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I KNOW YOU: USER PROFILING ON SOCIAL MEDIA USAGE OF CHINESE PRIVATE UNIVERSITY STUDENTS

Yunyan Wang[1] & Poh-Chuin Teo[2]
[1]*College of Education, Yunnan Technology and Business University, China*
[2]*Azman Hashim International Business School, Universiti Teknologi Malaysia, Malaysia*
[2]*Correspondence Email: pohchuin@utm.my*

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Abstract

Chinese university students' use of social media is becoming increasingly diverse, and students from private universities in China have different group characteristics than those from public universities. This research endeavoured to establish a comprehensive user profile of Chinese private university students by examining their social media usage patterns. The purpose was to gain profound insights into the distinctive attributes of students in China's private universities within the context of the current era characterised by extensive data availability. This study employed a questionnaire-based research approach to acquire a dataset consisting of 673 instances of social media usage among students enrolled in private universities in China. Subsequently, exploratory factor analysis was performed using the Statistical Package for Social Sciences (SPSS) software, extracting five (5) categorical feature tags. Combined with the extracted feature tags and the usage status and perception dimension data, the K-means cluster analysis method was used to perform rapid clustering to derive four (4) differentiated groups comprising information exchange-oriented users, instrument-oriented users, dependent-oriented users and entertainment-oriented users. Furthermore, thorough analysis and description of the essential attributes for these 4 user profile categories have been conducted by incorporating the fundamental user information.

Keywords: *Social Media; User Profiles; Behavioural Motivation; Private Universities; University Students.*

A. Introduction

Considering the rising advancement of mobile networks and social media platforms, the population of social media users is expanding rapidly, accompanied by a proliferation of diverse usage scenarios. By early 2023, the number of social media users in China had reached 1.03 billion (Data Reportal, 2023), while the number of Internet users in China stood at 1.079 billion in August 2023 (Global Times, 2023). The surge in social media use has, of course, come together with a significant increase in the amount of time people spend online (Ortiz-Ospina & Roser, 2023). According to GWI (2022), Chinese Internet users spend an average of 3.81 hours online daily, with 1.97 hours dedicated to social media. Meanwhile, most social media users, precisely 70%, are below the age of 35 (Jamie, 2023).

The concepts of "Web 2.0" (Murugesan, 2007), "Big Data" (Yang et al., 2017), and "Citizen as Sensors" (Goodchild, 2007) have significantly shaped the landscape of social media, facilitating global information generation and dissemination through virtual communities. This has led to the emergence of extensive sensing networks for efficient collection, storage, and analysis of topic-specific data (Gong & Yang, 2020; X. Huang et al., 2022; Li et al., 2021; X. Ye et al., 2021). Modern adolescents are growing up in a media-rich environment, with their lives intertwined with social media. Among various student age groups, university students stand out as prominent users of social networking (Azizi et al., 2019; Zhao et al., 2023).

Although there has been increasing research on social media use among university students in recent years, scant attention has been given to this demographic within the context of private universities. The higher education landscape in China covers 3,013 institutions, accommodating 46.55 million students, including 764 private universities with a combined enrolment of 9,248,900 students across general and vocational programmes (Department of Development Planning of MOE, 2022). These private universities are pivotal in nurturing exceptional talents to serve society within China's higher education framework.

In private universities, university students exhibited dynamic ideation and practical solid abilities while at the same time displaying suboptimal learning performance, including a tendency to prioritise extracurricular activities over learning (Wang & Zhu, 2019), indistinct learning objectives, and diminished motivation (Yu, 2020). Furthermore, they demonstrated less engagement in reading for recreational, utilitarian, and academic purposes (Jiang, 2020). The ongoing COVID-19 pandemic has also necessitated the adoption of novel teaching methods, such as collaborative multimedia distance learning, leading to a pivotal role for social media as an essential platform for university students (Kolhar et al., 2021).

The multifaceted effects of social media usage on well-being have led to a nuanced perspective, prompting a comprehensive study on university students' social media usage behaviour within the significant data era (Valkenburg et al., 2022). University students play crucial roles in supporting industry players in developing effective marketing strategies due to their unique perspectives and behaviours. They offer unique perspectives on the current trends and preferences among their peers due to their varied backgrounds and interests. In addition, as early adopters of emerging technologies and social media platforms, they also provide industry players with essential data on effective digital marketing techniques. This research has the potential to illuminate the developmental characteristics of this specific group while also informing improved educational management practices for private institutions, ultimately facilitating enhanced support and guidance.

