MEDIATING MODEL OF HYPOTHESIZED EFFECT OF ACADEMIC & INSTITUTIONAL SERVICES ON STUDENT ACHIEVEMENT & LOYALTY

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ABSTRACT: *The purpose of my study is to propose and test a model on the mediating mechanism of academic institutional services, student achievement and loyalty across the wide numbers of HEIs in Lahore. The Self administrative survey approach was used to collect the data through questionnaire. Cluster random sampling technique was used to collect the data from selected 400 students of 29 public and private universities of Lahore. The results suggest, all academic institutional services significantly affect the student achievement, loyalty but academic and administrative services strongly affect the student success and retention. Student satisfaction, student motivation partially mediates the relationship between academic institutional services and student success, loyalty. Moreover, student satisfaction and motivation capture maximum effect of academic and administrative services.*

Keywords: Student satisfaction, Motivation, Achievement, Loyalty

1. INTRODUCTION:

In this era, competitive environment in education industry provide many options to the students that makes the survival of the institute difficult. Only those institutes will stay alive who give importance to the expectations and needs of their potential customers, the students, and help them in realization of their goals. So the services, that can affect the students' expectations, needs and make them successful and loyal with the institute, should be seriously studied. In order to have competitive edge in the future, private organization must develop effective behaviors which create a resilient association between institution and student. The higher education institutions must recognize the expectations and need of their target market, modify their policies to meet the desired level of satisfaction and achievement, by providing them the quality of services [1]. Various methods to evaluate student Satisfaction have been used in European higher education institutions. One of them is the improved quality of teaching and learning.   Addressing the expectation of the students is very important for the higher education institution because satisfaction is like an election held every day, and the student vote with their feet, If dissatisfied they walk (sometimes run) to the competitor. The campus environment, academic services [2], student demographic factors [3] are important in student satisfaction. Therefore, the student satisfaction and loyalty serve as a competitive advantage for educational institutions, sustainable advantage can be obtained by providing customers superior quality of services [1]. In the literature the term quality of services is broadly debated but still ambiguous and needed to be studied [4-6]. In academia the student satisfaction is [7,8], well researched topic, but still important and sensitive because it is a dynamic concept and needed to be re

searched. In the light of data on student satisfaction, universities can formulate the policies which in turn help to produce successful and loyal students, who can enhance their institution's worth in the market, for which each institution striving. services which can affect student satisfaction and student achievement are important and

should be discovered [9]. Satisfaction is important in the success and retention of enrolled students and , thus the link between satisfaction and retention should be studied and managed carefully[10]. Student satisfaction is a vibrant determinant of educational outcome needed to be explored effectively for giving massage to the student that organization is seriously listening their issues[11]. Student satisfaction is a multifaceted construct and influenced by variety of characteristics of students as well as institution [12].

Objective of the Stduy

The objective of this study is twofold: 1) is dividing the term service, into four important academic and institutional categories which can affect the student satisfaction, motivation. 2) Study will also examine mediating relationship of student satisfaction, motivation between academic institutional services, student success, loyalty and retention. The sub objective is to propose a model that describes:

- The mediating mechanism between academic institutional services and student achievement.
- The mediating mechanism between academic institutional services and student loyalty

2. LITERATURE REVIEW

Student Satisfaction & Motivation

In education system, the student's personality grooming, skill development and course knowledge enrich the student satisfaction. satisfaction is one's internal state of feelings that he experience when his or her expectations are fulfilled [13]. Satisfaction is dependent on student's expectations and perception. It is important to know the important issues of the students and what are their perceptions regarding these issues before entering into university [14, 15]. A proper definition of student satisfaction is not available in the literature, so the researcher select and modify the customer satisfaction theory to define the concept of student satisfaction [16]. Although It look very odd to use the term customers for the student, but in current higher education scenario students behave like a customer and said that they

are fee payer so their issues be heard and solved on priority basis [17].

Motivation is a passion that activates specific human behavior. There are two types of motivation 1) intrinsic motivation 2) extrinsic motivation [18]. Intrinsic motivation means internal feelings of happiness induce the person to do some actions while extrinsic motivation is related with external forces. Teacher's motivational techniques increase students participate in educational activities and improve their efforts and grades. Academic environment charged motivationally those students who have lack of internal motivation [18]. Therefore, teachers motivate the student to behave in desired manners. The higher education institutions explain the relationship between success and motivation in more explicit way. According to [19], student perception regarding motivational climate strongly affect the student success.

