

Summary table of model regression coefficients [Tian](#)

X	Y	Nonstandard regression coefficients	SE	z (CR price)	p	Standardized regression coefficient
Demand hierarchy →	personality characteristics	0.649	0.079	8.256	0.000	0.929
Demand hierarchy →	Useful	−0.301	0.165	−1.826	0.068	−0.350
personality characteristics →	Useful	1.621	0.310	5.224	0.000	1.316
Demand hierarchy →	10.I use short videos to fulfill my need for self-actualization, such as creating and sharing my own work. (Self-actualization needs)	0.962	0.089	10.772	0.000	0.554
Demand hierarchy →	9.I use TikTok to find communities that share my interests. (Social needs)	1.082	0.094	11.532	0.000	0.604
Demand hierarchy →	8.I watch short videos to learn new skills to help solve practical problems. (Physiological needs)	1.034	0.086	12.039	0.000	0.639
Demand hierarchy →	7.I follow personal growth related content on TikTok.(Self-actualization needs)	0.994	0.085	11.745	0.000	0.618
Demand hierarchy →	6.I watch short videos to meet basic physiological needs, such as looking for food making tutorials. (Physiological needs)	0.944	0.088	10.706	0.000	0.550
Demand hierarchy →	5.I use short videos to satisfy my need for security, such as understanding news and current events. (Safety needs)	0.977	0.088	11.139	0.000	0.578
Demand hierarchy →	4.I often watch videos on TikTok related to health and safety guidelines. (Safety needs)	1.107	0.091	12.115	0.000	0.644
Demand hierarchy →	3.I watch short videos to regain personal respect and recognition in the virtual world. (Respect requires)	1.098	0.098	11.226	0.000	0.584
Demand hierarchy →	2.I look for content on TikTok to motivate me to enhance my self-esteem and sense of self-worth. (Self-actualization needs)	1.166	0.090	12.899	0.000	0.702
Demand hierarchy →	1.I use short videos to meet my social needs, such as participating in hot topic discussions. (Social needs)	1.000				0.605
personality characteristics →	20.I use TikTok to balance my work and personal life. (Self)	1.453	0.172	8.452	0.000	0.602
personality characteristics →	19.I use short videos to seek emotional resonance and understanding with others. (Id)	1.383	0.166	8.355	0.000	0.585
personality characteristics →	18.I follow videos on TikTok that can help me solve problems in real life. (Self)	1.430	0.168	8.511	0.000	0.612
personality characteristics →	17.I watch short videos to satisfy my aesthetic needs and artistic appreciation. (Super self)	1.466	0.171	8.585	0.000	0.626
personality characteristics →	16.I use TikTok to find content that inspires my creativity. (Super-ego)	1.472	0.171	8.611	0.000	0.631
personality characteristics →	15.I satisfy my curiosity and desire to explore by watching short videos. (This me)	1.271	0.155	8.226	0.000	0.564
personality characteristics →	14.I follow content on TikTok that reflects my moral standards and values. (Superior Self)	1.259	0.153	8.208	0.000	0.561
personality characteristics →	13.I watch short videos to satisfy the ego's reality principle, such as learning practical information. (Self)	1.371	0.163	8.395	0.000	0.592
personality characteristics →	12.I use short videos to explore and express my subconscious desires. (The id)	1.398	0.169	8.294	0.000	0.575
personality characteristics →	11.I often watch funny or spoof videos on TikTok to release repressed emotions. (The id)	1.000				0.406
Useful and satisfied →	30.I follow videos on TikTok that help me achieve my personal goals.	1.148	0.113	10.159	0.000	0.592
Useful and satisfied →	21.I watch short videos for instant gratification.	1.000			–	0.516
Useful and satisfied →	29.I watch short videos to satisfy my desire for novelty.	1.165	0.112	10.353	0.000	0.611
Useful and satisfied →	28.I use TikTok to find content that improves the quality of my life.	1.212	0.113	10.703	0.000	0.647
Useful and satisfied →	27.I watch short videos for the satisfaction of communicating and sharing with others.	1.237	0.119	10.438	0.000	0.619
Useful →	26.I follow content on TikTok that offers new perspectives and thinking.	1.259	0.118	10.679	0.000	0.644
Useful →	25.I satisfy my thirst for knowledge and curiosity by watching short videos.	1.240	0.116	10.697	0.000	0.646
Useful and satisfied →	24.I use TikTok to find content that inspires my inner potential.	1.219	0.115	10.559	0.000	0.632
Useful and satisfied →	23.I watch short videos to escape from the stress and problems in real life.	1.028	0.114	9.037	0.000	0.495
Useful and satisfied →	22.I use TikTok to find videos that satisfy my specific interests.	1.082	0.108	10.004	0.000	0.578

