Empowering the Educational Journey: Effective Strategies for Student Satisfaction and Retention in Higher Educational Institutions

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Abstract

Student retention is a serious concern for educational institutions. Our study examines the factors influencing students' satisfaction and their decisions to either remain enrolled or drop out. In this study, we employed quantitative methods, incorporating a survey questionnaire, and statistical software to evaluate the impact of independent variables (such as registration system, administration, curriculum, scheduling, teaching and learning, classrooms, technical support, and services) on the dependent variable (i.e., student satisfaction and retention). This study discovered a robust correlation between students' satisfaction and the quality of IT services.

Keywords: Satisfaction, Dropout, Retention, Information Technology

1. Introduction

Students' satisfaction can be defined as a short-term attitude resulting from an evaluation of students' educational experience, services, and facilities (Weerasinghe, Lalitha, and Fernando 2017). Student satisfaction is a complex concept, and it continues to evolve due to various institutional environments and subject-fields (Elliott and D. 2002). Recent studies emphasize that student satisfaction and retention are influenced by multiple factors, such as institutional policies, student engagement, and support services (Musselman, 2019). Additionally, institutions are focusing on identifying key problems and opportunities to boost retention rates by fostering student engagement and satisfaction (Feinstein et al., 2020).

The ongoing challenge of student withdrawal continues to impact higher education institutions, with adverse effects on individuals, families, and the educational sector. Many institutions face the potential risk of reduced funding or program closures due to low retention rates, which are often linked to institutional performance (Mayo, Helms, and Codjoe 2004; Norton, Cherastidtham, & Mackey, 2018). Studies suggest that early withdrawal is a global issue tied to employment challenges and social instability. This leads to broader economic and social problems, particularly when students leave without completing their degrees (Hagedorn, 2019).

Recent literature also highlights the consequences of early dropouts, such as increased frustration, vandalism, violence, and reduced funding for educational institutions (Jimenez, 2020). Furthermore, these students are likely to face long-term unemployment and financial instability, resulting in negative social outcomes (Rumberger, 2021). This makes student retention a priority for not only educational institutions but also governments (Thomas, 2019). If students are dissatisfied with their experiences, they tend to send negative messages about their institution, which further exacerbates the problem by encouraging others to drop out (Feinstein et al., 2020).

The goal of this study is to determine the key indicators of student dissatisfaction that result in low retention rates, and to offer recommendations to improve overall student satisfaction.

2. Literature Review

2.1 What is a Student Dropout?

Though the word 'dropout' in educational settings contains numerous notions, such as 'leaving the course,' 'leaving the institute,' 'poor retention,' or 'withdrawal,' there is absolute agreement that 'dropout' causes economic and social losses not only for individuals but also for the institutions involved (Gupta, SK, Antony, J, Lacher, F and Douglas 2018). While the term dropout has its roots in the early 1900s (Dorn, 1993), there remains no universally agreed definition (Hagedorn, 2005). The term 'dropout' in the literature is often used to describe 'student withdrawal' from college or school (Scoggin and Styron 2006). Dropouts are frequently described as poorly motivated, lazy, unwilling to act, troublemakers, or unable to meet the requirements of teachers (Becker 2010; Shah et al., 2019).

While no standard definitions exist for terms such as dropout, attrition, persistence, or retention, scholarly descriptions are available (Manyanga, Sithole, and Hanson 2017). For the purposes of this study, the following terminologies from Berge and Huang (2004) are adopted:

- Graduates: Students who complete a bachelor's degree.

- Stop-outs: Students who leave and subsequently return.

- Dropouts: Students who leave and do not return.

- Persisters: Students continuously enrolled over time.

- Attrition: A decline in the number of students from the start to the end of a degree.

- Retention: Continuous student participation in education, culminating in course, program, or degree completion.

2.2 Student Satisfaction and Dropout

The literature shows that client satisfaction is crucial for business retention. The concept of students as customers is not new (Douglas, McClelland, & Davies 2008). Satisfaction, which represents an individual's evaluation of what they received versus their expectations, is key to both student retention and institutional growth (Jurkowitsch, Vignali, & Kaufmann 2006). Recent studies affirm that student satisfaction is strongly linked to retention (Nugraha et al., 2020; Khalid et al., 2021). Higher satisfaction levels are associated with improved retention rates and institutional reputation (Adil et al., 2021). Consequently, institutions must focus on services that enhance satisfaction to attract new students while retaining current ones (Andoh et al., 2020).