The concept of a User Profile, first introduced by Cooper (1999), entails a virtual representation of a real user. User profiling is pivotal in personalisation processes (Pratiwi et al., 2018; Salonen & Karjaluoto, 2016), encompassing a compilation of user information extracted from extensive datasets (Quintana et al., 2017). Leveraging the Big Data environment, user profiling involves abstracting tagging information and refining basic details, social attributes, habits, interests, preferences, social structure, and consumption behaviour, culminating in a comprehensive model that encapsulates the user's overall profile (Yan & Ning, 2023). As a tool for precision information services, user

profiling has garnered significant scholarly attention and practical implementation across diverse domains, including healthcare, libraries, and e-commerce.

User profile construction involves collecting and mining user data, segmenting profile labels, and describing user characteristics (Gao, 2019). Creating user profiles is to depict users and comprehensively reconstruct their overall pictures through data. Data collection in the significant data era can be extracted from vast databases using professional software and technology and through methods like interviews and questionnaires for specific groups. User profiling finds widespread application on the Internet, capturing behaviours like browsing, clicking, and commenting to extract and analyse behavioural data, revealing distinctive attributes, patterns, and attitudes of Internet users. For instance, (Azzam et al., 2022) introduced a model for dynamic user profiles on X (previously known as Twitter), incorporating static profiles, user activities, and followers to determine users' positions within topic spheres.

Recently, user profiling has extended to education, providing a reference for educational management and talent development. Scholars have employed user profiling in student learning (Chen & Zhou, 2021; Yu et al., 2020), comprehensive quality evaluation (Tu et al., 2021; Zhang et al., 2021), entrepreneurship and employment services (Dong et al., 2022; Huang, 2022), as well as student education and management (Liu, 2021).

The term "social media" emerged in 2008 with Mayfield's definition of it as a contemporary form of online media facilitating user engagement, characterised by communication, participation, openness, and community (Mayfield, 2008). In research, social media is an umbrella term for various online platforms, including blogs, forums, social networks, microblogs and video sharing (Aichner & Jacob, 2015). Beyond holiday snapshots or promotions, social media finds diverse applications, particularly among university students, who heavily engage with it for social interaction, entertainment, information exchange, and study. Studies have examined motivations for social media use (Jarman et al., 2021; Jarrar et al., 2022; Ren

& Chen, 2020; Rodgers et al., 2021), its impact on students (Chen et al., 2021; Yin et al., 2021; Dai et al., 2022; Handayani et al., 2020), and information dissemination behaviour (Cino & Formenti, 2021; Zhou et al., 2021).

This study aims to investigate the motivational factors driving social media usage among university students enrolled in private universities, focusing on examining their behavioural characteristics. A comprehensive content analysis was carried out by (Gan et al., 2018), incorporating 54 literature sources and focusing on user behaviours within social networks from the perspectives of usage and satisfaction. This analysis yielded a framework outlining five (5) distinct categories of needs influencing social network behaviours: cognitive, emotional, personal integration, social integration, and pressure release needs. Ye and Shao (2021) contributed to this field by establishing a set of 22 demand motives and conducting data research to formulate a comprehensive behavioural profile of social network activities among university students.

Guo and Zhang (2021) employed a questionnaire-based approach to investigate usage behaviour within online health communities among 520 university students, subsequently constructing a user group profile. Moreover, studies by Lu (2019) and Yao (2018) delved into social media utilisation patterns and motivational aspects among higher education students, aiming to identify distinctive characteristics within demographic subgroups. Johnson (2008) proposed a comprehensive framework derived from Facebook research, delineating seven (7) primary motivations driving social media usage, comprising social connection, group engagement, browsing, photo sharing, gaming, entertainment, social exploration, and status updates.

In addition, (Papacharissi and Mendelson, 2020) identified nine (9) motivations associated with social media use, encompassing time utilisation, entertainment, relaxation, and information acquisition. Further contributions to this field include the study of adolescents' self-representation on social media by Mann & Blumberg (2022) and the construction of a social media user profile by (Lee et al., 2020), focusing on the social media practices of YouTube.

B. Method

This study delves into the concept of profile construction, which entails the systematic utilisation of diverse data derived from the social media activities of university students to characterise and depict the student population effectively. Tags are employed as descriptors to capture distinct attributes of students, representing their characteristics. By aggregating tags, a comprehensive user profile is formulated. Constructing a tag system involves the purposeful generalisation of subject data, serving as symbols representing distinct categories of user characteristics.