Note: → indicates a regression impact relationship or a measurement relationship

Horizontal bar 9-indicates that the item is a reference item

At present, the correlation between data is too strong, resulting in the regression coefficient >1 , and the results may not be applicable. It is suggested to find the items with excessive correlation/weakness and remove them before reanalysis.

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The SEM regression relationship table includes two kinds of relationships, namely structural relationship and measurement relationship.

First: whether it is the influence structure relationship or the measurement relationship, the standardized path coefficient value is usually used to represent the relationship;

Second: if it is significant, it means that there is a significant influence/measurement relationship, otherwise it means that there is no influence/measurement relationship between the items;

Third: if more path coefficients do not show significance, it indicates that the model is poor, and it is suggested to reconfigure the model relationship or adjust the model;

Fourth: The first item of the measurement relationship is the control item, so no z or p values are output.

Model fitting index Tian

Common indicators	χ^2	df	p	The chi-square degrees of freedom ratio is χ^2/df	GFI	RMSEA	RMR	CFI	NFI	NNFI
criteria for judgment			>0.05	<3	>0.9	<0.10	<0.05	>0.9	>0.9	>0.9
price	859.376	402	0.000	2.138	0.894	0.047	0.051	0.918	0.857	0.911
Other indicators	TLI	AGFI	IFI	PGFI	PNFI	PCFI	SRMR	RMSEA 90%CI		
criteria for judgment	>0.9	>0.9	>0.9	>0.5	>0.5	>0.5	<0.1			
price	0.911	0.878	0.918	0.773	0.792	0.848	0.042	0.042~0.051		

Note: When the default model is $\chi^2(435) = 6002.828$, $p = 1.000$

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Model fitting index is used to analyze the validity of the overall model fitting;

First: there are many model fitting indicators, and it is usually difficult to meet all the indicators;

Second: it is suggested to use several common indicators, including chi-square degrees of freedom ratio, GFI, RMSEA, RMR, CFI, NFI, and NNFI;

Third: Default Model refers to the initial value estimation index of the fitting model, which usually has little significance.

Summary table of model fit R2

Item	R square value
personality characteristics	0.863
Useful	1.000
30.I follow videos on TikTok that help me achieve my personal goals.	0.351
21.I watch short videos for instant gratification.	0.266
20.I use TikTok to balance my work and personal life. (Self)	0.362
19.I use short videos to seek emotional resonance and understanding with others. (Id)	0.342
18.I follow videos on TikTok that can help me solve problems in real life. (Self)	0.375
17.I watch short videos to satisfy my aesthetic needs and artistic appreciation. (Super self)	0.392
16.I use TikTok to find content that inspires my creativity. (Super-ego)	0.398
15.I satisfy my curiosity and desire to explore by watching short videos. (This me)	0.318
14.I follow content on TikTok that reflects my moral standards and values. (Superior Self)	0.315
13.I watch short videos to satisfy the ego's reality principle, such as learning practical information. (Self)	0.350
12.I use short videos to explore and express my subconscious desires. (The id)	0.331
29.I watch short videos to satisfy my desire for novelty.	0.373
11.I often watch funny or spoof videos on TikTok to release repressed emotions. (The id)	0.165
10.I use short videos to fulfill my need for self-actualization, such as creating and sharing personal work. (Self-actualization needs)	0.307
9.I use TikTok to find communities that are interested in me. (Social needs)	0.365
8.I watch short videos to learn new skills to help solve practical problems. (Physiological needs)	0.408
7.I follow personal growth related content on TikTok.(Self-actualization needs)	0.382
6.I watch short videos to meet basic physiological needs, such as looking for food making tutorials. (Physiological needs)	0.302
5.I use short videos to satisfy my need for security, such as understanding news and current events. (Safety needs)	0.334
4.I often watch videos on TikTok related to health and safety guidelines. (Safety needs)	0.415
3.I watch short videos to regain personal respect and recognition in the virtual world. (Respect requires)	0.340
2.I look for content on TikTok to motivate me to enhance my self-esteem and sense of self-worth. (Self-actualization needs)	0.492
28.I use TikTok to find content that improves the quality of my life.	0.418
1.I use short videos to meet my social needs, such as participating in hot topic discussions. (Social needs)	0.365
27.I watch short videos for the satisfaction of communicating and sharing with others.	0.384
26.I follow content on TikTok that offers new perspectives and thinking.	0.415
25.I satisfy my thirst for knowledge and curiosity by watching short videos.	0.417
24.I use TikTok to find content that inspires my inner potential.	0.399
23.I watch short videos to escape from the stress and problems in real life.	0.245
22.I use TikTok to find videos that satisfy my specific interests.	0.334

