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## Application of entrepreneurship inclination situation model in University student entrepreneurship selection process

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### ABSTRACT

In view of entrepreneurship subject, it can divide into individual entrepreneurship and company entrepreneurship two kinds, obviously university students' entrepreneurship is individual entrepreneurship. University students entrepreneurship inclination decides individual prospect to certain extent, the paper applies entrepreneurship inclination situation model to study university students' entrepreneurship inclination issue. In the paper, it firstly overviews entrepreneurship inclination situation model, provides the model earliest proposition, and latest improvements, gets improved model has larger superiorities, and the paper just references the improved model to carry out exploration. Secondly, analyze entrepreneurship event model, planning behavior theoretical model, specific situation entrepreneurship inclination model and entrepreneurship potential model, the purpose is to build theoretical basis for entrepreneurship inclination situation model optimization exploration. And then, on the basis of analyzing entrepreneurship motivation theories, combine with entrepreneurship inclination situation model research method, it designs university students' entrepreneurship inclination influence factors indicator system, and states relationship among N1, N2, N3, N4 and N5. Finally, apply factor analysis theory and regression analysis method; it gets each factor's factor loading and reliability coefficient, by data indication, it is clear that the paper designed indicator system has higher scientificity and feasibility, all four routes standardized regression coefficient results are forward direction impacts, from which N2→N5 route is forward direction significant impact.

### KEYWORDS

Entrepreneurship inclination; Situation model; Entrepreneurship motivation; Factor analysis; Regression coefficient; Influence route.



## INTRODUCTION

University scale expanding and number of enroll students increasing lets Chinese university students amount to be quite huge, such performance causes increasing pressures of university students' employment. In order to relieve employment pressure, nation calls upon university students to start their own business, and advocate self-employment, therefore new problems generate in new environment that is how university students to startup, what their entrepreneurship inclination is, how to make a reasonable evaluation, and provide feasible suggestions, all of these become problems to be urgently solved in new era. The paper researches on university students' entrepreneurship inclination, with an aim to provide theoretical basis for Chinese university students' entrepreneurship training.

For university students' entrepreneurship inclination research, many people have made efforts, just their efforts guide success of university students' entrepreneurship to certain extent, and also build theoretical basis for current entrepreneurship education. Among them, Yang Jing-Jing and others (2009) established in vocational colleges students entrepreneurship psychological quality and entrepreneurship inclination relations, on the basis of absorbing domestic and foreign experts' research results, used psychology, statistics and other methods, analyzed the relation model prediction on vocational colleges students entrepreneurship inclination, tried to provide certain theoretical references for telling students entrepreneurship psychological quality education and entrepreneurship ability cultivation<sup>[1]</sup>. Duan Jin-Yun etc.(2012) summarized entrepreneurship motivations influence factors, subsequently focused on stating classic entrepreneurship motivation theories, and newly proposed liberation theory<sup>[2]</sup>. Wu Qi-Yun and others (2008) selected Jiangsu one university students as objects, made investigation research on entrepreneurship environment to individual entrepreneurship inclination influences, applied statistics multiple factors analysis method, got that in entrepreneurship environment, the key to affect university students' entrepreneurship inclination was policies completeness, family encouragement and help as well as education encouragement on entrepreneurship, and put forward corresponding countermeasures in the three aspects<sup>[3]</sup>.

On the basis of formers research, the paper carries on model analysis of university students entrepreneurship inclination, the purpose is to explore a kind of analysis model and is scientific and reasonable as well as conforms to current practical situations.

## ENTREPRENEURSHIP INCLINATION SITUATION MODEL SUMMARY

Bird B (1988) proposed entrepreneurship inclination situation model highlighted individual located situational influences<sup>[4]</sup>. Bird B thought in existing entrepreneurship inclination literatures, regarding entrepreneurship activities target setting was too narrow to sufficient grasp launching, leading and organizing new starting enterprises behaviors uniqueness, entrepreneurship inclination was more a frame that not only contained entrepreneurship activities target setting, but also contained large range freedom degree and creativity<sup>[4]</sup>.