Analysing user profiles based on students' social media behaviour offers a multifaceted understanding of the social media usage patterns among private university students. This research examines the demand-motivation characteristics of private university students engaged in social media activities. The approach includes a literature review, empirical research, and interviews to gather relevant insights. The user profile construction involves four (4) steps: creating a conceptual model, collecting and pre-processing data, tagging data, and presenting user profiles, as depicted in Figure 1.

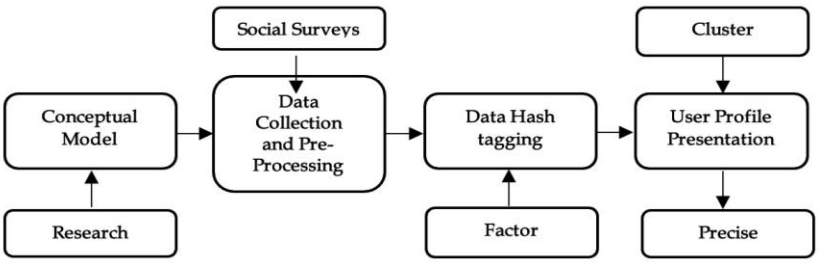

Figure 1. User profile construction process

Creating the conceptual model involves outlining the research methodology and procedure in alignment with the study's objectives to establish an initial research framework. Data collection entails systematically gathering data based on the indicators outlined in the conceptual model, encompassing fundamental information about private university students, social media usage patterns, behaviours, and perceptions.

User data is obtained through social surveys, online data collection, and database compilation from various platforms. Data pre-processing involves organising, filtering, and transforming collected data into a consolidated and standardised dataset suitable for subsequent analysis. Data tagging encompasses feature analysis, extraction of user data, intrinsic association mining of usage behaviour data, and refining these features into tag definitions. User profile presentation involves analysing user tags to formulate a comprehensive user profile model. This model is visually represented using intuitive graphical displays, such as radar charts, histograms, and tag clouds.

Initially, this study conducted interviews with students from private universities, meticulously recording and analysing the results. Existing literature on factors influencing social media usage behaviour (Chen et al., 2021; Dai et al., 2022; Yin et al., 2021) was integrated into the analysis, summarising social media behaviour and motivation among private university students. This synthesis aided in refining and selecting measurement items related to social media usage behaviour and motivation for this study.

User and user behavioural characteristics are the constituent elements of the quantitative persona model that this study will ultimately construct. The primary objective of the interviews conducted in this research was to gain insight into university students' social media usage behaviour and motivations. These interviews followed a question-and-answer format, allowing respondents to express their views and experiences regarding their usage patterns freely. The interview protocol followed a structured outline, encompassing the following key aspects: (1) Gathering basic information about the interviewees, including gender, age, and academic major; (2) Exploring the social media usage behaviour and motivations of the interviewees. This entailed investigating the primary social media platforms utilised by the interviewees, their frequency and duration of social media usage, the predominant behaviours exhibited while using social media and the level of satisfaction derived from their social media experiences.

A total of 20 university students enrolled in private universities were selected to participate in the interview process. The sample consisted of nine (9) male students and 11 female students. Regarding academic standing, the distribution included 11 first-year students, 5 sophomores, and 4 juniors. The data obtained from the interviews was integrated into a text file, faithfully preserving the original statements provided by the interviewees. The collected data was then organised, and corresponding attributes were assigned. Subsequently, data with similar attributes were sorted and aggregated into distinct categories. Attributes and dimensions deemed unrelated to the interview's purpose were excluded from the analysis. This rigorous process culminated in forming 16 items that encapsulated the behavioural motivations underlying social media usage.

This study constructs a user profile tag system from four dimensions: essential information, usage status, perception, and behavioural motivation. We can refer to Figure 2 for further details.

1. Basic Information Dimension

The essential information dimension contains demographic information related to the users. It includes information on the individual characteristics of university students, such as gender, education and grade.

2. Usage Status Dimension

The usage status dimension contains information on the years of social media use, frequency of use, daily usage hours and other usage status of private university students.

3. Usage Perception Dimension

The usage perception dimension is a psychological value judgment of the use of social media by private university students, such as information on the importance of social media, dependence on social media, and the impact of social media (positive or negative).