Academic, Institutional Services and Student Satisfaction, success and loyality

HEI, being services industry, are giving great importance to the expectations and needs of the students, universities modernized their systems to address the student expectations and needs effectively [20]. In campus, facilities like library, laboratory and internship influence the student satisfaction [21]. Moreover, the quality of services [22], offered by the universities can affect the student satisfaction. The quality of services included quality of teaching, availability of library services, campus infrastructure, canteen, sports programs and ICT facilities. Quality of services is the key determinant of student satisfaction in the context of higher education institutions. Moreover quality is a subjective term and has tangible and intangible aspects [23-25]. The effectiveness of administration and management facilitate, upgrade the students educational success and personality grooming [26].

As [27], mentioned three important services like clarity of course design, student interaction with instructor and active discussion among course participants, significantly affect the student satisfaction. Similarly [28] stated that clarity in the behavior of teachers significantly and positively related to student achievement and satisfaction. According to [29], universities should consider students as customers and should adopt customer centric approach to satisfy them. Study analyses the impact of some common services such as: lecture halls, laboratories, equipment, library, dining hall, leisure activities, language course, scholarship, and contact with teacher, administrative services, counseling etc. on student satisfaction. The difference between expectation and reality affect student satisfaction. Perceptions of the students related to university services, play important role while determining the student satisfaction [30]. Theory of persistence and retention presented by [31], identify the relationship between student and institutions. Student goal and institutional commitment, affect retention at particular institution. Student motivation and academic ability to meet the student expectation is important in student commitment

with institution [10]. Poor class room facilities may influence the student satisfaction. so the campus environment can influence the student happiness and that can further affect student satisfaction [20]. The factors which can influence the student satisfaction can be divided into two categories, personal factors, age and gender [32] and institutional services include teacher style [33], quality of instruction [34], feedback from teacher and interaction with class mates [35] and infrastructural facilities [36]. When student perceived that their institution providing them standardized quality of learning environment along with intellectual faculty, appropriate facilities of learning and infrastructure, their motivation and satisfaction with the organization improved. Administrative efficiency [37], also play important role to retain and satisfy the students.

3. HYPOTHESIS

My research hypotheses are

H1: There is positive relationship between academic services and student satisfaction.

H2: There is positive relationship between academic services and student motivation.

H3: There is positive relationship between administrative services and student satisfaction.

H4: There is positive relationship between administrative services and student motivation.

H5: There is positive relationship between campus environment and student satisfaction.

H6: There is positive relationship between campus environment and student motivation.

H7: There is positive relationship between student factors and student satisfaction.

H8: There is positive relationship between student factors and student motivation.

H9: Student satisfaction mediates the relationship between academic services and student achievement.

H10: Student satisfaction mediates the relationship between administrative services and student achievement.

H11: Student satisfaction mediates the relationship between campus environment and student achievement.

H12: Student satisfaction mediates the relationship between student factors and student achievement.

H13: Student satisfaction mediates the relationship between academic services and student loyalty.

H14: Student satisfaction mediates the relationship between administrative services and student loyalty.

H15: Student satisfaction mediates the relationship between campus environment and student loyalty.
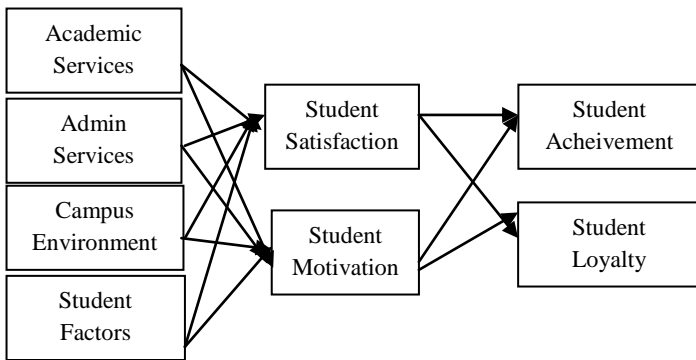
H16: Student satisfaction mediates the relationship between student factors and student loyalty.

H17: Academic and institutional services positively related with student achievement.