In Bird B proposed entrepreneurship inclination situation model, it focused on analyzing rational dimension and intuitive dimension two dimensions individual thinking ways, the two kinds of thinking ways focused contents and concrete situations were as following :

Rational dimension highlighted contents were individual rational thinking important effects on entrepreneurship activities, now individual formed foundation for entrepreneurship inclination and subsequent conduct was individual rational causal analysis procedure, specifically, entrepreneurship conduct correlated commercial plans, opportunity analysis, resources acquiring, target setting and most target orientation conduct relied on rational analysis<sup>[5]</sup>.

Intuitive dimension highlighted contents were irrational thinking effects on entrepreneurship activities, now individual inclination and conducts relied on intuitive, comprehensive, situational thinking way, such a thinking way was linked to individual vision, premonition, thorough controlling on

undeveloped resources, feelings about entrepreneurship conduct future development, entrepreneur owned persistence and other factors.

In addition, Bird B also took individual situation and social situation as jointly exogenous variable that affected rational thinking and intuitive thinking, from which individual thinking contained past entrepreneurship experiences, individual achievement need, control demand and entrepreneurship ability and so on, social situation contained social, political, economic aspects quality. Bird B proposed entrepreneurship inclination situation model’s concrete structure is as Figure 1 shows.

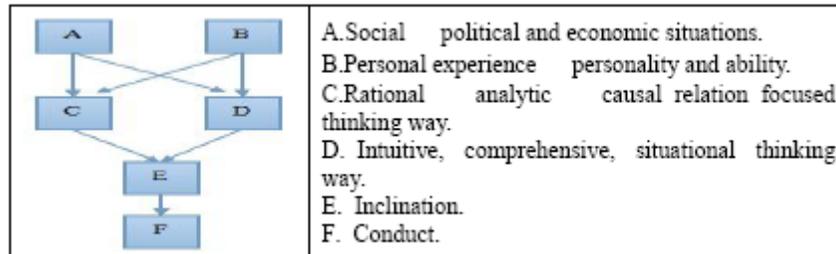


Figure 1 : Entrepreneurship inclination situation model structural schematic diagram

Boyd N G etc.(1994)made improvements on Bird B entrepreneurship inclination situation model, Boyd N G and others highlighted self-efficacy important effects on entrepreneurship inclination, in the improved model, individual situation and social situation firstly generated stored information, such element thinking process of affecting individual entrepreneurship decision<sup>[6]</sup>.

Boyd N G improved model was the same as Bird B model, individual situation and social situation would have impacts on individual rational thinking and intuitive thinking, but the two kinds of thinking ways would no more directly exert on inclination any more, while indirectly exerted on entrepreneurship inclination and meanwhile self-efficacy through entrepreneurship related attitudes, cognition and self-efficacy, and also highlighted entrepreneurship inclination and conducts connections, which meant entrepreneurship transforming into real entrepreneurship conducts needs certain premise conditions, and highlighted that only when individual self-efficacy could surpass entrepreneurship opportunity development required series of demands, substantial entrepreneurship action would appear<sup>[6]</sup>.

Boyd N G improved entrepreneurship inclination situation model structure is as following Figure 2 shows.

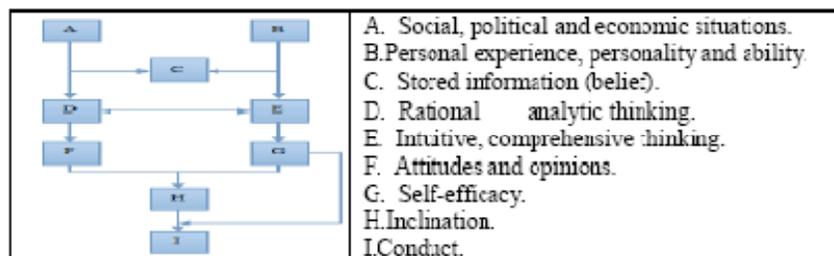


Figure 2 : Improved entrepreneurship inclination situation model structural schematic diagram