4. Behavioural Motivation Dimension

The behavioural motivation dimension contains information regarding the motivations driving private university students' social media usage behaviours. This dimension is delineated by including the 16 behavioural motivation items identified in the analysis above.

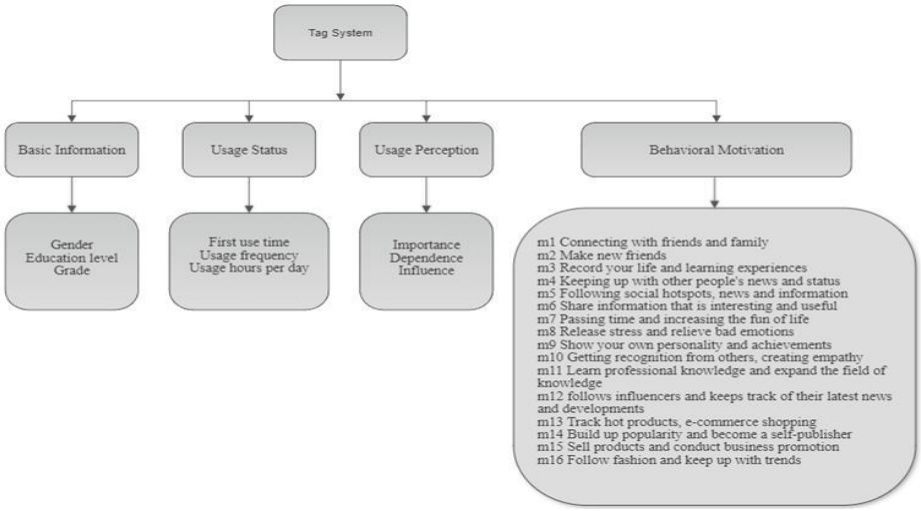

Figure 2. Tag system for user profiling

This study encompassed two (2) primary components: firstly, the overall characteristics of the social media usage behaviour of university students in private universities, and secondly, a user profile study of the social media usage behaviour of students in private universities. This study developed questionnaires to investigate the social media usage behaviour of university students in private universities. The study encompassed four distinct parts. The first part focused on capturing the demographic characteristics of the respondents, encompassing variables such as gender, educational background, and academic grade of the university students. The second part involved administering a survey to examine the usage behaviour of the participants, including the duration of their social media usage, frequency of engagement, and the duration of each usage session.

Meanwhile, the third part entailed assessing the respondents' perception of social media usage, encompassing aspects such as the perceived importance

of social media, levels of dependency on social media, and the perceived influence of social media on their lives, including both positive and negative impacts. Finally, the fourth part involved the administration of a questionnaire designed to measure the motivation underlying the respondents' use of social media. A 5-point Likert scale was adopted for this purpose. The research data were subsequently analysed using SPSS software, which involved conducting tests to assess the reliability and validity of the data, performing frequency analysis, factor analysis, and cluster analysis.

C. Result and Discussion

1. Result

The respondents for this study were selected based on two primary considerations: sample size requirements and operational feasibility. The target population consisted of students enrolled in freshman to junior year at a Chinese private university, where the researcher holds a teaching position. This specific cohort was chosen as it met the necessary sample size criteria and ensured practicality in data collection and research implementation. Table 1 shows that 700 questionnaires were distributed and 673 questionnaires were returned, indicating a return rate of 96.14%. Among the returned questionnaires, 318 were completed by male students, accounting for 47.25% of the total, while 355 were completed by female students, constituting 52.75%.

Table 1. Demographics profiling

Factor		Frequency	Per cent
Gender	Male	318	47.25
	Female	355	52.75
Education	Junior college students	271	40.27
	Undergraduate students	402	59.73
Grade	Freshmen	248	36.85
	Sophomores	191	28.38
	Juniors	234	34.77

Based on the findings presented in Table 2, this study reveals notable observations concerning all respondents: more than 88% of university students first approached social media in junior high school or

before, indicating that most private university students have been using social media for more than three (3) years and are experienced in using it. Most respondents, precisely 59.29%, reported frequent engagement with social media platforms. Additionally, 39.08% of respondents indicated they dedicate more than three hours daily to their social media usage. This duration surpasses the average daily usage time observed amongst Chinese Internet users, which stands at 1.97 hours per day (GWI, 2023). The most common social media used by students in higher education are acquaintance-based social media, such as WeChat and QQ, followed by short-video-based social media, such as Douyin and Kuaishou, as well as blogging/ community-building media, such as Weibo and Xiaohongshu.