2.3 Theories of Student Retention

Among the various models of student retention, Tinto's model (1975) remains widely cited. Tinto argues that students enter institutions with a set of pre-entry attributes, including personal, family, and academic characteristics, which influence their decision to persist or drop out (Tinto, 1993). This model has been expanded upon in recent studies (Rodríguez-Gómez, Meneses, & Gairín, 2020), highlighting the impact of external factors such as financial challenges and social integration on student retention.

2.4 Student as a Customer

The idea of treating students as customers has gained traction in recent years. Douglas, McClelland, and Davies (2008) noted that the satisfaction of students significantly impacts retention. Petruzzellis, Luca, and Romanazzi (2010) and more recent studies (Shah et al., 2019; Adil et al., 2021) agree that institutions should continually refine their services to meet students' evolving expectations, ultimately boosting satisfaction and retention.

2.5 Predictors of Student Dropout

Multiple factors contribute to student dropout, including academic performance, external pressures, and demographic variables. The literature identifies three primary categories affecting dropout rates: internal, external, and demographic factors (Glazier, 2016; Shah et al., 2019). For example, in a study comparing Saudi Arabia and Pakistan, internal factors, such as course satisfaction, were significant predictors of attrition (Andoh et al., 2020).

Common dropout predictors include a lack of motivation, inadequate academic abilities, and external distractions (Bridgeland & DiIulio, 2006). Institutional factors, such as outdated technology and insufficient support services, further exacerbate dropout rates (Khalid et al., 2021). Additionally, poor communication between staff and students, particularly in addressing administrative or technological issues, can lead to frustration and eventual withdrawal (Jiménez, 2020).

In conclusion, addressing student dissatisfaction by improving internal and external factors will help institutions

reduce dropout rates and increase student retention (Rodríguez-Gómez et al., 2020; Nugraha et al., 2020).

Fozdar et al., (2006) identified 20 important causes from the literature for students' dissatisfaction and dropout decisions. They broadly grouped these reasons into three basic categories: 1). personal reasons (n = 6 factors); 2). Programme/course related reasons (n = 7 factors); and 3). Student-support related reasons (n = 7 factors). These reasons are summarized in the following table 2.1:

Table 1. Reasons for Dropout

1. Personal reasons (*n* = 6 factors)	2. Program/course related reasons (*n* = 7 factors)	3. Student support related reasons (*n* = 7 factors)
1. Lack of Sufficient time for study due to: a) change in family circumstances, b) change in employment status and c) marriage	1. Difficulty in learning science through distance	1. Insufficient academic support from study centers
2. Poor health condition	2. The expectation of the program not met	2. Study center too far from residence
3. Absence of interaction with other students	3. The language used was quite difficult to understand	3. Insufficient counseling sessions
4. Financial constraints due to: a) high program fee and b) high expenditure on account of attending laboratory courses	4. Unavailability of the program in the mother tongue	4. Difficulty in attending laboratory sessions due to: a) persona reason, b) family problem c) employment, and d) distance
5. Admission to (B.Sc) program conventional systems	5. Difficulty in term-end examination papers	5. Lack of proper intimation regarding theory and lab counseling sessions
6. Admission to some professional program/course	6. Difficulty in doing assignments	6. Lack of responsiveness from: a) study center, b) regional center, and c) headquarters
	7. The program was too time-consuming to study all the courses	7. Non-receipt of a) Course material, b) assignment and c) other relevant information

Source: Fozdar et al., (2006)

Astin, (1975, p.14) identified various variables as the predictors of attrition such as 'boredom with courses or teachers', 'financial difficulties', 'marriage, 'poor grades', 'inability to take the desired courses', 'good job offer', 'illness or accident', 'difficulty in commuting', and 'dissatisfaction with service provided by the institutions'.