### ENTREPRENEURSHIP EVENT MODEL AND PLANNING CONDUCT THEORY MODEL

Shapero A etc. (1982)proposed entrepreneurship event model, the model was recognized as one of sources of entrepreneurship research theories, when exploring and discussing society, culture, system, ethics and other factors influences on entrepreneurship activities development, Shapero A and others thought it should focus on investigating entrepreneurship events rather than the appearance of

entrepreneurs, because it could avoid getting caught in some disputes whether executing entrepreneur activities people were entrepreneurs or not<sup>[7]</sup>. Shapero A and other proposed entrepreneur events model structure is as Figure 3 shows.

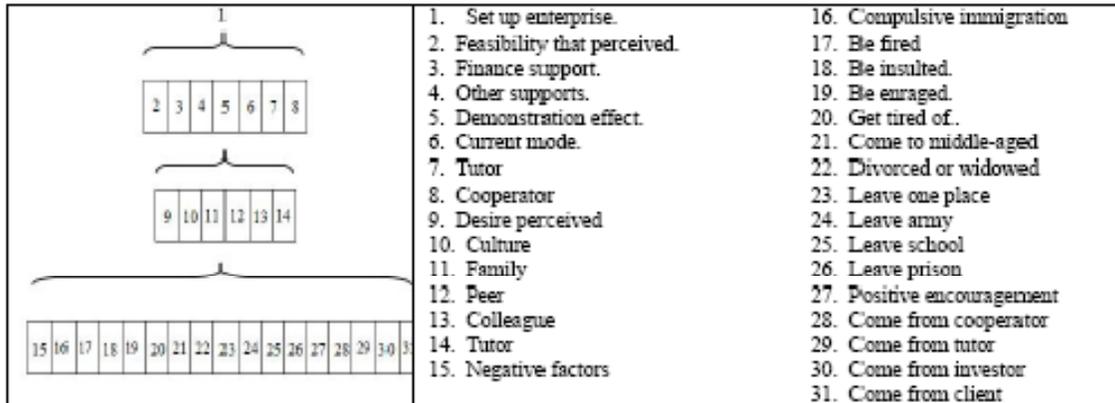


Figure 3 : Entrepreneurship event model structural schematic diagram

Elfving J etc. (2009) according to Shapero A entrepreneurship event model, they developed as Figure 4 showed specific situations entrepreneurship inclination model<sup>[8]</sup>.

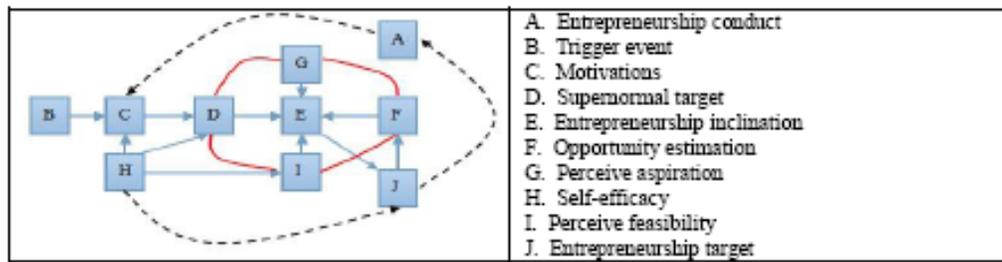


Figure 4 : Specific situation entrepreneurship inclination model structural schematic diagram

Ajzen I (1991) developed planning conduct theory model, the model was one of recognized entrepreneurship inclination research another theory sources, the theory thought that individual planning conduct was intentional, therefore it could expect according to relative such conducts inclination,<sup>[9]</sup> relatively, attitude, belief, personality or demographics features and other elements importance in conduct prediction was reducing, because these elements indirect affected conduct by affecting inclinations<sup>[10]</sup>.