Table 2. Social media uses the status of private university students

Item		Frequency	Percent
First use time	Primary school	291	43.24
	Junior high school	302	44.87
	Senior high school	64	9.51
	University	16	2.38
Usage Frequency	Check frequently	399	59.29
	Check occasionally	201	29.87
	Rarely checked	67	9.96
	Unchecked	6	0.89
Usage hours per day	Within an hour	111	16.49
	1-3 hours	299	44.43
	4-6 hours	177	26.30
	More than 6 hours	86	12.78

Upon completion of the survey, the collected data was meticulously recorded, subjected to comprehensive analysis, and subsequently presented as a bar chart, as illustrated in Figure 3. The aforementioned graphical representation unveiled a noteworthy observation, revealing that a significant % of university students, 74%, exhibited a discernible inclination towards reliance on social media platforms. Additionally, a significant proportion of students, accounting for 91.97%, acknowledged the importance of social media in their lives. Furthermore, a considerable percentage of university students, comprising 62.41%, believed that the impact of social media on them was

predominantly positive. Among the respondents, 28.83% believed that the positive and negative effects were balanced, while only 8.77% believed that the adverse effects outweighed the positive effects.

The analysis of social media usage perception among university students in private universities reveals a predominantly positive outlook. Among the perceived positive effects of social media reported by the participants, the top-ranking factors were as follows: acquiring diverse professional knowledge, accessing a more comprehensive range of information, enjoying enhanced shopping convenience, enriching personal lives, and broadening social connections and friendships. Conversely, the perceived adverse effects of social media, in descending order of significance, included a decline in face-to-face social skills, time wastage, potential privacy breaches, and adverse impacts on academic pursuits.

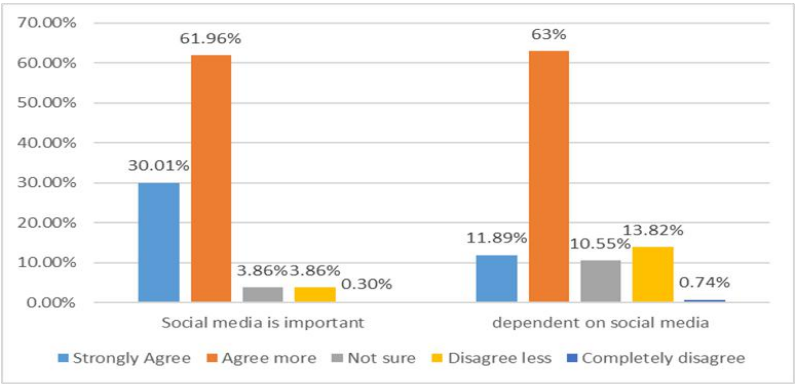

Figure 3. Degree of usage perception of social media

A total of 16 questions on social media use behaviour motivation in the survey questionnaire were measured using a 5-point Likert scale, with 5 levels ranging from low to high to indicate the degree of agreement for private university students on social media use behaviour motivation. Exploratory factor analysis was done on 16 items related to social media use behaviour to get more information about the behaviour traits of private university students who use social media and to create motivational labels for the social media user profiles of these students. The dimension was narrowed down to get the feature labels from the data.

Firstly, the reliability of the scale items is tested using the SPSS software. The Cronbach's alpha coefficient for the 16-item test yielded a value of 0.920, surpassing the recommended threshold of 0.7, indicating a high internal consistency and reliability level for the questionnaire. The values of Cronbach's alpha coefficient after item deletion were all in the range of 0.911-0.921, and the consistency of repeated measures was good for all questionnaires. Subsequently, the SPSS software was employed to assess the construct validity of the behavioural purpose associated with social media usage. The results of this analysis are presented in Table 3, wherein it is observed that the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy attained a value of 0.917, surpassing the acceptable threshold of 0.9. Furthermore, the obtained significance level was less than 0.05, signifying statistical significance. Thus, based on these findings, it can be concluded with confidence that the employed scale is well-suited for exploratory factor analysis.

