Bibliometric Research on Youth Entertainment Activities in Social Media between 2000 and 2021 from Scopus

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ABSTRACT

The development of information communication and technology have changed the entertainment activities of Youth. This research elucidated the knowledge base of Youth Entertainment Activities in Social Media (YEASM) by applying the bibliometric methods for 531 Scopus articles from 2000 to 2021. The results showed the annual growth trend of publications over time, leading the United States. Small and emerging research groups, contributed to the YEASM related research community between 2017 and 2021. The sources were interested in four published themes, including Cyber behaviour and Cyberpsychology, Human-Computer interaction, Business studies, and Tourism studies. In addition, nine themes in YEASM were explored, of which the two most important topics were about virtual games and the well-being of young people. Besides that, two other concerned themes were gender & internet usage and adolescent enjoyment in social media. Moreover, ten topical topics were addressed, in which COVID-19 context was a new approach in several studies. Overall, this research could be valuable reference information for scientists in determining future research directions.

Keywords: Online entertainments, Youth, Bibliometric analysis, Social well-being, COVID-19, Social interaction

INTRODUCTION

The innovation of information communication and technology was the driver of the rapid development of social media. The Internet was ubiquitous globally and used for social purposes also personal communication.[1] Social media was one of the revolutionary trends that changed users' habit,[2] e.g., study, work, and entertainment.[1] There was no distance between nations or ethnic groups worldwide when people used digital media technologies.[3]

Social media was determined as a group of Internet–based applications built on the ideological and technological foundation of Web 2.0 in which users could create and exchange their content.[4] According to Han 2018,[5] social media was considered a distinct subset of media tools with common traits and characteristics. People could facilitate perceptions of interactions among users, adopting the valuation from their creation contents.

The World Wide Web invention in 1991 had enlarged networked media, formed online communities and created a new global infrastructure for people to communicate.[6] From the late 1990s onward, many online communication platforms had spread out and become popular applications for humans.[7] The initial era of social media started when an early social networking site appeared in "Open Diary" for over 20 years and many new terms, e.g. weblog, blog.[8] Then, the appearance of Web 2.0 applications gave the users many free choices of interaction, collaboration and other kinds of virtual content in social media dialogue.[9] The development of new online social media applications brought a new primary aim to general social purposes. These tended to be the social presence, media richness, and self-presentation/self-disclosure. The virtual social world requires a higher level of self-disclosure that forces users to behave differently.[4]

Social media affected various areas, including education, entertainment, politics, ethical issues, and strategic communication.[10] Besides, it impacted people's health in general and specifically on perception, activities and other psychological issues of Youth.[11] The rapid development of TV cab and the Internet brought out various experiments that differ with diverse types of entertainment activities, e.g. video streaming,[12] location–based video gaming[13] or social media poetry.[14] The recent studies were implemented to determine

the perception, behaviours and level of acceptance when people interact with new social media applications.[15]

The benefits of using social media were admitted. Students could seek information materials and other current issues sources, share information or connect to others easily and quickly anytime, anywhere.[16] Besides, social media was considered an excellent channel to educate personal characteristics.[17] Lin *et al.* 2018[18] explored that playing online games helped Taiwan students increase emotion, happiness, and comfort in real life. Savela *et al.* 2020[19] pointed out that the influence of AR functioned on social interaction enhanced their emotional and social activities and improved their academic outcomes. Besides, entertainment on social media applications allowed people to connect and gather into various groups, e.g. role-playing games and strategy games improve interaction skills, self-confidence, and risk of acceptance.[20,21]

However, if social media is uncontrolled, it could negatively impact personal performance.[22] Youth behaviours such as smoking, bullying or other destructive behaviours were the consequences of some advertisements.[23] The children got sleep disorder syndrome such as tiredness, nightmare, or talking while sleeping, cause of spending too much time watching games and TV shows.[24] The influence of violent games was also a prevalent issue in many decades cause of the tendency to imitation, animation characters or behaviour in real life.[25] Moreover, violent video games increased extremist beliefs, aggressive behaviours.[26,27]