Ajzen I further defined three most important factors in entrepreneurship inclination influential aspects, from which it contained target conduct attitudes, individual subjective norm and individual perception, the three and inclination as well as conduct relationship is as Figure 5 shows. Krueger N F etc.(1994) on the basis of entrepreneurship event model and planning conduct theory model researching and created as Figure 6 showed entrepreneurship potential model<sup>[11]</sup>.

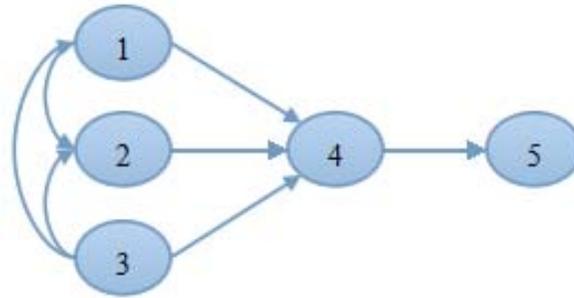


Figure 5 : Planning conduct theory model structural schematic diagram Individual conduct; 2. Subjective norm; 3. Perceive conduct; 4. Inclination; 5. Conduct

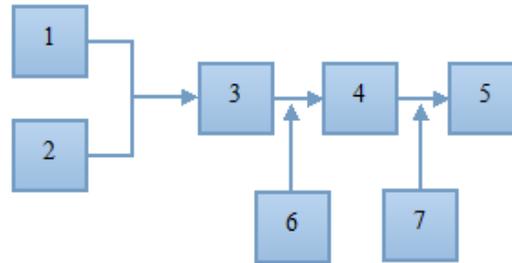


Figure 6 : Entrepreneurship potential model structural schematic diagram; Perceive aspiration; 2. Perceive; 3. Reliability; 4. Possibility; 5. Inclination; 6. Conduct preference; 7. Activating events

## UNIVERSITY STUDENTS' ENTREPRENEURSHIP INCLINATION INFLUENCE FACTORS ANALYSIS

### Entrepreneurship motivation theories

Gliad and Levine (1986) proposed entrepreneurship motivation “Push theory” and “Pull theory” [12]. Among them, the former theory pointed out that individual started business by external negative factors “pushing”, and the later theory thought that individual was attracted by independence seeking, self-implementation, treasure and other reasonable results in entrepreneurship activities. In entrepreneurship motivation two factors, it mainly was “pull” factor that motivated individual to be entrepreneur, Gliad and Levine (1986) on their research basis, they summarized as formula (1) showed entrepreneurship activities influence formula :

$$E_t = E(PL_t, PS_t, O_t) \quad (1)$$

In formula (1),  $E_t$  represents  $t$  moment entrepreneurship activity extent, it suffers  $t$  moment measured “pull” strength ( $PL$ ), “Push” strength ( $PS$ ) and other influences factors strength ( $O$ ) out of the two such three common effects.

Rindova, Barry and Ketchen (2009) stated entrepreneur activities in the perspective of liberation, authors pointed out the purpose of individual entrepreneurship was to break through authority constraints, pursue liberty, change their current social positions, strive to eliminate each kind of restricted factors in the perspective of liberation, they thought entrepreneurship process contained seeking liberty, creation and releasing declaration three core elements [13].

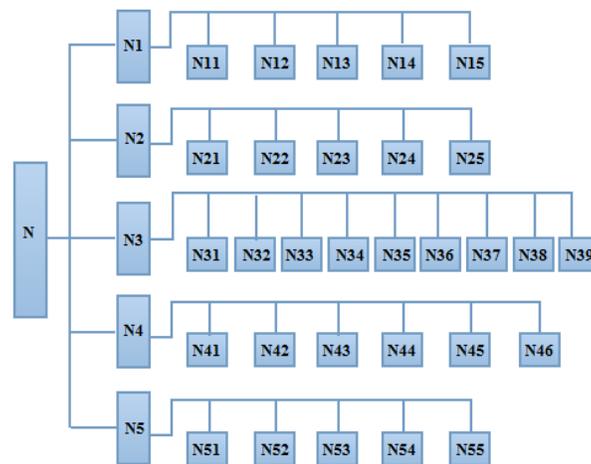
In domestics, it mainly has Gu Qiao etc. (2005) according to Maslow hierarchy of needs theory, they put forward simple entrepreneurship motivation theory and complex motivation theory, from which simple entrepreneurship motivation theory contained economic and social two dimensions, only illustrated entrepreneurs' entrepreneurship motivation was progressive, and had obvious direction,

