The validity analysis results were ranked by F4

name	Factor loadings ②				Common degree (common factor variance)
	Factor 1	Factor 2	Factor 3	Factor 4	
1.I use short videos to meet my social needs, such as participating in hot topic discussions. (Social needs)	0.214	0.326	0.156	0.548 0.314	0.476 0.532
2.I look for content on TikTok to motivate me to enhance my self-esteem and sense of self-worth. (Self-actualization needs)	0.290	0.560	0.187		
3.I watch short videos to regain personal respect and recognition in the virtual world. (Respect requires)	0.274	0.338	−0.060	0.621 0.205	0.579 0.544
4.I often watch videos on TikTok related to health and safety guidelines. (Safety needs)	0.297	0.642	0.045		
5.I use short videos to satisfy my need for security, such as understanding news and current events. (Safety needs)	0.138	0.525	0.204	0.274 0.131	0.411 0.480
6.I watch short videos to meet basic physiological needs, such as looking for food making tutorials. (Physiological needs)	0.074	0.611	0.289		
7.I follow personal growth related content on TikTok.(Self-actualization needs)	0.296	0.560	0.143	0.193	0.459 0.637
8.I watch short videos to learn new skills to help solve practical problems. (Physiological needs)	0.317	0.697	0.219		
9.I use TikTok to find communities that are interested in me. (Social needs)	0.379	0.256	0.250	−0.056	0.400 0.381
10.I use short videos to fulfill my need for self-actualization, such as creating and sharing personal work. (Self-actualization needs)	0.319	0.399	0.028	0.359 0.346	
11.I often watch funny or spoof videos on TikTok to release repressed emotions. (The id)	−0.179	0.223	0.682		0.599 0.396
12.I use short videos to explore and express my subconscious desires. (The id)	0.200	0.302	0.404	0.229 0.319	
13.I watch short videos to satisfy the ego's reality principle, such as learning practical information. (Self)	0.229	0.503	0.195		0.440 0.345
14.I follow content on TikTok that reflects my moral standards and values. (Superior Self)	0.361	0.223	0.323	0.310 0.246	
15.I satisfy my curiosity and desire to explore by watching short videos. (This me)	0.227	0.271	0.652		0.551 0.508
16.I use TikTok to find content that inspires my creativity. (Super-ego)	0.597	0.321	0.172	0.010 0.134	
17.I watch short videos to satisfy my aesthetic needs and artistic appreciation. (Superior self)	0.367	0.284	0.459	0.160 0.157	0.451 0.472
18.I follow videos on TikTok that can help me solve problems in real life. (Self)	0.571	0.160	0.310		
19.I use short videos to seek emotional resonance and understanding with others. (Id)	0.300	0.236	0.342	0.347 0.255	0.383 0.441
20.I use TikTok to balance my work and personal life. (Self)	0.545	0.196	0.199		
21.I watch short videos for instant gratification.	0.184	−0.006	0.503	0.430 0.070	0.472 0.521
22.I use TikTok to find videos that satisfy my specific interests.	0.367	0.079	0.613		
23.I watch short videos to escape from the stress and problems in real life.	0.098	0.111	0.292	0.626 0.262	0.499 0.493
24.I use TikTok to find content that inspires my inner potential.	0.566	0.302	0.109	0.128 0.136	
25.I satisfy my thirst for knowledge and curiosity by watching short videos.	0.412	0.170	0.562		0.531 0.461
26.I follow content on TikTok that offers new perspectives and thinking.	0.485	0.229	0.393	0.526 0.172	
27.I watch short videos for the satisfaction of communicating and sharing with others.	0.403	0.175	0.194		0.507 0.532
28.I use TikTok to find content that improves the quality of my life.	0.635	0.279	0.146	0.117 0.238	
29.I watch short videos to satisfy my desire for novelty.	0.500	0.091	0.469	1.015	0.492
30.I follow videos on TikTok that help me achieve my personal goals.	0.587	0.267	0.060		0.476
Root of features (before rotation) ②	10.802	1.530	1.120	3.382%	
Interpretation rate of variance (%) (before rotation) ②	36. 008%	5.101%	3.733%		
Cumulative variance explained rate (%) (before rotation) ②	36.008%	41.109%	44.842%	48.224%	
Root of features (rotated) ②	4.325	3.817	3.491	2.833	
Interpretation rate of variance (%) (rotated) ②	14.416%	12.723%	11.637%	9.445%	
Cumulative variance explained rate (%) (rotated)	14.416%	27.139%	38.776%	48.221%	
KMO price ②	0.959				
Bartle's spherical value ②	5866.488				
df ②	435				
p price ②	0.000				