Internet addiction was an extremely problem with either children or adults. The scientist estimated that if they used too much of the Internet by laptop, smartphone, or other social media tools, they could get some internet addiction symptoms. [28,29] The phenomenons appeared in men higher than in women,[30] and their characteristics were young, unemployed, students, stress, or often playing games, shopping or watching video games online.[31,32]

Some researchers applied bibliometric method analysis to explore the relationship between online games, social media, and Youth. Mustaro and Fortim 2012[33] concerned young culture in online games between 2007 and 2011. Lopes *et al.* 2017[34] studied the influence of Facebook factors in many countries from 2008 onwards. According to Wang *et al.* 2019,[35] social media applications were used to express themselves. Stehmann 2020[36] showed six leading online gambling and gaming research streams, including assessment of Internet gaming disorder, neurobiological processes, Internet gambling associated with problem gambling, psychological characteristics, social interaction, and motivation factors. Martí-Parreño 2016[37] analyzed current researches and evolution of the usefulness of games, e.g. the promising tool to motivate and engage students. A study by Altarturi *et al.*

2020[38] was about how cyber parent control their children in using the Internet and providing a safe environment.

Although the scholars researched youth entertainment activities in various fields, the overview of YEASM has not been concerned yet. Therefore, this study aimed to provide valuable information on the knowledge base of YEASM. The specific goals were to answer the following research questions (RQs):

RQ1: How was the published trend of YEASM between 2000 and 2021? Which countries have dominated this domain?

RQ2: How was the community collaboration in YEASM between 2000 and 2021? Which was the most important?

RQ3: Which were the most relevant sources in YEASM between 2000 and 2021? How were their scopes?

RQ4: What were the main topics in YEASM between 2000 and 2021? What were the topical issues YEASM?

METHODS

We conducted the bibliometrics method in this study. According to Pritchard 1969,[39] this method was popularised applied in many science fields nowadays,[40] e.g. mental health,[41] sustainable constructions,[42] simulations and serious games,[43] speech disorders of preschoolers.[44]

Data collect processing

The data collection process followed the PRISMA instruction, Preferred Reporting Items for Systematic Reviews and Meta-Analyses, including four steps: identification, screening, eligibility, and included phase.[45] In the first step, all the documents related to social media entertainment activities have been searched. Additions, keywords associated with Youth entertainment, leisure activities on social media were listed (Table 1). These keywords were aggregated based on the social media classification of Kaplan and Haenlein 2010.[4] The Scopus database was chosen for data retrieval by its appropriation to the bibliometrics method and its extensive use in other social science studies, e.g. Pham *et al.* 2021,[40] Hallinger *et al.* 2020.[43] On the Scopus search engine, 3,488 documents were referenced (14:30 September 11, 2021) when searching for keywords in the title, abstract and keyword domains.

In the second step, the initial dataset was narrowed in which criteria were determined as follows:

Publication stage: Final and published

Subject areas: Social Sciences, Psychology, Arts and Humanities, Business, Management and Accounting, Health Professions, Economics, Econometrics and Finance

Table 1: The keywords used to search.

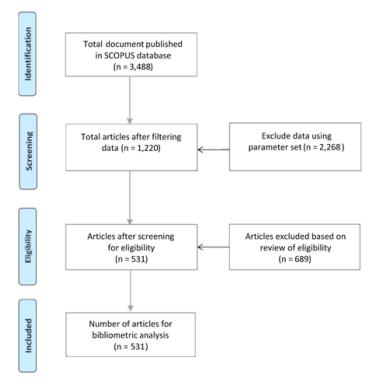| Operator	Keyword	Note
AND	entertainment* OR relax* OR fun OR enjoy*	Concerning the enjoyment
AND	art OR blog OR book OR chat OR content OR date OR dating OR discussion OR esport OR e-sport OR film OR gambling OR game OR gaming OR listen OR magazine OR movie OR music OR podcast OR radio OR search OR sharing OR shopping OR sing OR stream OR surfing OR television OR tour* OR tv OR video OR watch OR "game show" OR "live show"	Relate to entertainment activities on the Internet
AND	young OR youth OR teen OR "generation z" OR "generation y" OR millennial OR "Generation Alpha" OR "gen z" OR "gen y" OR adolescent OR adult	About the age of Youth
AND	"social media" OR "social network" OR "Tik Tok " OR "virtual world*" OR Baidu OR Facebook OR forum OR Instagram OR Internet OR iTunes OR line OR LinkedIn OR medium OR messenger OR online OR Pinterest OR Qq OR Qzone OR Reddit OR Snapchat OR Spotify OR Telegram OR Tumblr OR Twitch OR Twitter OR Viber OR WeChat OR Weibo OR WhatsApp OR Youtube OR Kakao	Social media and applications based on the Internet