Table 3. KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**.917**
Bartlett's Test of Sphericity	Approx. Chi-Square	6785.762
	df	120
	Sig.	.000

In order to differentiate the purpose of social media use behaviour among university students in private universities, the 16-item was dimensionally reduced using SPSS software to obtain feature labels. The exploratory factor analysis was tested using principal component analysis and maximum variance rotation. After several common factor extractions of the survey data, it was found that when five factors were extracted, the indicators were well differentiated and cumulatively explained 75% of the Variance, as shown in Table 4, except for items m3 and m11, which appeared to show high loading values on two factors at the same time, while all other items had high loading values on only one (1) factor. The high loading values were above 0.45, indicating the scale has good construct validity.

Tabel 4. Rotated component matrix and total variance explained

Item	Component				
	1	2	3	4	5
m15	0.881				
m14	0.861				
m16	0.796				
m13	0.771				
m5		0.77			
m6		0.738			
m11		0.686	0.468		
m1		0.621			
m3		0.582			0.534
m10			0.722		
m9			0.702		
m12			0.496		
m7				0.837	
m8				0.685	
m2					0.803
m4					0.68
Variance Explained (%)	46.548	13.967	5.657	5.28	4.086
Total Variance Explained (%)	46.548	60.515	66.173	71.453	75.538

Feature Tag 1: It is related to product sales, commercial promotion, and reputation building; the emergence of self-publishing capabilities; the pursuit of fashion and trend awareness; and the tracking of popular products together with engagement in e-commerce shopping, among others. This reflects the purpose of private university students using social media for consumption and commercial sales, which is comprehensively named E-commerce Transactions.

Feature Tag 2: It is related to staying informed about social trends and news, sharing engaging and valuable information, acquiring professional knowledge and broadening one's knowledge base, communicating with friends and family members, and documenting personal life and learning experiences. This reflects the purpose of private university students using social media to obtain information and knowledge and is comprehensively named Information Management.

Feature Tag 3: It is related to seeking validation and empathy from others, expressing one's personality and accomplishments, and actively

following influential individuals to stay updated on their latest information and developments. This reflects the purpose of private university students using social media to showcase themselves and pursue recognition, which is comprehensively called social identity.

Feature Tag 4: It is related to time diversion and enhancing the enjoyment of life, as well as serving as a means of stress relief and alleviating negative emotions. This reflects the purpose of using social media to relieve stress for entertainment, which is comprehensively named Entertainment and Leisure.

Feature tag 5: It is related to the act of forging new connections and acquiring knowledge about the status or circumstances of others. This reflects the purpose of social media, which is to establish connections with others and is comprehensively named Relationship Building.

Following the extraction of distinct behavioural motivation tags from social media users among private university students, this study applies a cluster analysis algorithm to classify users. The classification process combines six (6) research data dimensions related to usage habits and usage perception, namely the time of initial use, usage frequency, duration of use, perceived importance, dependency, and influence of social media. Cluster analysis, a multivariate statistical method, is employed primarily for data classification. This study uses the K-means algorithm (K-means) in cluster analysis to cluster all sample data to achieve user clustering. Mean clustering involves calculating the Euclidean distance from each sample data point to K centroids and classifying all samples into K classes according to the closest distance to the centroid. The findings on Clustering Center Value are presented in Table 5.

Table 5. Clustering center value

Dimension	**Variables**	**Cluster**							
		4		**5**		**6**		**7**	
		F	**Sig.**	**F**	**Sig.**	**F**	**Sig.**	**F**	**Sig.**
Feature tag	E-commerce Transactions	37.098	0	23.095	0	52.942	0	20.506	0
	Information Management	21.443	0	48.697	0	44.696	0	45.101	0

Dimension	Variables	Cluster							
		4		5		6		7	
		F	Sig.	F	Sig.	F	Sig.	F	Sig.
Usage status	Social Identity	67.749	0	15.841	0	49.257	0	36.895	0
	Entertainment and Leisure	96.995	0	54.078	0	44.71	0	64.011	0
	Relationship Building	34.499	0	75.18	0	3.794	0.002	33.357	0
	First use time	67.342	0	42.989	0	39.393	0	36.33	0
	Usage frequency	152.819	0	73.555	0	65.161	0	95.034	0
	Usage hours per day	66.488	0	77.783	0	92.78	0	58.54	0
Usage perception	Importance	49.443	0	93.651	0	38.375	0	77.135	0
	Dependence	179.565	0	205.255	0	91.716	0	81.812	0
	Influence	35.581	0	25.08	0	121.264	0	23.808	0

Initially, the social media usage status data, usage perception data, and feature tag data were subjected to standardisation using SPSS software. The standardised data was subsequently subjected to K-means clustering analysis. Multiple iterations of clustering analysis were performed by varying the number of categories, and through rigorous analysis and comparison, the most suitable cluster configuration was identified.

