error! Reference source not found.** proved that students drop out or change their profile due to factors related to their psychological profile, as well as their personal and family histories. This phenomenon is tried to be hidden with the increase in the number of students admitted to universities. This does not give good results because, since the increase in the number of admissions does not reduce the risk of dropping out, but on the contrary, it increases the possibility that more students drop out and delay the completion of the professional diploma **Error! Reference source not found.**

Recently, the abandonment in the field of engineering has been a phenomenon that has appeared not only in Kosovo but also in many other European countries, such as in England **Error! Reference source not found.**, Latvia **Error! Reference source not found.**, Spain **Error! Reference source not found.**, **Error! Reference source not found.**, **Error! Reference source not found.**, and Estonia **Error! Reference source not found.** Dropping out of school has a great negative impact on the emotional state of students and may result in involuntary transfer to other study programs during the following academic year, permanent interruption of studies. Also, dropping out of school has negative impacts on society. Dropping out of school can be related to the challenges that students may have in the transition and adaptation to their new academic context **Error! Reference source not found.**, **Error! Reference source not found.**

Dropping out of school phenomenon is very complex, especially when dropping out occurs during the first year of study **Error! Reference source not found.**, **Error! Reference source not found.** However, this becomes even more complex when dropouts occur during the second or third year of study. To prevent student dropout, the contributing factors must be understood **Error! Reference source not found.** The reason

for students dropping out of university education is very complex and influenced by several variables. Based on the report in **Error! Reference source not found.**, there are several factors that influence student dropout in Germany. The most common reason is not one factor but a combination of them. In **Error! Reference source not found.** latent class analysis was used to identify students who dropped out of school. The results show that students drop out for various reasons, starting from study programs in universities, socio-economic factors, student performance, academic self-concept, and the intention to drop out of high school. In the paper **Error! Reference source not found.**, the factors influencing student dropout in Spain are observed based on sociodemographic and academic variables. The purpose of selecting this variable is not clearly explained, but the research results show that this variable has an important effect.

In **Error! Reference source not found.** the variables influencing student dropout in Colombia are demographic data and student transcripts. These variables are used to predict students who drop out, and the resulting variables most affect students who drop out. **Error! Reference source not found.** also investigated the predictors of dropout in the United States. In this study, the variables used to predict dropout were information from prior schooling, demographics, college enrollment, and semester information. Even here, the reasons for selecting these variables for predictions are not clearly explained. Based on the results of the analysis, the selected variables predict very well the dropout rate of students. Authors Troelsen and Laursen we **Error! Reference source not found.** observed the factors that influence students who drop out of school in Denmark. According to them, two hypotheses affect students who drop out of school.

## 2. Materials and Methods

In this paper, the reasons for dropping out of studies at the Faculty of Engineering and Informatics (FII) from 2016 to 2023 are analyzed. To collect appropriate data, all students who had dropped out of their FII studies from 2016 to 2023 were invited to complete a questionnaire designed to analyze the dropout process and the reasons for such a decision. The quantitative method for data collection was chosen using as a questionnaire research tool with structured questions. The questions addressed tackled topics about the factors that lead to the dropout phenomena. There were seven (7) questions in total. The number of students enrolled at FII in all three study programs at FII from 2016 to 2023 was 569. There were 113 abandoned students, of which 27 were female and 86 were male. This data is obtained from SMU's university management system. To allow electronic responses, a questionnaire was created in the form of office 365 and sent to all these students studying under SMU. The link where students can access this questionnaire has been sent to you via viber from phone numbers that have been in SMU from May 15, 2023, to August 31, 2023 to collect voluntary responses and received responses were retained anonymous and confidential.

The questionnaire was sent to all 113 students regardless of gender, age or study program, but only 30 of them answered this questionnaire. Phone numbers obtained by SMU in many cases have not been valid because students have changed numbers during this time.

In table 1 you can find the number of enrolled students and drop out student's number from 2016 to 2023 in the three programs of the Engineering and Informatics Faculty.