There are various models regarding student retention but the most commonly referred to model in the literature on student retention is *Tinto's model*. It was first offered in the literature review in 1975. Many researchers follow the Tinto (1993) theory in their research, which says that the majority of students enter into an institution with a variety of pre-entry attributes such as personal, family, and academic characteristics, which impact their intentions to retain or to drop out. We adapted Tinto's model and classified the predictors of attrition into the following main categories: *internal factors, external factors, and demographic characteristics,* as we have summarized in the following Table 2:

Table 2. Tinto's Internal, External, and Demographic dropout factors

1. **Internal factors** (n=8)	2. **External factors** (n=12)	3. **Demographic characteristics** (n=5)

1. The college registration system
   a) Registration and pre-registration process
   b) Adding a course of choice
   c) Registering for a course on time
   d) Students warning systems
2. Course Timetabling and Scheduling satisfaction
3. Curriculum satisfaction
4. Course Assessments satisfaction
5. Satisfaction from Instructors
6. Satisfaction with Teaching Resources
7. Satisfaction with Technology required for learning
8. Satisfaction with the Services
   a) Counseling and Advising (Academic support)
   b) Library resources/Bookstores
   c) Students Services
   d) Extracurricular and Recreational services (gym, health facilities)
   e) Academic support services
	1. Financial Factors
	2. Marriage and Relationship Involvement
	3. Employment
	4. Personal or Family Sickness
	5. Poor English Level
	6. Racial/Demographic Tension
	7. Lack of Transportation
	8. Conflict with College administration
	9. Absences of Clear Policies and Rules
	10. Students' Poor Performance
	11. Loss of Interest
	12. Family Pressure
		1. Age
		2. Marital Status
		3. Geographic Location/Nationality
		4. Years of Studies

Source: Tinto's Internal factors, External factors, and Demographic dropout factors

The following section discusses the internal, external, and demographic factors in detail:

2.6 Internal Factors

The internal factors are known as institutional factors (Andoh et al. 2020). The internal factors are generally related to the registration system, course timetabling, curriculum, assessment, and available services, etc. (Khan, R. A. & Osman 2011), (Osman et al. 2014, 2017, 2019)

2.6.1 Satisfaction with Registration System

If a registration system is ineffective, it can lead to student dissatisfaction and dropout decisions (Andoh et al., 2020). Recent research also confirms this, showing that streamlined and user-friendly registration processes improve student satisfaction and retention (Smith & Jones, 2021; Hernandez & Lee, 2019).

2.6.2 Satisfaction with Course Timetabling and Scheduling

Course scheduling impacts student satisfaction, with flexibility being crucial for non-traditional and working students (Feldman & Clarke, 2020). Clear communication regarding schedule changes can enhance student confidence and retention (Kim & Park, 2019).

2.6.3 Satisfaction with Curriculum

The relevance of the curriculum to industry demands has been shown to increase student satisfaction and retention rates (Lee & Zhao, 2021). Frequent curriculum reviews ensure alignment with workforce needs (Williams & Davis, 2020).

2.6.4 Satisfaction with Course Assessments

Assessment practices that are perceived as fair and transparent are linked to higher student satisfaction and retention (Chen & Taylor, 2020). Poor assessment experiences contribute to higher attrition rates (Garcia & Ahmed, 2021).

2.6.5 Satisfaction with Instructors

Positive student-instructor relationships are a key determinant of student satisfaction and retention (Brown & Miller, 2019). Respectful, engaging interactions foster stronger connections between students and institutions (Park & Johnson, 2021).

2.6.7 Satisfaction with Teaching Resources

The availability and quality of teaching resources such as smart classrooms and internet access continue to be significant in student satisfaction (Jones & Kim, 2020). Institutions that prioritize these resources have lower attrition rates (Smith et al., 2022).

2.6.8 Satisfaction with Technology Required for Learning

The effective integration of technology into learning environments remains a critical factor for student satisfaction (Lee & Robinson, 2020). Institutions that fail to provide adequate IT resources experience higher dropout rates (Zhang & Chen, 2021).

2.6.9 Satisfaction with Available Services

Student satisfaction with campus services, such as advising and counseling, remains a crucial factor in retention (Harris & Williams, 2021). Support services like libraries and gyms contribute to overall student well-being and persistence (Green & Cooper, 2020).