In this study, clustering was conducted with respect to the number of categories ranging from 4 to 7. The Sig values obtained after clustering were all less than 0.05, so the clustering effect significantly differed on all eight (8) variables. Notably, when the number of clusters was set to 4 categories, the F-values for each feature factor displayed the most pronounced differences, suggesting a more apparent distinction between user categories. As a result, the determination was made to utilise 4 categories for clustering. The final cluster centroids and the number of clustered cases corresponding to the K-means clustering analysis from SPSS are shown in Table 6.

Table 6. Final Clustering Center Value and Number of Clustering Cases.

Variables	Cluster 1	Cluster 2	Cluster 3	Cluster 4
E-commerce Transactions	-0.55235	0.14962	0.33253	-0.48217
Information Management	0.49075	-0.46064	0.08449	0.00111
Social Identity	-0.51827	0.23755	0.39978	-0.7552
Entertainment and Leisure	-1.04809	-0.24655	0.1306	0.78345
Relationship Building	0.0229	-0.11779	0.35084	-0.62962
First use time	-0.17221	-0.81077	0.35076	0.33233
Usage frequency	-0.29642	-1.04789	0.51706	0.3474
Usage hours per day	-0.27866	-0.66679	0.11741	0.74085
Importance	-0.77522	-0.21407	0.43622	-0.11084
Dependence	-1.5184	-0.09628	0.48705	0.18879
Influence	0.08507	-0.63744	0.31297	0.01913
Cases	98	157	285	133

Cluster 1 users demonstrate moderate experience, duration, and frequency of social media usage. However, they exhibit distinct tendencies towards information management. Hence, this cluster is labelled as Information Exchange-oriented users. Cluster 2 consists of users with low experience, length, and frequency of use, but they stand out in social identity, e-commerce transactions, and relationship building. These users tend to utilise social media selectively, earning them the label of instrument-oriented users.

The third cluster consists of users with high values in terms of experience, length, and frequency of use. They excel in various aspects, including social identity, e-commerce shopping, relationship building, information management, entertainment, and leisure. As a result, they are labelled as dependent-oriented users. Lastly, the fourth cluster is characterised by users with high values in length of use, experience, and a particular emphasis on entertainment and leisure. Their strong reliance on social media usage leads to their classification as entertainment-oriented users. Figure 4 illustrates the radar map of the final clustering centre value.

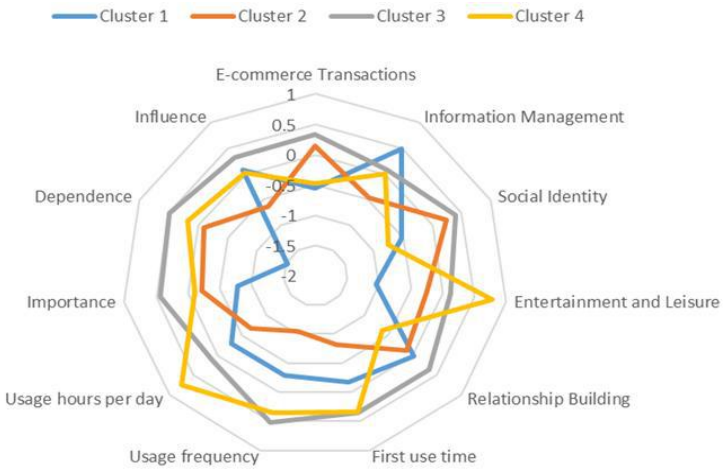

Figure 4. Radar map of final clustering centre value

To better demonstrate the social media usage user profiles of the various types of private university students derived from the above analysis, the four categories of user cases derived from the clustering analysis in SPSS were analysed separately to carry out the profile description. Table 7 displays the data for each cluster based on the corresponding user, segmented according to gender, education, and grade. On the other hand, Table 8 illustrates the distribution of social media types utilised by the four user clusters in terms of their respective percentages. Across all user clusters, there is an overarching tendency where acquaintance-based social media platforms exhibit the highest percentage. Subsequently, these data will be further elaborated and discussed in the following sections of this study.