Table 1. Enrolled students and drop out students from 2016 to 2023 in the three programs of the Engineering and Informatics Faculty

Faculty of Engineering and Informatics from 2016 to 2023						
Programs	Enrolled students			Dropout students		
	F	M	Total	F	M	Total
Academic Year 2016/17						

Bachelor - Industrial Engineering and informatics	12	26	38	5	9	14
Master - Engineering and Informatics	0	0	0	0	0	0
Total	12	26	38	5	9	14
Academic Year 2017/18	F	M	Total	F	M	Total
Bachelor - Industrial Engineering and informatics	13	42	55	3	12	15
Master - Engineering and Informatics	0	0	0	0	0	0
Total	13	42	55	3	12	15
Academic Year 2018/19	F	M	Total	F	M	Total
Bachelor - Industrial Engineering and informatics	25	33	58	12	16	28
Master - Engineering and Informatics	0	0	0	0	0	0
Total	25	33	58	12	16	28
Academic Year 2019/20	F	M	Total	F	M	Total
Bachelor - Industrial Engineering and informatics	18	35	53	2	23	25
Master - Engineering and Informatics	5	6	11	0	0	0
Total	23	41	64	2	23	25
Academic Year 2020/21	F	M	Total	F	M	Total
Bachelor - Industrial Engineering and informatics	17	34	51	2	13	15
Master - Engineering and Informatics	18	23	41	0	0	0
Total	35	57	92	2	13	15
Academic Year 2021/22	F	M	Total	F	M	Total
Bachelor - Industrial Engineering with informatics	13	33	46	3	10	13
Bachelor - Applied Informatics	9	32	41	0	0	0
Master - Engineering and Informatics	27	17	44	0	1	1
Total	49	82	131	3	11	14
Academic Year 2022/23	F	M	Total	F	M	Total
Bachelor - Industrial Engineering with informatics	12	32	44	0	2	2
Bachelor - Applied Informatics	25	34	59	0	0	0
Master - Engineering and Production Management	11	13	24	0	0	0
Total	47	84	131	0	2	2
Grand Total	204	365	569	27	86	113

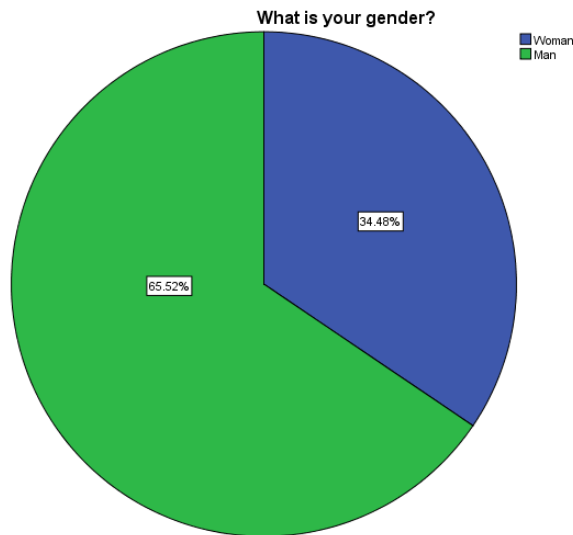
### 3. Results and Discussion

The analysis reveals many factors that contribute to the dropout of students at the Faculty of Engineering and Informatics at UASF. The results of the study highlight the interplay between academic, social, and economic factors that influence student persistence. Socio-economic inequalities, insufficient preparation in pre-school and lack of academic counseling appear as the main contributors to student dropout. Furthermore, the study

highlights the importance of designing early intervention strategies and services aimed at supporting and addressing these challenges in the best possible way. The data presented in the questionnaire provides valuable insights into the factors contributing to student dropout in the Faculty of Engineering and Informatics at UASF from 2016 to 2023.