H18: Academic and institutional services positively related with student loyalty.

RESAERCH MODEL
Independent Variables, Mediating Variables Dependant Variables

4. METHODOLOGY

There are three generally acceptable paradigms in research, constructivism, positivism and pragmatism. The selection of paradigm provides the guidance to the researcher about philosophical assumption, selection of tools, instrument, participant and methods to be used in the study [38]. The objective of my study is to propose and test a model on the mediating mechanism of academic institutional services and student achievement, loyalty across the wide numbers of HEIs in Lahore. Thus the quantitative approach under positivism paradigm is appropriate for the fulfillment the objective of this study. The Self administrative survey approach was used to collect the data through questionnaire.

Description of Sampling

In research process the sampling is very important because it select the sample from the population for investigation [39]. Researchers generalize their findings about population on the basis of sample results. Generally there are two acceptable categories of sampling: probability sampling and non-probability sampling. In probability sampling, samples are drawn from the population and all sample units have equal probability of being selected is less prone to biasness, it enable the researcher to generalize his claims regarding population of their interest. This type of sampling is appropriate for quantitative research. In non-probability sampling the probability of a population sample being chosen is unknown. Non probability sampling is more commonly used in qualitative research because in this type of research the selection of sample involved the judgment of the researcher [40]. This study, keeping in view the general procedure of quantitative research, will use the probability method of sampling. Probability of sampling can be done by using its various types. When the list of element composing population is impossible, random sampling is best to utilize because it deal with the random selection of individual, so keeping in view this advantage, study will utilize cluster random sampling technique [41]. In this study the students are randomly selected from private and public universities of Lahore (Pakistan). The unit of analysis was that student who was enrolled at least one year ago in the institution. This criterion of minimum one year study experience with the institution is used to ensure that the student participating in the research has clear understanding of the academic institutional services and policies, implemented by the institution. Lahore is capital city of Punjab and is called the city of knowledge. There are 38 public and private universities in Punjab and of these 38 universities, 29 are located in Lahore. Among these 29 universities, 18 are private universities and 11 are public universities. This study has divided universities of Lahore into two clusters, private and public universities. The sample size was 400 students randomly selected from total population that was the 29 universities of Lahore. According to [42], sample size should be above 300 for reliable results obtained in principle component analysis.

Instrument

The best mean to collect the data from large population is questionnaires [43]. In order to satisfy the main objective of the study, data was collected on the variables of academic services, administrative services, campus environment, student demographic factors, student motivation, student satisfaction, student achievement and loyalty. In measuring academic services variables was adapted from [44, 45]. While administrative services are adapted from [26, 37], studies. Student factors are adapted with modification from [3]. Motivation means to exert high level of efforts in exchange of institutional and academic efforts. The items of motivation and satisfaction has been adapted from [46]. Student achievements and student loyalty was developed by using several national benchmark instruments as models (ACT, SSI, and CSEQ). Responses of students on the hypothesized model were obtained on a five point likert-scale (1=strongly disagree to 5= strongly agree).

Analysis and Results:

In this section we will discuss the results and present the analysis of data. In order to check reliability of data study has employed cronbach alpha.

Table No 1: Validity of Scale and Reliability of Data

Items	Components	Crobach,s Alpha
Academic Services (T.F)		
Quality of teaching	.831	.797
Teacher concepts are clear (related to subject)	.841	
Teacher has the ability to attract the students	.769	
Teacher use appropriate teaching methodologies	.684	
My curriculum is appropriate	.684	
Administrative Services (A.F)		
Admin. staff is friendly	.799	.784
Admin. policies are student friendly	.805	
Admin. provides information on time	.757	
Easy access to admin. authorities	.759	
Campus Services (C.F)		
Library facility is available	.817	.756

I am satisfied with cleanliness	.809	
classrooms are comfortable	.737	
Computer lab and internet facility available	.669	
Student Factor (S.F)		
attend the classes regularly	.782	.769
My relationship with my teacher	.785	
campus for knowledge seeking	.804	
I always keep handbook	.715	
Student Satisfaction (S.S)		
I really enjoy studying	.906	.781
Overall I am satisfied	.906	
Student Motivation (S.M)		
I am very motivated	.867	.665
My institutions reputation motivate me	.867	
Student Achievement (S.A)		
I have got merit scholarship	.796	.881
My critical thinking improved	.796	
Student Loyalty (S.L)		
I will complete my degree from this institute	.712	.864
I recommend my friends to take admission in this university	.679	
My institute develop my somatic and mental well being	.738	