2.7 External Factors

External factors are factors that relate to students' lives outside an institution (Eriksson, T., Adawi, T., & Stöhr 2017), (Osman et al 2019). A variety of external factors have been identified that pull students out of school or college, including financial obligations, family needs, employment issues, emotional challenges, and childbirth(Ecker-lyster and Niileksela 2016). These external factors can be considered as the predictors of student dropout (Burgess 2008). From the review of the literature, various factors have been identified and are classified into external factors. These external factors are discussed in the following paragraphs: without knowing what skills the profession requires which also can lead to high attrition rates. This is exacerbated when outdated teaching styles or old material are used to teach courses. This can then impact the students' decision to continue (or discontinue) their studies in the field of interest. Another dropout indicator is the dryness of college courses. Ghamdi (1977) figured out that 63 percent of leaner who drop out of college in Saudi Arabia, specified that their majors were either not exciting or boring.

2.7.1 Racial Tension

Another factor that can impact a student's decision to drop out of college is racial tension. College students enrolling in city colleges may come from different parts of the country. In a study, Pender (2010), found that communities in the US such as African Americans, Latinos, and American Indians have the maximum dropout rates compared to other racial groups of students. These students fail to continue their studies because of inadequate or unsuccessful support by the college administration to help them upgrade their social involvement in the institution's setting. Gong (2006) found that Asian, African American, and Latino students, who enrolled in US universities where many of their races attend, are unlikely to drop out in the early period of their studies. This was in contrast to other universities with smaller numbers of minority representations. The majority of those students who started dropping out was partly due to the low representations of their own race among the student population as a whole. Thus, the racial factor contributes to the decisions of these students to drop out of college or university.

2.7.2 Family Support or Family Pressure

Family pressure is another factor that can influence a student's decision to drop out of college. Many researchers wrote about this factor and its influence on attrition rates. The education of students' parents is an important factor in determining whether those students persist at college; and it plays a major role in the accomplishment of their

children till they complete their education at that particular college (Shah, Mahsood, & Widin 2010). When parents involve themselves in their children by observing their development and struggles and intact freely and regularly with them. The children are more likely to gain high educational rewards. Hence, the family parenting approach plays a vital role in bringing students to institutions and encouraging them to complete their studies (Lopez Turley, Ruth N, Desmond, Matthew, & Bruch 2010). Noel, L, Levitz, R, & Saluri (1985) also of the view that parents who stress the importance of education to their children play a significant role in retaining their children at the college till they complete their degree. Chesters (2010) also found that the impact of educated parents on a student's chances of gaining a university degree has a direct positive impact.

2.8 Demographic Characteristics

In general, the demographic features include age, marital status, gender, geographic location, nationality, and years of study at their present institute. The literature reveals conflicting results regarding the relationship between student retention and demographic features. For instance, Craig, Alfred J, & Ward (2007) investigated variables related to student attrition for community colleges. Their study results confirmed that most of the demographic factors examined (age, gender, and ethnicity/race) were not related to student attrition. Most of the Demographic factors have already been evaluated in previous studies, however, in this study, some of the factors are evaluated more again under the present situation in the context of their impact on students' dropout.

2.8.1 Age

The literature shows that students' dropout about students' age is inconsistent (Khan, R. A. & Osman, 2011), Osman et al (2014, 2017, 2019), Xenos, Michalis, Pierrakeas, Christos, & Pintelas (2002) concluded that older students are more likely to drop out than younger ones, even though the differences are not statically significant. The results of a study by Zavarella, Carol A, & Ignash (2009) also indicated that there are no significant differences between the two age groups. However, some researchers believe that the age factor is directly related to retention decisions and argue that the 'age' factor influences attrition rates. Cooper (1990) stated that the age factor has a limited yet significant effect on student attrition. Nakajima, Mikiko A, Dembo, Myron H, & Mossler (2012) also confirmed that the age factor has a strong influence on college students' dropout rates. On the other hand, Andoh et al. (2020) found that student satisfaction was not dependent on age or gender. Thus, the 'age factor appears to be a conflicting issue and varies from one research to another. Therefore, there is a need for an investigation and further research in the context of this study.

2.8.2 Marital Status

Many researchers have investigated the factor of Marital Status and its impact on college attrition. The literature shows that *marriage* is another dropping-out factor for many students, especially for female students. Astin, (1975) found that getting married while in college has little importance for men and more importance for women. In an investigation of affiliation between marital status and graduation rates, Jacobs, Jerry A, & King, (2002), Osman et al (2014, 2017, 2019) found that unmarried students with no children graduated at a greater rate than married students. Some researchers such as (Johnson 1996) found that marital life has a positive impact on the retention of the colleges. However, there is a lack of research concerning students who enrolled at college as single students but subsequently changed their marital status while there.

