



Using AI in Scheduling Courses Registration Timetables to Reduce the Challenges in University Systems

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ARTICLE INFO

Keywords:

AI; Scheduling Courses;
Registration Timetables;
University Systems.

Received: Jan, 02, 2024

Accepted: Jan, 30, 2024

Published: Feb, 12, 2024

ABSTRACT

The registering for courses and the registration department are facing some issues and challenges in making the registration process or the enrolling process smooth. The registration department is the most important part of the student's journey. The student should plan his graduation by deciding what courses to register for each semester. As the number of students increases, there is some lack of sections, and it's becoming harder to manage all these requests in a short time. As the registration department is getting a lot of graduating students, there are not enough sections for the graduates, and the technique of registering the courses for students is still not updated due to the huge number of students who are enrolling, so the students start registering early, and some students are having trouble registering for courses through the college app. This study aims to investigate the effect of the number of students and class sections on the registration process. This research has been conducted with information based on data collected from three randomly selected universities located in the UAE. The sample that has also been chosen for the study is 150 students using the probability sample technique. The way applied to the selection of the sample was based on important variables such as the different students' genders and nationalities, as well as the different groups ages. The research study highlights the existence of obstacles in the course registration process, which has a detrimental impact on the academic performance of employees at institutions in the UAE. Nevertheless, UAE institutions are currently facing issues that can be effectively addressed by efficient management and adherence to organizational directives.

1. INTRODUCTION

Registration for the courses has been easy in the past few years. However, among these years, it's becoming a little bit harder. Every semester, the student should register for their courses before the semesters begin. On the week of ADD/Drop, the registration or enrolling in the courses is becoming harder [1]–[4]. A lot of new students are enrolling at the university, so the number of students is increasing and the challenges of registering for courses each semester are increasing[5]–[8]. The registration department is developing new ways to

make the registration process smoother and easier, but there are still some challenges that the department is facing each new semester, and as the number of students increases, they should improve some new ways to help the students avoid missing the registration just for some missed documents, full sections, or missed deadlines [9]–[12]. The skills of the registrar team in making the process of registering less challenging and making it smoother are highly recommended, but if there is no new updating and moderating to the overall

process, there will be issues faced by the students and the employees [13]. The registering for courses and the registration department are facing some issues and challenges in making the registration process or the enrolling process smooth [14]–[17]. Registration Department is the most important part of the student's journey, the student should plan his graduation on what courses to register for each semester and as the increasing in the number of students there is some lack in the sections and it's becoming harder to manage all these requests in short time, as the registration department is getting a lot of graduating students, and there is no enough sections for the graduates and the technique of registering the courses for students are still not updated due to the huge number of students who are enrolling so the students starts registering early and some students are having troubles in registering for courses through the college app because of academic Block on his university account caused by missed documents that he didn't submit to the registration team, such as a passport or visa copy, which will delay and miss his sections, which will be fully booked [18]–[21]. From that point of view, we came out with the research questions:

Research follows after analyzing the following questions:

Is the number of students affecting the registration process?

Is the number of classes sections affecting the registration process?

Is the block that the student may get affecting the registration process?

2. LITERATURE REVIEW

The registration department is one of the biggest departments in the university and the department holds many important tasks that the student mainly is depending on it. So, the registration process management is highly needed for every university and college or any high education institution to achieve those smooth ways for the student's registration process [22].

The responsibilities of a registration department can range from guiding students to schedule, planning and organize the schedules of classes and exams, register for classes to ensure that the students' academic performance fulfills graduation requirements.

According to [23]–[25] in the research that he did in the evolving role of registrar, that newly and by 2000, it's becoming more better that the adopting of new technologies was highly needed to be implemented on order to meet the large and huge of people that is encouraged to study, all of these students should be maintained and registrar is responsible for all the tasks needed such as credentials and academic records not only registering courses, so there should be some new technologies adopted to enhance the process of registering for courses [26].

10According to [27] on his journal there is many studies that proof the relationship between the load and stress on the work and the performance of the employees, and it has advantages and disadvantages, also [28]–[31] mentioned that if the employee is stressed and has a lot of work load then the performance will be also low. This is a real example that the load and the huge number of students and their requests will affect on the registration process and the performance of registration tam.

According to the interview with [32]–[34], and her information that she provided as she is a registration officer, City University College, the classes sections can affect the registration process by delaying some students graduation because there is no enough seats in the offered sections of Capstone course for example, this will lead in repeating and waste the time of the employees for the same student to come for next semester to register for the capstone [35]–[37]. As well the number of students who will request to open a new section of the same course will take time and effort from the registrar team because they will need to take the management approval to take an exception and open it, all of these requests will take effort and time that can be placed in helping other students and reply to their inquiries [38]. So there should be prepared and open sections previously in order to take the largest possible number of students which will reduce the number of complains and requests and make the registration process more easier and smooth [27], [39], [40].