which analyzed entrepreneurship motivation attributes and their internal logic relationships from entrepreneurship motivation itself<sup>[14]</sup>. Complex motivation theory was a kind of comprehensive three-dimensional motivation theory, it contained motivation, entrepreneur and enterprise development three dimensions, reflected entrepreneurs life cycle in entrepreneurship process, enterprise life cycle and entrepreneurship motivation space relationship.

**University students’ entrepreneurship inclination influential factors indicator system establishment**

According to university students owned peculiarity and their entrepreneurship specificity, the paper selects N1- individual background, N2- personal traits, N3- entrepreneurship environment, N4- entrepreneurship attitudes and N5- entrepreneurship inclination five research variables, carries on influence factors exploration in above five research variables’ subjects. Among them, factors that reflect individual background are N11-education background, N12- family status, N13- entrepreneurship education, N14-internship experience and N15- economic and management knowledge; factors that reflect personal traits are N21- risk taking, N22- inherent controlling, N23- attitude positivity, N24- innovation consciousness and N25- confidence and independence; factors that reflect entrepreneurship environment are N31-entrepreneur policies, N32- local culture, N33- university policies, N34-entrepreneurial climate, N35- science and technological park, N36- family education, N37- relatives and friends influence, N38- relatives and friends supports and N39- success stories;factors that reflect entrepreneur attitudes are N41- social recognition, N42- strong desire, N43- control fate, N44- build wealth, N45- life value and N46- make contributions; factors that reflect entrepreneurship inclination are N51- consider entrepreneurship, N52- select entrepreneurship, N53- firmly believe entrepreneurship, N54- entrepreneurship planning and N55- entrepreneurship flow.

By above analysis, it can get as Figure 7 showed university students’ entrepreneurship inclination influence factors indicator system.



**Figure 7 : University students’ entrepreneurship inclination influence factors indicator system**

In Figure 7 N1, N2, N3, N4and N5 relationships are as Figure 8 shows.

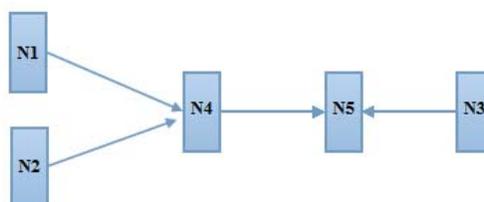


Figure 8 : University students' entrepreneurship inclination influence factors relation schematic diagram

## FACTOR ANALYSIS THEORETICAL BASIS AND ITS RESULT ANALYSIS

### Factor analysis theoretical basis

For the convenience of illustrating factor analysis mathematical model, the section takes extracting two common factors from three variables as an example to state, three variables are using  $Z_1, Z_2, Z_3$  to express, two common factors are using  $F_1$  and  $F_2$  to express, then linear combination that is expressed by three variables adopting two common factors can use formula (2) to express:

$$\begin{cases} Z_1 = a_{11}F_1 + a_{12}F_2 + U_1 \\ Z_2 = a_{21}F_1 + a_{22}F_2 + U_2 \\ Z_3 = a_{31}F_1 + a_{32}F_2 + U_3 \end{cases} \quad (2)$$

Commonality refers to squares totality of load capacity that every variable in every common factor, which can also be regarded as variability amount percentage that individual variable can be explained by common factors, the value is individual variable and common factors multiple relevant square, from commonality size, it can judge the original variable and common factors relationship extent, use 1 to minus each variable unique value is commonality value, if commonality is equal to 1, then it presents it has no unique factor; feature value refers to factors load capacity square integration that every variable in one common factor, in factor analysis common factor extracting, common factors with big feature values as priority factor are extracted, and then is the ones with secondary big feature values, in turn, until the minimum feature value, finally let every common factor feature value to divide number of independent variables, in the factor structure simplification, make explanation on total amount of variation.