2.8.3 Geographic Location and Students' Nationality

Prior research has investigated this factor and its impact on college attrition. The literature shows that geographic location and students' nationality is an additional factor that may influence attrition. In a study, Grebennikov, Leonid, & Shah, (2012) found that international students demonstrate better retention rates than local students.

2.8.4 Years of Studies

Years of studies are an additional factor that can influence dropout decisions. Prior research has investigated this factor and its impact on college attrition. Studies by McBurnie, Janine Elizabeth, Campbell, Malcolm, & West (2012) showed that numerous students could not make it into the second year due to a variety of difficulties such as academic difficulties, peer relationships, or personal problems. However, the second year is very important because, in the second year, students make critical decisions such as selecting their major area of study. The statistics in the study showed that 23 percent of students withdraw from the institutes in their first year and only 8 percent withdraw in the second and third years. Hence, second-year decisions have a huge influence on their future career direction. The authors stated that forty-nine percent of students of the third year or fourth year have a low dropout or withdrawal rate and most of the students tend to complete their studies. Therefore, investigating the impact of years of study on attrition rates is also an important factor.

2.9 Strategies for Improving Students' Retention

The following strategies are made by (Scott et al., 2008) relevant to retention: peer support programs; peer tutoring groups; extended availability of academic staff; establishing orientation programs; rapid and effective management of queries; 'just-in-time' and 'just-for-me' support; flexible, relevant and clear course design; efficient student support systems; responsive administration; conveniently accessed library and IT resources; relevant, and integrated assessment system with quick and positive feedback.

According to (Leeds et al., 2013), welcoming e-mails and phone calls to establish initial contact with the students help students to become part of the learning community. The students' satisfaction and retention may be improved by focusing on academic, social, and financial support (Tinto & Pusser, 2006). The institutions should address the intrinsic and extrinsic factors and should ensure an effective academic environment, technical support, communication mechanisms, and flexible course structure (Packham et al. 2004).

2.10 Research Questions (RQS)

The study identifies the following research questions:

RQ 1: To what extent (if any) do services provided to the students might impact students' satisfaction that in turn leads to dropout decision?

RQ 2: Which service out of various services provided to the students, delivers the most significant contribution to students' satisfaction?

2.11 The Proposed Model

According to Wiers-Jenssen, J., Stensaker, B., and Grogaard (2002), the research in this area does not demonstrate a consistent model for student satisfaction.

The need for the development of a student satisfaction model is based on the specific reasons: every student is like a customer that requires services from the institutions; the students´ satisfaction level is always varying from student to student and with time; every student transports the "picture" of the institution to other students; no consistent model for student satisfaction could be found after researching the existing literature only employee satisfaction models were available (Jurkowitsch et al. 2006)

Based on the above literature review, we hypothesize the following model as depicted in Figure 1:
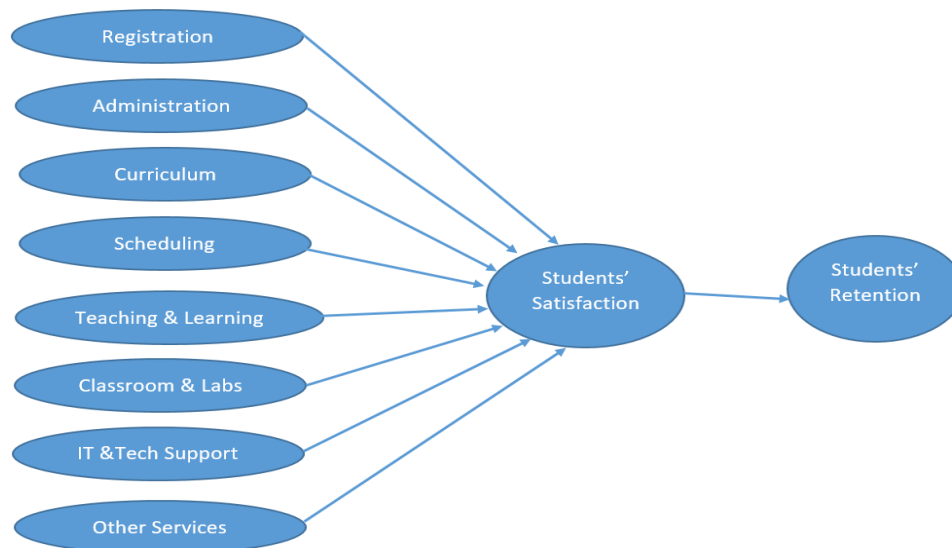