As per research the fully booked and fewer number of sections will affect the registration process but what to do when the student faced this issue? They can visit the registration department daily because sometimes students drop their courses during the add/drop period or after that period, but this will

be a reason in deducting late registration fees, also there is waiting lists provided by the registrar so you have multiple chances the backup options [41]. However, talking to the supervisor and discuss with him the alternative options will help also, but at the end, registrar should be providing enough sections for all the students.

According to [1], [2], [42], [43] on the mentioned journal, the processing of registration is sometimes affected by the academic block that the students may get because of the missed documents from his side, this will be delaying the enrolling of the student to his courses, and according to the journal it will affect his CGPA and there is relationship between the delaying of registering and enrolling to the courses and the CGPA of the student because when he join the class late there will be some missed classes, which will affect his learning information which will also lead to bad academic record on sometimes failing in the course, in that situation there should be a process improved b registration that will help the student to be notified of ant missed documents from his side before the semester begins so he don't get delayed [5], [6], [44], [45].

According to [7], [8], [46], [47] interview, the registrar officer at Dubai University, when the student has some issues because he didn't submit one of the required documents [9], [12], [48], [49] we are not giving him a block of registration but instead we can notify him to submit these documents in order to not delay his certificate process when graduating, this will help the student to use the full usage of the new moderating systems such as enrolling to courses through the university app to register his courses each semester on time, and join the classes from the first day, which will result in doing and applying the registration process smoothly, dividing the tasks so all the requests of student didn't show on short time, and start updating the system for each student who renewed his passport among the semester.

Based on this, the following hypothesis are investigated in this study:

H1: The number of students has a significant effect on the registration process.

H2: The number of classes sections has a significant effect on the registration process.

H3: The academic block that the student may get has a significant effect on the registration process.

3. METHODOLOGY

This research has been conducted with information based on data collected from three randomly selected universities located in the UAE. The sample that has also been chosen for the study is 150 students using the probability sample technique. The way applied to the selection of the sample was based on important variables such as the different students' genders and nationalities, as well as the different groups ages. The quantitative data collection will be done as a questionnaire that should be detailed and prepared among the students and distributed to identify exactly what issues the students are facing and what problems they are having during the registration period or process and to get feedback from them. However, the data that has been collected was arranged and tested in a table, and the data were analyses using simple percentages. Hypotheses were taken and analyzed by the chi-square method. The level of significance is $\alpha=0.05$ at 5%.

The research data to be collect with questionnaire. So, the personal data of the students who will be responding are not collected or required. The students need only to respond to the questionnaire. If there are other details of the students should be confidential and secret to respect them. So, all the details of student and data are anonymously entered using Google forms. But also, there is ethical steps considered with the research and it's as follow:

The rule of the research is to study the issues that the students are facing in United Arab Emirates universities while the registration process, So identifying and knowing the problem and look for a solutions for it and what useful new techniques will be applied in order to make the research useful for universities and colleges and higher education institutions and to know more about what to improve in the registration process and department to make the process or enrolling more easy and smooth [15], [50]–[52].

The participant surely is informed before the data collection and taking their consent.

All the information will clearly explain to the participants, also there will be no hidden objectives, exaggeration, deception with the research, no wrong or false information to be shared about the objective of the research.

The questions used in the questionnaire are simple and it's not aiming for any psychological, physical and will not be causing other harm, also research will not take any private and sensitive data from the responds [16], [53]–[55].

Using the questions style, it will not cause and harm to the research or the students

The quick questionnaire included 10 questions related only to the research

The data of the students are not required; each student can anonymously enter his response through the form without any personal details.

For a better confidentiality no one can access the responses of the students except the authorized. The research is aiming not to share, take any identity, documents, pictures, or any official identification documents from participants and it will not be released [18], [20], [54], [56].

The questionnaire of the research will aim only on the topic and the student's issues related to the topic, students can say and answer whatever they feel it's correct with a feel of confidentiality which will result in more realistic answers [23]–[25], [57].

The research will follow quantitative data collection which will be focusing on testing, and hypothesis and this should be explained clearly to the participants.