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The summary table of model fit R square shows the R square value of the fitting index;

First: an affected item (dependent variable) will correspond to an R square value, if there are multiple affected items, there will be multiple R square values;

Second: if the purpose of the study is to look at the relationship between influences, the significance of the R square value is small.

The covariance table is [by](#)

X Y	Nonstandard estimated coefficients (Coef.)	Standard error (Std.Error)	<i>z p</i>	Standard estimate coefficient (Std.Estimate)
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The covariance relationship between the display items (i.e., correlation);

First: the covariance relationship table shows the covariance relationship between items;

Second: SPSSAU will automatically establish the covariance relationship between exogenous variables and present the results in the current table (covariance relationship table).

Item	Number	Residual term estimates	Nonstandard estimated coefficient (Coef.)	Standard error (Std.Error)	<i>z p</i>	Standard estimated coefficient (Std.Estimate)
Demand level	e1		0.427	0.059	7.2910.000	1.000
personality characteristics	e2		0.029	0.008	3.3920.001	0.137
Useful	e3		0.000	0.011	0.0001.000	0.000
30.I follow videos on TikTok that help me achieve my personal goals.	e4		0.770	0.050	15.3490.000	0.649
21.I watch short videos for instant gratification.	e5		0.869	0.056	15.6120.000	0.734
20.I use TikTok to balance my work and personal life. (Self)	e6		0.774	0.050	15.4870.000	0.638
19.I use short videos to seek emotional resonance and understanding with others. (Id)	e7		0.765	0.049	15.5450.000	0.658
18.I follow videos on TikTok that can help me solve problems in real life. (Self)	e8		0.709	0.046	15.4470.000	0.625
17.I watch short videos to satisfy my aesthetic needs and artistic appreciation. (Super self)	e9		0.694	0.045	15.3910.000	0.608
16.I use TikTok to find content that inspires my creativity. (Super-ego)	e10		0.682	0.044	15.3700.000	0.602
15.I satisfy my curiosity and desire to explore by watching short videos. (This me)	e11		0.721	0.046	15.6100.000	0.682
14.I follow content on TikTok that reflects my moral standards and values. (Superior Self)	e12		0.717	0.046	15.6180.000	0.685
13.I watch short videos to satisfy the reality principle of self (Eao). For example, I learn practical information (self)	e13		0.726	0.047	15.5220.000	0.650