Figure 1. Satisfaction Model

3. Methodology

In this quantitative method, a self-administered questionnaire was distributed among the target population of around 250 male students of age between 14 to 21 years studying at DCC. The survey questionnaire was distributed to the students via e-mail and via paper-based during the semester 171-172. To ensure the content validity of the instrument,

advice from an expert at KFUPM was incorporated. As a pilot study, the student questionnaires were distributed to a sample of 15 students. It was found that more than 80 percent of the students were unable to understand the questions because of their poor English. Therefore, a Saudi national was requested to translate the survey questionnaire into the Arabic language. The survey included the students' demographics, and students' satisfaction with Instructors; Registration System; Scheduling; Curriculum; Assessment Methods; Classrooms, Labs and IT facilities; Technology, and other resources. The quantitative analysis was done on the data collected using the Statistical Package for the Social Sciences (SPSS) program.

4. Results

In Part-II of the survey, questions were asked about the factor that might force students to leave the college before completing the diploma. The majority of students (59 percent) agreed that "financial issues" might be the cause of dissatisfaction (supported by Astin, 1975), while 54 percent of students agreed with 'academic performance' as dissatisfaction (supported by Bridgeland, John M., John J. DiIulio Jr, 2006). 'Boring courses' is an important dissatisfaction factor agreed by 43 percent of DCC students. The following figure 2 shows the dissatisfaction statistics of college students.
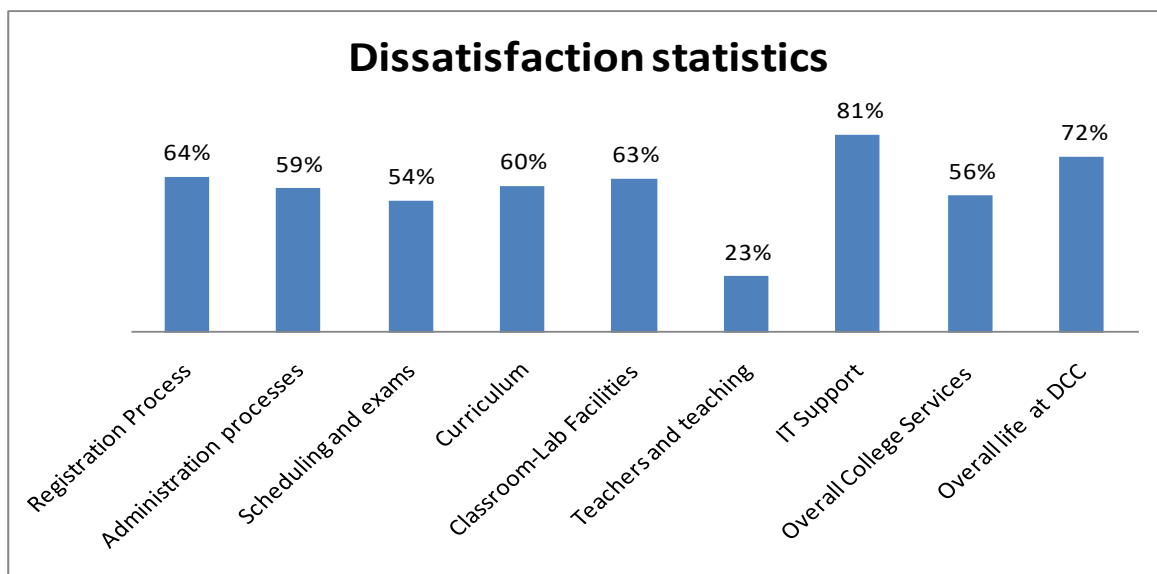

Figure 2. Dissatisfaction statistics among students (%)