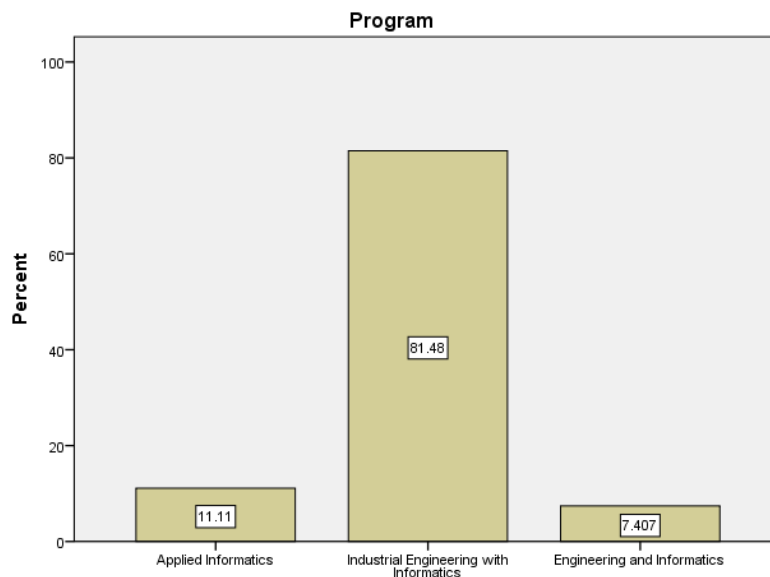
Let's analyze all the answers to the questionnaire:

1. What is your gender?



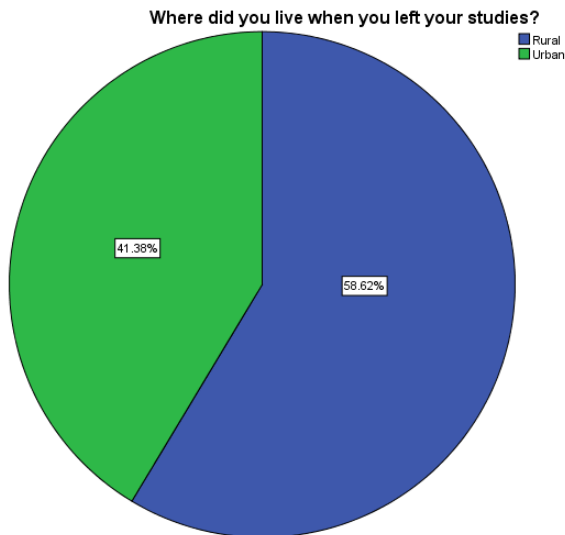
The majority of respondents were male (19) compared to female (10). This gender distribution might indicate that male students are more prone to dropout in this specific faculty during the given period.

2. In which Study Program of the Faculty of Engineering and Informatics did you study



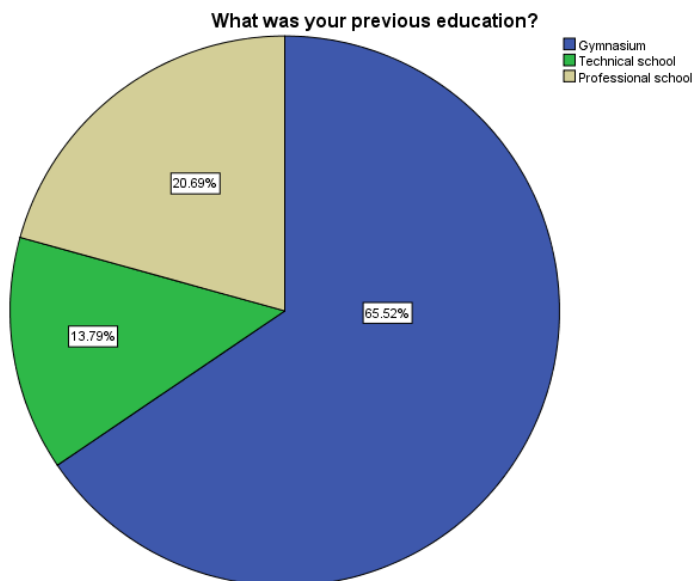
Most respondents were enrolled in the Bachelor of Industrial Engineering with Informatics program (22), followed by Bachelor of Applied Informatics (3) and Master of Engineering and Informatics (2). The high dropout rate in the Industrial Engineering program warrants investigation into program-specific factors contributing to dropout.