12.I use short videos to explore and express my subconscious desires. (The id)	e14	0. 824	0. 053	15. 5780. 000	0. 669
29.I watch short videos to satisfy my desire for novelty.	e15	0. 719	0. 047	15. 2660. 000	0. 627
11.I often watch funny or spoof videos on TikTok to release repressed emotions. (The id)	e16	1. 054	0. 066	15. 9230. 000	0. 835
10.I use short videos to fulfill my need for self-actualization, such as creating and sharing personal work. (Self-actualization needs)	e17	0. 892	0. 058	15. 3460. 000	0. 693
9.I use TikTok to find communities that share my interests. (Social needs)	e18	0. 870	0. 058	15. 1080. 000	0. 635
8.I watch short videos to learn new skills to help solve practical problems. (Physiological needs)	e19	0. 661	0. 044	14. 8980. 000	0. 592
7.I follow personal growth related content on TikTok.(Self-actualization needs)	e20	0. 680	0. 045	15. 0260. 000	0. 618
6.I watch short videos to meet basic physiological needs, such as looking for food making tutorials. (Physiological needs)	e21	0. 878	0. 057	15. 3630. 000	0. 698
5.I use short videos to satisfy my need for security, such as understanding news and current events. (Safety needs)	e22	0. 813	0. 053	15. 2400. 000	0. 666
4.I often watch videos on TikTok related to health and safety guidelines. (Safety needs)	e23	0. 736	0. 050	14. 8610. 000	0. 585
3.I watch short videos to regain personal respect and recognition in the virtual world. (Respect requires)	e24	0. 996	0. 065	15. 2130. 000	0. 660
2.I look for content on TikTok to motivate me to enhance my self-esteem and sense of self-worth. (Self-actualization needs)	e25	0. 598	0. 042	14. 3830. 000	0. 508
28.I use TikTok to find content that improves the quality of my life.	e26	0. 645	0. 043	15. 0790. 000	0. 582
1.I use short videos to meet my social needs, such as participating in hot topic discussions. (Social needs)	e27	0. 741	0. 049	15. 1040. 000	0. 635
27.I watch short videos for the satisfaction of communicating and sharing with others.	e28	0. 776	0. 051	15. 2250. 000	0. 616
26.I follow content on TikTok that offers new perspectives and thinking.	e29	0. 706	0. 047	15. 0940. 000	0. 585
25.I satisfy my thirst for knowledge and curiosity by watching short videos.	e30	0. 678	0. 045	15. 0830. 000	0. 583
24.I use TikTok to find content that inspires my inner potential.	e31	0. 707	0. 047	15. 1630. 000	0. 601
23.I watch short videos to escape from the stress and problems in real life.	e32	1. 026	0. 065	15. 6680. 000	0. 755
22.I use TikTok to find videos that satisfy my specific interests.	e33	0. 738	0. 048	15. 4080. 000	0. 666

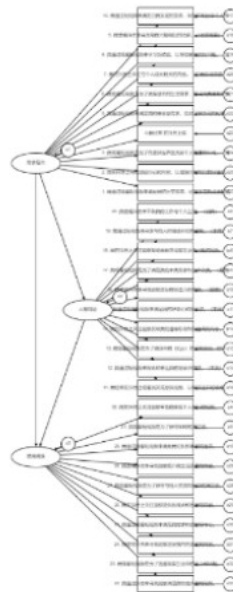
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The table above shows the estimated residual terms of each item after model fitting;

First: the smaller the standard estimated coefficient value corresponding to the general residual, the better;

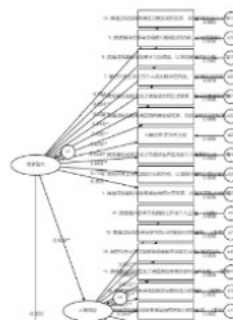
Second: the residual term estimate has relatively small significance and is usually of no practical significance and can be ignored directly.

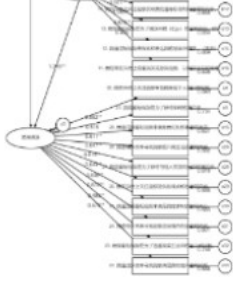
Illustration of Model



☒ Residual display ☒ Show covariance

Model Results Figure





Residuals shown with * signs show covariance

Summary of sample missing status [by](#)

Item	sample number	proportion
Valid samples	521	100. 0%
Remove invalid samples	0	0. 0%
amount to	521	100%

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The table above shows the effective samples and invalid samples excluded from the algorithm model.

- First: the valid sample in the above table refers to the total number of samples with data for all analysis items, and the invalid sample refers to the total number of samples with missing any analysis item;
- Second: If there is missing data in any analysis item of a sample (that is, invalid samples are excluded), such samples cannot be included in the model analysis, and the model can only be analyzed for valid samples;
- Third: The sample situation of each analysis item can be analyzed and checked through the description in the general method, or the specific data can be viewed in the upper right corner.

References [by](#)

- 【1】 The SPSSAU project(2025).SPSSAU.(Version 25.0)[Online Application Software].Retrieved from <https://www.spssau.com>.
- 【2】 Zhou Jun and Ma Shipeng. SPSSAU: Research Data Analysis Methods and Applications. 1st Edition [M]. Electronic Industry Press, 2024.