Table 1 represents the estimated value of cronbach's alpha, varying from .665 to .881 which indicate that each multi item construct possess high reliability. The higher value of cronbach's alpha for academic services and administrative services (.797 and .784), campus environment (.756), and student factors (.769), student satisfaction (.781), student motivation (.665), student loyalty (.864) and student achievement (.881) shows that each construct is internally consistent. The higher the cronbach's alpha value of a construct, the higher the reliability is of measuring the same construct.

Factor Analysis
In order to check the validity of construct (convergent and discriminant validity), factor analysis was conducted using PCA technique with varimax rotation method. The results of PCA are given below.

Table No 2: KMO and Bartlett's Test

Construct	No. of Items	KMO	Bartlett's Test of Sphericity	Bartlett's Test of Sphericity Sig.
T.F	5	.786	635.220	.000
A.F	4	.769	437.073	.000
C.F	4	.759	374.983	.000
S.F	4	.760	412.572	.000
S.S	2	.650	212.197	.000
S.M	2	.600	115.381	.000
S.A	2	.800	29.350	.000
S.L	4	.713	244.186	.000

The KMO measure of sampling adequacy indicates the suitability of employing factor analysis, value of KMO varies between 0 to 1. If the KMO value is 0, application of factor analysis become inappropriate, if the value of KMO is 1, factor analysis become appropriate. 0.5 value of KMO is poor, 0.6 value is acceptable and value closer to 1 is more desirable [47]. The results suggest the value of KMO for each construct is above recommended acceptable level of 0.6. For T.F, the value of KMO is .786, KMO=.769 for A.F, KMO=.759 for C.F, .760 for S.F, .650 for S.S, for S.M is .600, .800 for S.A, and .713 for S.L, so PCA is appropriate in the case of present data. Bartlett test is used to check that the relationship between the items of a construct is significant. Table 6 reflects the p- value of Bartlett's test in the case of all construct is significant at less than 0.000 which provide evidence against null hypothesis of no correlation.

Table No 3: Eigenvalues and Total Variance Explained

Construct	Components	Initial Eigenvalues		
		Total	% of Variance Explained	Cumulative % of Variance Explained
T.F	1	2.788	70.912	70.912
A.F	1	2.435	69.882	69.882
C.F	1	2.314	76.846	76.846
S.F	1	2.385	72.629	72.629
S.S	1	1.647	82.158	82.158
S.M	1	1.502	75.097	75.097
S.A	1	1.267	73.339	73.339
S.L	1	2.058	61.461	61.461

T.F indicate academic services, A.F shows administrative services, C.F represent campus environment, S.F shows student factors, S.S indicate student satisfaction, S.M is used for student motivation, S.A is for student achievement, and S.L indicate student loyality.
Only the principle component, having eigenvalue greater than 1, will be used for further analysis. Results indicate that T.F consist on 5 items and explain 70.912 % variance, A.F consists on 4 items, explained 69.882 % variance, C.F consists of 4 item, explained 76.846 % variance, S.F consist on 4 items, explained 72.629 % variance, S.S consists on 2 items, explain 82.158 % variance, S.M consists of 2 item, explained 75.097 % variance, S.A consist on 2 items explained 73.339 % variance and S.L consists on 4 items

and explain 61.461 % variance. The results satisfy the criteria of construct validity including both discriminant validity (loading of at least 0.40, no cross loading above 0.40) and convergent validity, eigenvalue of at least 1, loading of at least 0.40 for items that load on posit construct, it proof that data is reliable.