The purpose of factor analysis is to concentrate original variables, extract core variables, if it wants to apply factor analysis, firstly it should judge whether observation data is fit for factor analysis or not, and then extract common factors, finally calculate samples factor scores.

STEP1. Apply SPSS software provided four statistical magnitudes, it can define observation data is fit for factor analysis or not, respectively as following shows:

Calculate correlation coefficient matrix :if in relative matrix, most of correlation coefficient is less than 0.3, then it is not fit for factor analysis, when number of original variables are more, output correlation coefficient matrixes are extremely big, it will lead to inconvenience when observing, therefore generally the method will not be used;

Calculate anti-image correlation matrix: The matrix diagonal element is statistical magnitude of one variable MSA, its mathematical definition is as formula (3) shows:

$$MSA_i = \frac{\sum_{j=i} r_{ij}^2}{\sum_{j \neq i} r_{ij}^2 + \sum_{j \neq i} p_{ij}^2} \quad (3)$$

In formula (3),  $r_{ij}$  represents variable  $x_i$  and other variable  $x_j$  simple correlation coefficient,  $p_{ij}$  represents variable  $x_j$  partial correlation coefficient under controlling rest variables, therefore it is clear that variable  $x_i$  statistical magnitude MSA<sub>i</sub> is between 0-1, the statistical magnitude value gets closer to

1 then variable and other variables correlations are getting bigger, therefore, when anti-image correlation matrix diagonal element gets closer to 1, then it will be more fit for factor analysis ;

Bartlett sphericity test: The purpose of the test is checking correlation matrix is unit matrix or not, if it is unit matrix, then it is thought it is not fit for applying factor model, when significant level is less than 0.05, then it is thought to be fit for factor analysis, when significant level is larger than 0.10, then it is thought not to be fit for factor analysis;

KMO measuring: The measurement value represents sampling proper measures, the value gets closer to 1.0, then it shows variables common factors are more, researched data also be more proper to factor analysis, in general, it is thought when  $KMO > 0.9$ , conformity is very well, when  $0.9 > KMO > 0.8$ , conformity is good, when  $0.8 > KMO > 0.7$  conformtiy is normal, when KMO is less than 0.7, it is thought not to be fit for factor analysis.

Therefore, generally it adopts KMO measuring and Bartlett sphericity test to carry on samples data factor analysis conformity measurement, the paper adopts the two testing ways to make conformity measurement on samples data.

STEP2. Extract common factors

Integrate original variables into fewer factors, method that decide common factors extraction is principal component analysis, so-called principal component analysis method refers to use fewer components to explain original variable variance larger parts, when carrying on the analysis method, firstly it needs to transform every variable numeric value into standard value, and then project straight line in space to explain maximum variance, obtained straight line is common factor, finally go ahead with factor extraction according to rest variance size.

STEP3. After getting common factors that is to analyze each factor, in order to get research purposes, in the step, it needs to consider screening factors, samples size, factors amount size three aspects contents, and gets scree plot as well as its analysis result, finally generated factor analysis results report.

**Sample data status**

The paper selected sample data is as TABLE 1 shows.