3. Where did you live when you left your studies?



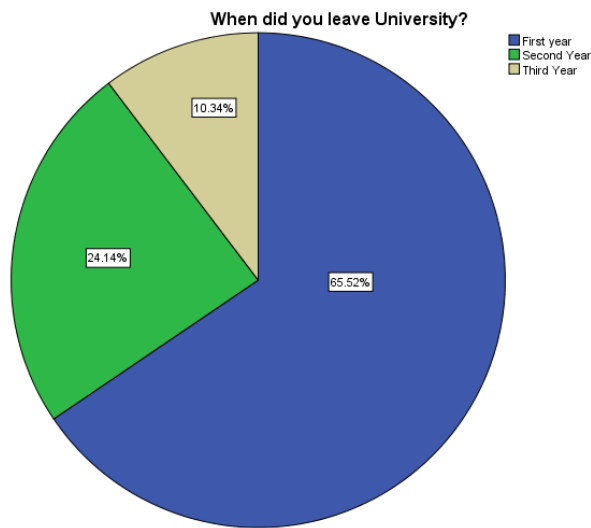
More respondents came from rural areas (17) compared to urban areas (12) when they left their studies. This could hint at a potential correlation between the student's background and dropout rates. Rural students might face different challenges or have different support structures.

4. What was your previous education?



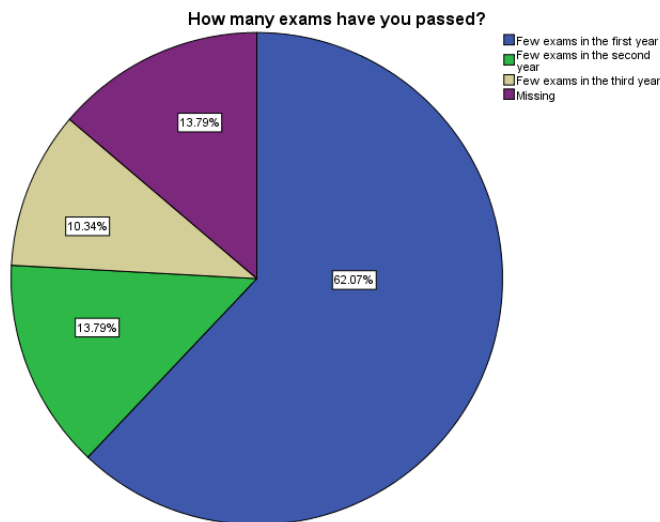
The majority of respondents had completed Gymnasium (19) as their previous education. This could suggest that students with a strong academic background are also experiencing dropout, which might be linked to other factors within the faculty.

5. When did you leave university?



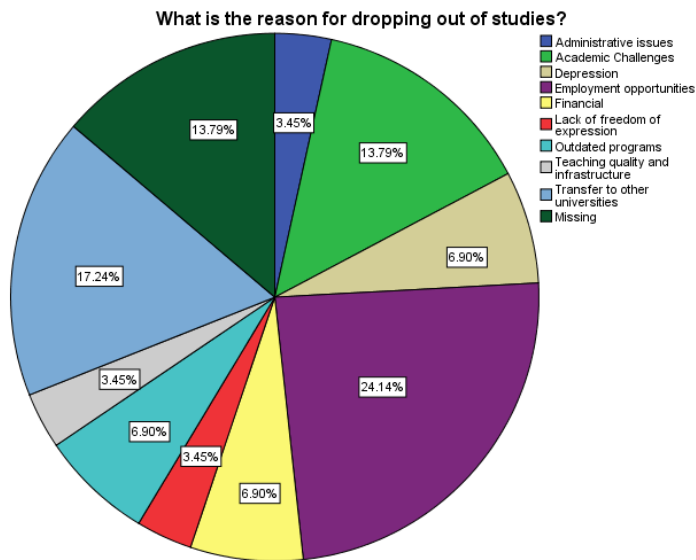
The highest number of dropouts occurred in the first year (19), followed by the second year (7) and the third year (3). The high number of first-year dropouts raises questions about the transition process from high school to university and the support mechanisms in place during the initial year of study.