Regression Analysis

Regression analysis has been used to determine, the effect of academic institutional services on mediating variable and the effect of mediating variables on student achievement and loyalty. Result shows significant relationship of academic institutional services and S.S (β=.508, p value< 0.000 and β=.490, p value<.000, β= .342 p value<.000, β= .468, p value<.000). Similarly result shows significant relationship of academic and institutional services and S.M (β=.504, p value< .000 and β= .426, p value<.000, β= .406 p value<.000, β= .485, p value<.000). Moreover, there is significant relationship of mediating variable (S.S) on S.A and S.L (β= .424, p value<0.00 and β= .526 p value< 0.01). Similarly there is significant positive relationship of mediating variables S.M on S.A and S.L (β= .458, p value<0.00 and β= .552 p value< 0.00). The results show that S.S and S.M capture maximum effect of academic services and administrative services as compare to campus environment and student factors. Similarly S.L captures maximum effect of S.S and S.M. The effect of academic institutional services on mediating variables and the effect of mediating variables on student achievement, loyalty are documented in following regression table.

Table No 4: Dependant Variable: Student Satisfaction

Independent Variable	Beta	T	Sig.
T.F	0.508	11.74	0.000
A.F	.490	11.22	0.000
C.F	.342	7.28	0.000
S.F	.468	10.543	0.000
R^2	.58		
F. Statistics	67.25		0.000

Table No. 5: Dependant variable: Student Motivation

Independent Variable	Beta	T	Sig.
T.F	.504	11.71	0.000
A.F	.426	9.44	0.000
C.F	.406	8.86	0.000
S.F	.485	11.03	0.000
R^2	.78		
F. Statistics	44.25		0.000

Table No. 6: Dependant variable :Student Acheivment

Independent Variable	Beta	T	Sig.
Student	.424	9.35	.000
Student	.458	10.265	.001
R. Sequare	.070		
F. Statistics	11.906		0.000

Table No 7: Dependant Variable: Student Loyalty

Independent Variable	Beta	T	Sig.
Student	.526	12.29	.000
Student	.552	13.08	.000
R^2	.73		
F. Statistics	64.55		0.000

Mediating Analysis in Case of Academic & Institutional Services

If the direct effect of independent variable on mediating variable, of mediating variable on dependent variable and of independent variable on a dependent variable are significant then mediation can be tested.

Table No 8: Direct Effects of Academic Institutional Services on Student Achievement & Loyalty

Independent Variable	Dependent Variable	
	Student achievement	Student loyalty
T.F	.385*	.752*
A.F	.455*	.545*
C.F	.326*	.608*
S.F	.280*	.630*

Note. * Represent significance at less than 0.000 values in parenthesis represents t-ratios.

Table 8 shows that academic and administrative services contribute comparatively more in student achievement while campus environment and student factors contribute comparatively more in student loyalty.

I have employed multiple regression analysis to test the mediation proposed by mediating variables between independent variable and dependent variables. The table 8 represents the result of multiple regression analysis where each mediating variable was entered as an independent variable along with academic and institutional services.

Table No 9: Multiple Regression Analysis For Mediation

Independent Variable	Dependent Variable		Dependent Variable	
	Student achievement		Student loyalty	
T.F	.228*	.207*	.629*	.616*
S.S	.308*		.253*	
S.M		.381*		.288*
Adjusted R^2	.214	.230	.595	.610
F. Statistics	55.528*	60.194*	292.974*	311.930*

Ad. F	.325*	.317*	.378*	.377*
S.S	.265*		.342*	
S.M		.322*		.388*
Adjusted R²	.256	.288	.382	.414
F. Statistics	69.809*	81.727*	123.743*	141.169*
Campus	.204*	.168**	.486*	.463*
S.S	.355*		.357	
S.M		.388*		.360*
Adjusted R²	.213	.228	.480	.476
F. Statistics	54.763	59.721	183.148	180.085
Stu. F	.104*	.077*	.491*	.474*
S.S	.375*		.298*	
S.M		.420*		.317*
Adjusted R²	.184	.209	.462	.468
F. Statistics	46.020*	53.692*	171.164*	175.058*

Note. * Represent significance at less than 0.000 values in parenthesis represents t-ratios.