**TABLE 1: Sample data table**

	Type	Number of people	Proportions		Type	Number of people	Proportions
Gender	Man	264	55.58%	Major	Science and engineering type	298	62.74%
	Woman	211	44.42%		Economic and management type	095	20.01%
Age group	19~21	064	13.47%	Human society type	008	01.68%	
	22~24	250	52.63%	Biotechnology type	008	01.68%	
	25~27	151	31.79%	Others	066	13.89%	
	28~30	010	02.11%	Freshman	010	02.10%	
City and countryside	City	211	44.42%	Grade	Sophomore	076	16.00%
	Countryside	264	55.58%		Junior	132	27.79%
Eastern and western part	Eastern part	332	69.89%	Senior	048	10.11%	
	Medium and western part	143	30.11%	Graduate	209	44.00%	
Education background	Junior college	026	05.47%	Extent that accept	Never	178	37.47%

	Undergraduate course	236	49.68%	entrepreneur education	Have learnt some	225	47.37%
	MBA	002	00.42%		Learnt a lot	032	06.74%
	Master	205	43.16%		Systematic learning	010	02.10%
	Doctor	006	01.27%		Others	030	06.32%
Whether parents have entrepreneurship experiences	Yes	117	24.63%	Whether participating in entrepreneurship contest	Yes	055	11.58%
	No	358	75.37%		No	420	88.52%

### Result analysis

Apply SPSS19.0 software to analyze research objects' as Figure 7 showed entrepreneurship factors, its analysis result is as TABLE 2 shows.

Routes that affect university students entrepreneurship inclination have four ones that are respectively N1→N5, N2→N5, N3→N5 and N4→N5, apply AMOS5.0 software to verify routes, four routes standardized regression coefficients are as TABLE 3 shows.

By TABLE 3, it is clear that all the four routes are forward direction influences, from which N2→N5 route has forward direction significant influences.

**TABLE 2 : Factor analysis result table**

Variable	Factor loading	Reliability coefficient	Variable	Factor loading	Reliability coefficient		
N14	0.859		N31	0.786			
N13	0.847		N38	0.777			
N1	N12	0.778	0.703	N33	0.77		
	N11	0.751		N35	0.744		
	N15	0.679	N3	N32	0.717	0.736	
	N25	0.74		N36	0.688		
	N21	0.7		N39	0.642		
N2	N24	0.692	0.772	N37	0.607		
	N22	0.683		N34	0.506		
	N23	0.59		N42	0.794		
	N55	0.898		N41	0.765		
	N54	0.865		N4	N46	0.707	0.711
N5	N51	0.781	0.742	N43	0.699		
	N53	0.78		N44	0.675		
	N52	0.734		N45	0.506		

Routes that affect university students entrepreneurship inclination have four ones that are respectively N1→N5, N2→N5, N3→N5 and N4→N5, apply AMOS5.0 software to verify routes, four routes standardized regression coefficients are as TABLE 3 shows.

**TABLE 3: Four routes standardized regression coefficients result table**

Regression coefficient statistical magnitude	Influence direction			
	N1→N5	N2→N5	N3→N5	N4→N5
Regression coefficient estimation value	0.303	0.942	0.420	0.216
Significance	0.001	0.000	0.000	0.000

## CONCLUSION

On the basis of summarizing entrepreneurship inclination situation model, the paper makes comparative analysis of entrepreneurship inclination situation model and entrepreneurship event model and planning conduct theory model differences and similarities, in the hope of providing theoretical references for universities students' entrepreneurship selection process.

Entrepreneurship inclination is from entrepreneurship motivation, in the paper, on the basis of stating entrepreneurship motivation theories, combine with entrepreneurship inclination situation model, formulate university students' entrepreneurship inclination influential factors indicator system, and explore individual background, personal traits, entrepreneurship environment, entrepreneurship attitudes and entrepreneurship inclination correlations.

In order to verify the paper established indicator system scientificity, it makes factor analysis of samples data, gets each variable factor loading and reliability coefficient, in view of data result, selected indicators are relative scientific, finally in order to verify university students inclination influence routes, it provides  $N1 \rightarrow N5$ ,  $N2 \rightarrow N5$ ,  $N3 \rightarrow N5$  and  $N4 \rightarrow N5$  standardized regression coefficient, result reflects that all the four routes are forward direction influences, from which  $N2 \rightarrow N5$  route is significant forward direction influence.

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