In the quantitative analysis of Part-III of the survey, Exploratory Factor Analysis (EFA) reduced all variables into related constructs/components and the assigned new names in the light of the literature as shown in following table 3. Factor Analysis reduced the eight variables of Registration into two related constructs and labeled new names: *Registration Satisfaction* and *Scheduling Satisfaction (shown on the right side of table 4*. The descriptive test shows that 'mean values' for components are more than 3 (3.42, 3.16) and indicates their responses towards the slight disagree side. Similarly, eight variables under IT-facilities were reduced into *classroom-Lab facilities* and *IT-Support facilities (shown on the right side of table 4)*. The descriptive test shows that the mean score for both constructs is 3.37 and 3.55 respectively. After the validity test, four variables under college services were reduced into a single construct called 'college services satisfaction' and the mean value (2.966) reflects the trend towards satisfaction as shown in Table 3.

Table 3. Summary of Factor Analysis, Mean and Standard Deviation

Before Factor Analysis		After Factor Analysis	Mean	Standard Deviation
Satisfaction with Registration	General Registration Procedures	Registration Satisfaction	3.427	1.26962
	Able to add other courses			
	Able to register without delays			
	Registration System- Overall functionality			
	A timetable can be changed when I want	Scheduling Satisfaction	3.162	0.94314
	No Conflict between courses			
	No Conflict between Exams			
	Overall Scheduling and exams			
Satisfaction with Administration	Announcements/Changes are Communicated	Administration Satisfaction	3.229	1.00065
	(overall) Administration processes			
Satisfaction with Course and Curriculum	The program matches my expectations	Curriculum Satisfaction	2.996	0.98577
	Accepted for Admissions			
	Courses up-to-date			
	Overall Curriculum			
Satisfaction with Teaching and Learning facilities	Grading System fair	Teaching Satisfaction	2.216	0.83475
	Feedback on Tests/Homework			
	Knowledge of instructor			
	Instructors are available in the office			
	Instructors care about me			
	The teaching approach is appropriate			
	Overall teachers and teaching			
Satisfaction with IT and Support Facilities	Classroom & lab facilities	Classroom-Lab Facilities Satisfaction	3.371	1.06729
	Teaching facilities			
	Class Size not overcrowded			
	Overall facilities in a classroom & Lab			
	User Account / Password	IT Support Satisfaction	3.557	0.87443
	E-mail and Internet Support			
	Tech-IT Helpdesk Support			
	Overall Computer system by IT			
Satisfaction with Other Services Available	Services by Bookstore	College Services Satisfaction	2.966	1.01809
	Recreational - Gym Facilities			
	Advice and Support			
	Overall Services by College			

Multiple-Regression of all variables was done with 'Overall Students' Satisfaction'. The following Table 4 shows standardized/unstandardized Coefficients, t-value and significant values. The findings show that out of six variables tested, two variables ('Administration Satisfaction' and 'IT Support Satisfaction') are significant.

Table 4. Significant values for overall Regression

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-0.025	0.626		-0.039	0.969
Administration Satisfaction	**0.285**	**0.158**	**0.209**	**1.805**	**0.076**
Registration Satisfaction	0.010	.161	.007	.059	0.953
Curriculum Satisfaction	-.045	0.174	-.035	-.258	0.797
Classroom-Lab Facilities	225	.151	.191	1.495	0.140
IT Support Satisfaction	**.530**	**.189**	**.368**	**2.807**	**0.007**
Services Satisfaction	107	.141	086	.760	0.450

5. Discussion

The quantitative analysis reveals the following:

Addressing Research-Question 1: The results of Regression Analysis show that 'Satisfaction with Administration', and 'Satisfaction with IT Support' is most significant. This shows that students' satisfaction can be achieved by addressing these two factors.

Addressing Research-Question 2: Multiple-Regression indicates that 'Satisfaction with IT-Support Services' (sig. =.007) has the strongest relationship with students' overall satisfaction. Q52 of the survey questionnaire reflects that more than 80 percent of students indicated their dissatisfaction with IT-services. The comments with the survey questionnaire reveal that there multiple login IDs for students, staff, and faculty. Because of multiple login IDs, IT staff face issues and have to reset the password. The students commented (in the response to Question-8 and Question-9 that the main reason for not recommending the college to other students and relatives is the dissatisfaction with IT-support services. Hence, it can be concluded that by addressing this factor ('Satisfaction with IT-support'), the highest students' satisfaction can be achieved which will, in turn, improve students' retention.