To conduct effective research, data was collected by applying a non-probability sample. A non-probability sample is a sampling strategy in which responses are collected depending on the research's evaluation, not a random assortment. So, far less restrictions approach [3], [5]–[7]. This approach is employed in the study of the research because it's primarily dependent on the investigator's experience, and the reason for choosing non-probability sampling is that there is no specific list of names of the students who are registered or graduated from these selected universities in order to choose any other sampling method, such as probability sampling [8]–[11]. This is the reason for choosing non-probability sampling; it will be the best suitable method of sampling available for the research. A convenience sampling was selected and used that the researcher will pick for samples to conduct and make the research as the frame of sampling irrelevant. Correspondingly, it's easier to recruit

and analyze for research; it has also been chosen for cost and availability of time. A sample of 25 respondents was gathered to do valuable research. To collect the information and data needed to conduct the research, I used a questionnaire approach. The questionnaire used has two important parts: one for the demographics and the other for the research-based questions. The questionnaire has been designed based on a past examination of similar literature and previous studies [27]. A scale of 5 points was chosen for the questionnaire. Google Forms were used to conduct the questionnaires because they were easier and all participants could access them. The questionnaire that has been designed includes all the information desired and data needed to conduct effective research [17]–[20]. Kindly check Appendix 1 to see the questionnaire. The questionnaires were filled out by 25 respondents, making the sample size 25. The method of the questionnaire was selected because it's the most convenient method for data collection [1], [2], [4]. A questionnaire method was used for the data collection. It was the most convenient method, which is why we selected it for the collection of the research-based data. Also, face-to face mode was used for data collection because it helped the researcher receive better and higher response rates. Cross-sectional data was collected in order to conduct effective research. [21], [23]–[25] These studies are selected because it provides empirical research that proves and investigates the information and statistics on effects factors that are combined at the same time in 1 point with the time with a one-population research sample, or a ready-defined section of the sample population (Kruskal). The research will get all the aspects of the data over the point of the period, also because of the time and cost, which are the best options to be selected cross-sectional. The purpose of conducting the research is to check and determine the challenges that students are facing while registering their courses and the challenges that they get during the period of add/drop and registering, and if it's influencing the performance of the registration department team, this is providing a pure image of what the relationship is between the research variables.

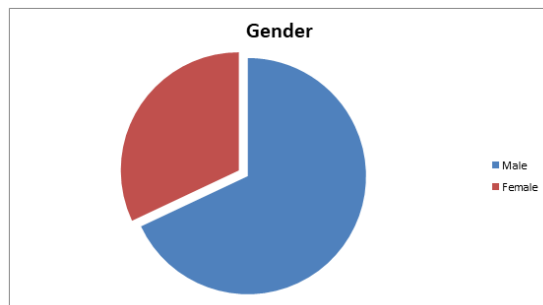
Casual research is conducted because there is a need to test the reasons for the challenges that the students are facing during the registration period and their impact on the employee’s performance [12], [14]–[16]. The research will aim to find out the challenges and reasons students are facing in the UAE’s universities. This casual explanation of research will provide a brief and pure description of the topic of the research.

4. DATA ANALYSIS AND DISCUSSION

Authors employ data analytics, methods, and methodologies to obtain concise data insights.

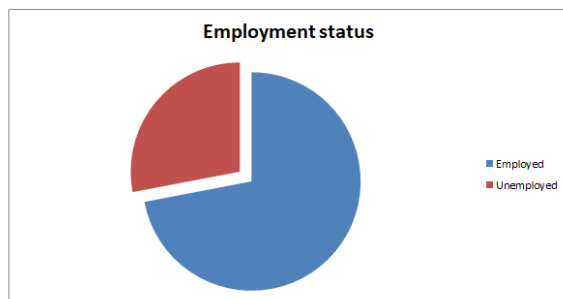
	Frequency	Percent	Valid Percent	Cumulative Percent
Male	17	68	68	68
Female	8	32	32	100
Total	25	100	100	

It's showing that 68 % of respondents were Males while 32 % were Females.



Employment status

	Frequency	Percent	Valid Percent	Cumulative Percent
Employed	18	72	72	72
Unemployed	7	28	28	100
Total	25	100	100	



Employment status shows that 72% are employed and 28% is unemployed.

The mean represents the arithmetic average of the collected data. The displayed average of the variable indicates that the students acknowledge encountering difficulties when enrolling for

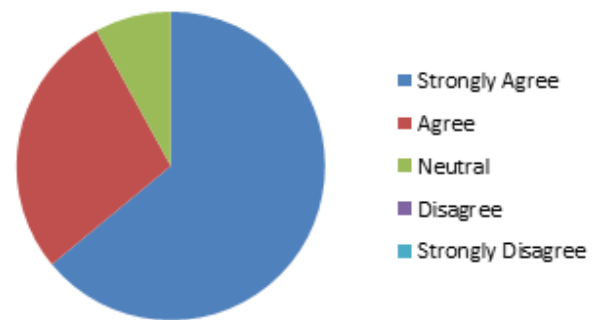
courses at institutions in the UAE while they are pursuing their studies there. The standard deviation measures the extent of variability in the data around the mean. The standard deviation measures the degree of dispersion of data points from the mean, indicating the level of consistency in the data.