0 Analytical Recommendations by

Validity analysis is used to study the design rationality of quantitative data (especially attitude scale questions);

First: Analyze the KMO value. If this value exceeds 0.8, it indicates the research data is highly suitable for information extraction (indicating good validity). When the value falls between 0.7-0.8, it suggests the data is moderately suitable for information extraction (indicating acceptable validity). A range of 0.6-0.7 indicates the data is relatively suitable for information extraction (signifying average validity). Values below 0.6 suggest the data are unsuitable for information extraction (indicating average validity). (Note: For studies with only two items, the KMO value will always be 0.5 regardless of other factors.)

Second: then analyze the corresponding relationship between items and factors; if the corresponding relationship is basically consistent with the research psychological expectation, it indicates that the validity is good;

Third: If the validity is poor; or the correspondence between factors and items is seriously inconsistent with expectations, or the common value corresponding to a certain analysis item is less than 0.4 sometimes 0.5 is the standard; then it is possible to consider deleting the items;

Fourth: There are common criteria for deleting items; first, the common value is less than 0.4 (sometimes 0.5); second, there is a serious deviation between the analysis item and the factor corresponding relationship;

Fifth: repeat the above 1-4 steps; until KMO reaches the standard; and the correspondence between items and factors is basically consistent with the expectation, finally indicating good validity;

Sixth: summarize the analysis.

White intelligent analysis by

Validity research evaluates the rationality and significance of research items. This analysis employs factor analysis as a data processing method, utilizing indicators such as KMO value, communalities, variance explained ratio, and factor loadings to comprehensively assess data validity. The KMO value determines the suitability of information extraction, communalities help eliminate unreasonable research items, variance explained ratio indicates information extraction levels, while factor loadings measure the correspondence between factors (dimensions) and items. As shown in the table: 9. For communalities, I use TikTok to find communities aligned with my interests (social needs); 10. I satisfy self-actualization needs through short videos like creating and sharing personal works (self-actualization needs); 12. I explore and express subconscious desires through short videos (id); 14. I follow content reflecting my moral standards and values on TikTok (superego); 19. I seek emotional resonance and understanding through short videos (id). The communalities for these shared items are all below 0.4, indicating ineffective expression of research information. Therefore, these five items should be removed and reanalyzed.

[The Fixed Small]

1: If the corresponding relationship between a research item and dimension (factor) is completely inconsistent with the expectation, the research item can be considered to be deleted;

2: If there is no corresponding relationship between a research item and a dimension (factor), the research item can be considered to be deleted;

KMO and Bartlett's test	field	
KMO price	0.959	
Bartlett's sphericity test	Approximate chi-square	5866.488
	df	435
	p price	0.000

Analysis suggests that

If you only use KMO and Bartlett test for validity, that is, ignore the correlation between dimensions and analysis items, variance interpretation rate, etc.;
First: KMO analysis: A value above 0.8 indicates high suitability for information extraction (serving as a measure of validity). Values between 0.7-0.8 suggest moderate suitability, while those between 0.6-0.7 indicate acceptable performance. Values below 0.6 demonstrate difficulty in extracting information (indicating low validity).
Second: the validity analysis requires the Bartlett test (the corresponding p value should be less than 0.05);
Third: If there are only two analytical items, KMO will be 0.5 no matter what.

Intelligent analysis comes out of

The KMO value is greater than 0.8, and the research data are very suitable for information extraction (which reflects the good validity from the side).

The validity was verified by KMO and Bartet test. As can be seen from the table above, the KMO value is 0.959.

Summary of sample missing status Tian

Item	sample number	proportion
Valid samples exclude invalid samples	521	100.0%
	0	0.0%
amount to	521	100%

Analysis suggests that

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: You can analyze and check the sample situation of each analysis item through the description in the general method, or you can view the specific data in the "View Data" in the upper right corner.

M references are listed

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