Based on the above results, we re-draw the conceptual model as shown in the following figure 4. The figure indicates that among all variables, the 'IT-Support Services' has the most significant effect on the overall satisfaction of the students.
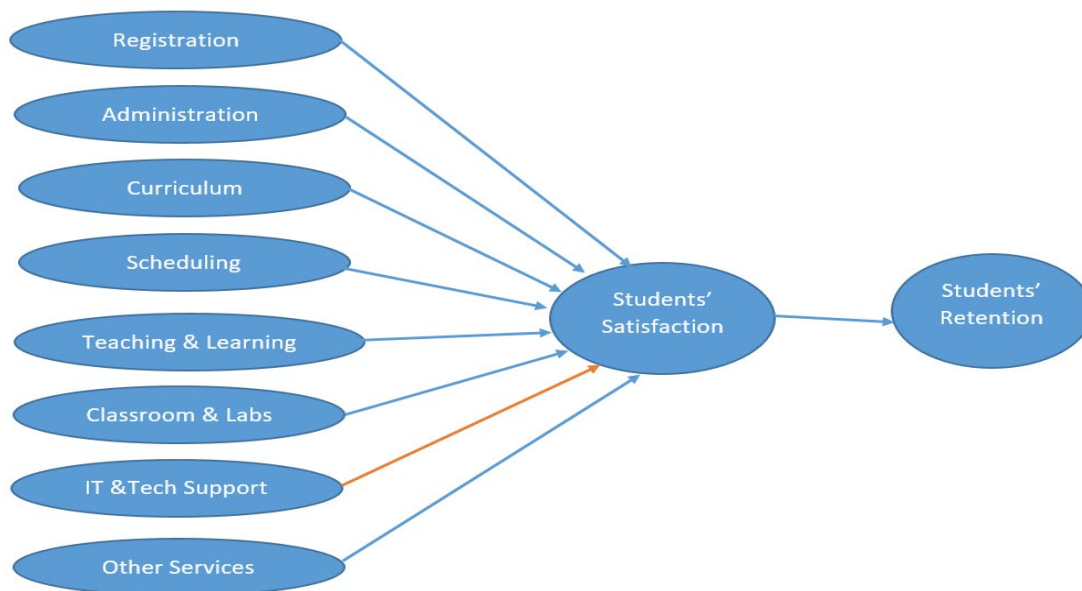

Figure 3. Tested Model of Student Satisfaction

Figure 3 shows the tested model for students' satisfaction and retention. The red arrow indicates the strongest relationship between the independent variable (i.e., IT-support services) and the dependent variable (i.e. overall satisfaction).

5.1 Limitations

This study was limited in its scope by concentration on a community college in the Eastern province of Saudi Arabia and cannot be generalized to the entire population.

5.2 Implications

This study advances the literature on students' satisfaction with the quality of courses in diploma programs at community colleges. It also contributes to the academic theory by empirically demonstrating students' satisfaction variables in the context of KSA. This finding implies that the higher management of community colleges needs to continuously assess & improve technological resources and to develop strategic plans that can focus on hiring more IT professionals and improving IT services to improve student' satisfaction.

5.3 Recommendations and Strategies for Improving Retention

To increase student satisfaction, there is a need to develop programs that improve the quality of college services to attract more students. Improving the quality of teaching and services will increase satisfaction and satisfied students will be retained in the institutions. The policies should be focused on improving academic performance and resources, and help students academically so that students can perform better at college or university. Enterprise Resource Planning (ERP) is a software system designed to integrate and automate the data and processes of an organization into one single system and makes information accessible at any time and anywhere. Integrating ERP in the educational system connects the internal functions of a college such as the registration office, administration, admissions, management, and academic departments and improves the overall satisfaction of the students

6. Conclusion

The findings reveal that there are several issues and gaps which need to be addressed. Based on these findings, it is recommended to update outdated systems (hardware and software), invest in IT-equipment, hire more IT-staff, and integrate all resources, databases, and applications at one central point. Incorporating an Enterprise Resource Planning (ERP) strategy might be a solution for most problems but such a strategy may have customization issues as well as time and funding constraints.

Conflict of Interest

There is no conflict of interest among authors.

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