The frequency distribution reveals that the company, PR Kenyon, has had a mishap, as follows:

RQ1. Number of students affecting registration process

	Feedback	O
Mean	4.56	0
Variance	0.423333333	0
Observations	25	2
Hypothesized Mean Difference	3	
df	24	
t Stat	11.98818316	
P(T<=t) one-tail	6.3781E-12	
t Critical one-tail	1.71088208	
P(T<=t) two-tail	1.27562E-11	
t Critical two-tail	2.063898562	

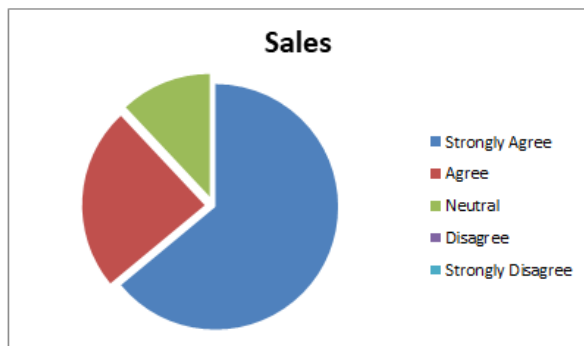
Sales



The data presented above indicates that 64% of the students hold a strong belief that the registration process is being affected by the quantity of students, resulting in potential delays. Additionally, 28% of the students agree with this notion, while 8% remain neutral.

RQ2. Number of classes sections affecting registration process

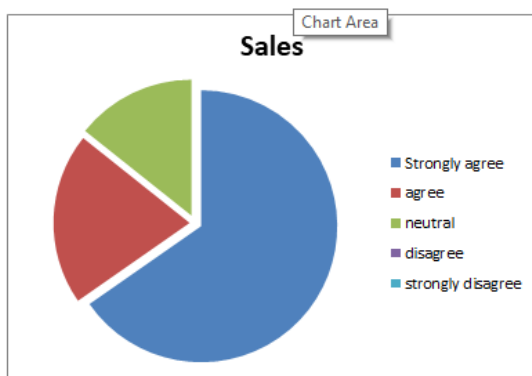
	Feedback	0
Mean	4.44	0
Variance	0.59	0
Observations	25	2
Hypothesized Mean Difference	3	
df	24	
t Stat	9.373601591	
P(T<=t) one-tail	8.56043E-10	
t Critical one-tail	1.71088208	
P(T<=t) two-tail	1.71209E-09	
t Critical two-tail	2.063898562	



The data presented in the table indicates that 64% of the public strongly agrees, 24% agrees, and 12% remains neutral.

RQ3. Is the block that student may get affecting the registration process

	Feedback	0
Mean	4.52	0
Variance	0.51	0
Observations	25	2
Hypothesized Mean Difference	3	
df	24	
t Stat	10.64212864	
P(T<=t) one-tail	7.19022E-11	
t Critical one-tail	1.71088208	
P(T<=t) two-tail	1.43804E-10	
t Critical two-tail	2.063898562	



The data presented in the table indicates that 64% of respondents strongly agree, 20% agree, and 14% remain neutral.

5. RECOMMENDATIONS

The research study highlights the existence of obstacles in the course registration process, which has a detrimental impact on the academic performance of employees at institutions in the UAE. Nevertheless, UAE institutions are currently facing issues that can be effectively addressed by efficient management and adherence to organizational directives. Here are some suggestions to address the difficulties that students are now encountering:

- The universities should employ and train more employees to enhance the process of registration.
- Employ more instructors to open more classes sections which will be enough for the students in order to not face any shortage
- Establish new policies to receive any updated documents or identifications from the students without giving them BLOCK from registration.
- Coordinate a training session to give the registrar team more experience in registration issues solving.

6. CONCLUSION

According to the research study, there are barriers in the course registration procedure that negatively affect employees' academic performance in UAE-based schools. However, the institutions in the United Arab Emirates are currently dealing with problems that can be resolved with competent administration and following organizational guidelines. The universities want to hire and educate more staff members to improve the registration procedure. The study finds that universities need to hire more teachers to establish more sections of lessons that will be sufficient for the students so that there is never a shortage. There is a need to create new guidelines for accepting any updated identity or documentation from students without preventing them from registering. Organizing a training session will provide the registrar team with greater expertise in resolving registration-related concerns.

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