Table 7. Descriptive statistics for four clusters of users

Cluster		Information Exchange-oriented users		Instrument-oriented users		Dependent-oriented users		Entertainment-oriented users	
		Cases	Percent	Cases	Percent	Cases	Percent	Cases	Percent
Gender	Male	50	51	94	59.90	134	47	40	30.10
	Female	48	49	63	40.10	151	53	93	69.90
Education	Junior college students	50	51	62	39.50	102	35.80	57	42.90
	Undergraduate students	48	49	95	60.50	183	64.20	76	57.10

Cluster		Information Exchange-oriented users		Instrument-oriented users		Dependent-oriented users		Entertainment-oriented users	
		Cases	Percent	Cases	Percent	Cases	Percent	Cases	Percent
Grade	Freshmen	48	49	59	37.60	92	32.30	49	36.80
	Sophomores	24	24.50	49	31.20	85	29.80	33	24.80
	Juniors	26	26.50	49	31.20	108	37.90	51	38.30

Table 8. Types of social media used by four clusters of users.

Types	Information Exchange-oriented users	Instrument-oriented users	Dependent-oriented users	Entertainment-oriented users
Acquaintance-based social media	4.49	4.25	4.68	4.73
Stranger-based social media	1.52	2.2	2.11	1.31
Short Video-based social media	3.9	3.92	4.38	4.12
Blogger, community-based social media	2.84	3.04	3.35	3.12
Live Streaming based social media	1.63	2.42	2.51	1.65
Question and Answer: social media	2.35	2.82	2.78	2.39
Cases	98	157	285	133

2. Discussion

The study findings reveal distinct user categories based on behavioural patterns and motivations within social media usage. The population of information exchange-oriented users constitutes the smallest sample proportion at 14.56%, totalling 98 individuals. These users engage in information management, connecting with friends and relatives, sharing relevant content, recording life and study experiences, staying updated on social trends and news, and expanding their knowledge domain. This group's prevalent social media platforms include acquaintance-based social networking and short video platforms. Among these users, males comprise 51%, while junior college students constitute 51% of the group, of which predominantly are freshmen.

Instrumental-oriented users, totalling 157 cases or 23.33% of the sample, are characterised by behaviours related to e-commerce transactions and social recognition. Their primary motivations involve showcasing achievements, gaining recognition, generating empathy, accumulating popularity, and engaging in self-publishing, commercial sales, and promotions. This group exhibits low usage frequency and limited experience, favouring live social media and Q & A platforms. Among these users, 59.9% are male, while 60.5% are undergraduates, notably first-year students.

Dependent-oriented users represent the largest category, with 285 cases constituting 42.35% of the sample. Their behaviours span multiple dimensions: e-commerce transactions, information management, social identity, entertainment, leisure, and relationship-building. This group demonstrates prolonged social media engagement, high frequency, extensive experience, and strong dependency. Females account for 53%, while undergraduate students, primarily junior students, comprise 64.2%.

Entertainment-oriented cases amount to 133, or 19.76% of the sample. Tagged by entertainment and leisure behaviours, these users engage in time-passing, enhancing life enjoyment, stress relief, emotional release, and connection with peers and relatives. They exhibit extended social media use, heightened experience, and notable dependency. Short video, blogs and community-based platforms are their preferred choices. Within this category, females represent 69.9%, while 57.1% are undergraduate students, particularly junior students.

These user categories highlighted distinct behavioural profiles and motivations, shedding light on the diverse nature of social media engagement amongst the sampled population.

To recap, this research aims to enhance understanding regarding social media usage among private university students in China. Through analysing usage patterns, this study aims to identify distinct trends and behaviours specific to a particular group. By doing so, it seeks to contribute to a comprehensive understanding of the diverse landscape of social media usage among college students in China. By comprehending their social media usage

patterns, industry players can acquire valuable insights into their behavioural characteristics and areas of interest and preferences. The inclusion of this comprehensive user profile enables organisations to customise their marketing strategies, educational resources, and student support services in order to meet the distinct needs and interests of this demographic effectively.

D. Conclusion

Overall, university students attending private universities in China exhibit a higher average daily usage duration of social media compared to the national average, demonstrating a heightened dependence on these platforms. This group's most utilised social media types include acquaintance-based platforms such as WeChat and QQ, short video platforms like Douyin and Shutterbugs, and blog community-based platforms such as Weibo, Xiaohongshu, and Douban. According to the user profile categories discussed in the previous sections, dependent-oriented users are the most significant social media users among students at private universities, followed by instrument-oriented users.

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