6. How many exams have you passed?



A significant number of students (18) reported passing only a few exams in their first year, which might indicate academic challenges or difficulties adjusting to university life.

## 7. What is the reason for dropping out of studies?



Answers to students for the reasons for abandoning their studies in FII at UASF from 2016 to 2023 are diverse. These reasons can be categorized into several main themes:

**Administrative issues:** Some students mentioned administrative inefficiency, especially the slow delivery of services to students. This suggests the need for administrative improvements to improve the overall student experience. At UASF, a self-service terminal has been installed, which currently offers students the opportunity to obtain a grade certificate as well as the verification that they are a student at any time. In the future, this terminal will offer the reception of all necessary documents for students. It is worth noting that this terminal was built by the students of UASF University.

**Outdated programs:** A common concern was the lack of program and curriculum updates in line with industry development trends. This shows the importance of adapting curricula to industry needs to keep programs up to date as well as attractive to students.

**Teaching quality and infrastructure:** Factors such as the quality of professors, classroom noise, and the desire to switch to another field (eg computer science) influenced some students. Improving the quality of teaching and classroom environments is essential for student retention. UASF usually holds various trainings for the academic staff for the development and perfection of teaching.

**Transfer to other universities:** Some students left to pursue their studies at other universities, indicating that competition between institutions can affect student retention. As a university, we work hard to be competitive in Kosovo, and the large number of people interested in registering with us shows that we are among the most sought-after universities in the region.



**Mental health issues:** Depression and lack of perspective were cited as reasons for dropping out. Student support and the provision of career guidance and counseling services are essential to address these issues.

**Employment opportunities:** Finding a job or financial problems were factors in some students' decisions. Providing career support and addressing financial challenges can help retain students.

**Lack of freedom of expression:** Some students felt that they lacked freedom of expression during lectures. Encouraging student participation and engagement can enhance the classroom experience. As a University, we aim for the teaching method with the student at the center in order to give more space to the students during the lectures, as well as for the students to learn from each other.

**Importance of Curriculum:** Students mentioned that the curriculum lacked up-to-date technologies and needed more recent advancements. Annually updating the curriculum to meet industry standards is vital.

#### **4. Conclusion**

In conclusion, this data suggests that student dropout in the Faculty of Engineering and Informatics at UASF is influenced by various factors, including gender, study program, residential area, previous education, year of study, and examination progress. To address this issue effectively, further research and analysis are required to identify the specific causes and correlations associated with these factors. Implementing targeted interventions, such as academic support programs, mentorship, and early identification of struggling students, could help reduce dropout rates and improve student retention within the faculty. Additionally, a qualitative study involving interviews or focus groups with dropout students may provide deeper insights into their experiences and reasons for leaving the university, facilitating more tailored interventions.

To reduce dropout rates and improve student retention, the following measures are recommended:

- Increase administrative efficiency and service delivery to promptly meet student needs.
- Continually update programs and curricula to align with industry developments.
- Improve the quality of teaching and create conducive classroom environments.
- Fostering a competitive and attractive academic environment to retain students.
- Provide career guidance and counseling services.
- Implement academic support programs to help struggling students.
- Encourage student participation and engagement during lectures and to apply the education system with the student in the center
- Update the curriculum once a year to incorporate the latest technological advances.
- By addressing these factors, the Faculty of Engineering and Informatics can work toward reducing student dropout rates and providing a more supportive and complete educational environment for all students.

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