Results in Table 9 show that S.S, S.M partially mediates between academic services and student achievement. The mediating role of S.S between T.F and S.A (S.S β=.308, sig, <.000) and between T.F and S.L is (S.S β=.255, sig, <.000), similarly S.M mediate between T.F and S.A (S.M, β=.381, sig, <.000) and between T.F and S.L (S.M, β=.288, sig, <.000). Moreover, S.S, S.M partially mediates between administrative services and student achievement, loyalty. Its mediating role is similar between A.F and S.A (S.S β=.265, sig, <.000) and between A.F and S.L (S.S β=.342, sig, <.000), similarly S.M mediate, between A.F and S.A (S.M, β=.322, sig, <.000) and between A.F and S.L (S.M, β=.388, sig, <.000). S.S and S.M partially mediates between campus environment and student achievement and loyalty. Its mediating role between C.F and S.A is (S.S β=.355, sig, <.000), between C.F and S.L is (S.S β=.357, sig, <.000), similarly S.M mediate between C.F and S.A (S.M, β=.388, sig, <.000) and between C.F and S.L (S.M, β=.360, sig, <.000). Moreover, S.S, S.M partially mediates between student services and student achievement, loyalty. Its mediating role between S.F and S.A is (S.S, β=.375, sig, <.000) and between S.F and S.L is (S.S β=.298, sig, <.000), similarly S.M mediate between S.F and S.A (S.M, β=.420, sig, <.000) and between S.F and S.L (S.M, β=.317, sig, <.000)

5. DISCUSSION AND CONCLUSION:

The main aim of this research study is to examine relationship between academic institutional services and student success, loyalty and second purpose of this research is to examine, the mediating relationship of student satisfaction, motivation among academic institutional services and student success, loyalty.

Study found significant relationship between academic services and student satisfaction. It has been examined that student satisfaction partially and significantly mediate between academic services and student achievement, loyalty. Therefore, student satisfaction strongly mediates between T.F and Student achievement, as stated by [48]. Similarly there is significant relationship between T.F and S.M. Student motivation partially and significantly mediate between academic services and student achievement, loyalty. Student motivation strongly mediates between T.F and Student achievement as projected by [49-51]. Study examined the effect of individual (5) items of academic services on, S.S, S.M, and student achievement, student loyalty. Study found, teaching methodologies, teacher's concepts and curriculum are important perceived variable influencing the student satisfaction as mentioned by [52], institution need to focus academic factors to provide the students a suitable learning environment and to meet their expectations. Similarly implementation of non-traditional teaching techniques caters the specific academic demands of the course. The universities should review academic programs in term of methodologies and should recognize the academic staff in term of student satisfaction and retention [53, 54].

Administrative services help to create a strong healthy academic environment. Institutes should develop logical, reasonable and transparent administrative environment to foster the academic growth. Administrative services provide supportive services to the student and affect their satisfaction and motivation. This study found significant relationship between A.F and S.S. Student satisfaction partially and significantly mediates between administrative services and student achievement, loyalty. Student loyalty captures maximum effect of A.F. Similarly there is significant relationship between A.F, S.M. It has been also examined that student motivation partially and significantly mediate between administrative services and student achievement, loyalty. Student motivation strongly mediate between A.F and Student loyalty, as expected [10]. Moreover, there is significant and positive relationship between C.F and S.S. Student satisfaction partially and significantly mediates between campus environment and student achievement, loyalty. Student satisfaction strongly mediates between C.F and Student loyalty. Similarly there is significant relationship between C.F and S.M. Student motivation partially and significantly mediate between campus environment and student achievement, loyalty. Student motivation strongly mediates between C.F and Student achievement as expected [24, 48, 55]. Study found that infrastructural facilities like library are very important while determining student satisfaction and achievement. Library facilities help the institution to enhance the level of student satisfaction [56].

Study also found Student satisfaction partially and significantly mediate between student factors and student achievement and loyalty. Student satisfaction strongly mediates between S.F and Student achievement. Similarly there is significant relationship between S.F, S.M. It has been also examined that student motivation partially and significantly mediate between student factors and student

achievement, loyalty. Student motivation strongly mediate between S.F and Student achievement as expected [3].

There are several encouraging results emerged from this empirical study. First is that student satisfaction although connected with four important academic institutional services significantly but academic services have strong significant effect on student satisfaction. Student satisfaction stongly mediates the relationship between academic institutional services and student success. Secondly, another important mediating variable, student motivation has been identified. It, significantly and partially mediates between academic institutional services and student achievement, loyalty. Moreover, student motivation highly significant with student loyalty, for which institution striving. Student motivation is connected with four identified academic institutional services but strongly effected by academic and student factors. Third, the results suggest that all academic and institutional services positively and significantly affect the student achievement, student loyalty but academic and administrative services strongly affect the student success while campus environment is important for student loyalty.

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