Figure 1: Data collect processing based on the PRISMA guidelines

Document Type: Article

Language of document: English

Published time: No limitation.

There were 2,268 eliminated documents, and the remained dataset included 1,220. In the third step, each record was eligible for which title, abstract, and even full-text documents were checked. Six hundred eighty-nine articles were removed. In the last step, 531 eligibility articles were used for bibliometric analysis. The straightforward process was described in Figure 1.

Data analysis

Due to answer RQs, we used two approaches: statistical analysis and science mapping analysis. Based on the number of articles, the results addressed the publication trend, the most relevant authors, and the most relevant countries in YEASM. In addition, the citation index was used to list the most relevant scholars. The relationships between the knowledge base objects (e.g. authors, sources, documents) were referred to analyze the science mappings. Co-author analysis was used to identify research groups and the whole YEASM community. Co-citation of sources showed the relationship between journals that explored the main source scopes in YEASM. Otherwise, co-occurrence keywords analysis expressed the co-occurrence of keywords in documents. This method addressed the research themes and topical topics of the knowledge base. The data analysis process was performed with Microsoft Excel, Tableau, R and VOSviewer applications. Microsoft Excel and Tableau were used to visualize the results, Microsoft Excel and R conducted descriptive statistics, and R and VOSviewer created science mappings.

RESULTS

RQ1: How was the published trend of YEASM between 2000 and 2021? Which countries have dominated this domain?

The Scopus indexed publications in YEASM tended to increase between 2000 and 2021. The average annual growth rate was 12.12% per year. Although the annual growth was unstable, the difference between years was insignificant. Based on the numbers of annual publications, there has been divided into three phases. First, from 2000 to 2010, the annual publication volumes were less than 20. Second, from 2011 to 2016, the annual publications were between 20 and 40 articles. Last, from 2017 to 2021, annual publications were more than 40 articles. There were two notes, the sudden growth of publications in 2020 and the number of publications in 2021 counted at the data collection time.

In the YEASM domain, 64 countries published at least one Scopus indexed article between 2000 and 2021. Figure 2 showed the United States was the leading country in

Figure 2: Published trending related to YEASM in Scopus between 2000-2021

Figure 3: Countries' scientific production based on their Scopus, indexed articles in YEASM between 2000 and 2021

the YEASM area, with 173 articles (32.58% of total). The following ones were the United Kingdom (61 articles, 11.49%), Australia (46 articles, 8.66%), Canada (26 articles, 4.90%), Germany (25 articles, 4.71%). Five countries have 363 articles in total (68.36%). Besides, in the Asia area, India was the leading country with 24 articles (4.51%); the next ones were South Korea (23 articles, 4.33%), China (17 articles, 3.20%), Malaysia (16 articles, 3.01%).

RQ2: How was the community collaboration in YEASM between 2000 and 2021? Which was the most important?

The most 20 relevant authors in YEASM between 2000 and 2021 were listed in Table 2. The community had 1,534 authors; however, most authors (1,460 people, 95.18% of total) had just one article, and the rest, 74 scientists (4.82%), had more than one article. Griffiths M.D. was the most relevant author with six publications (Table 2). The others

had two or three publications related to YEASM. According to the citation index, Griffiths M.D. had the highest citation number, 749 citations. The following were Klimmt C. (229 citations), Abuhamdeh S. and Csikszentmihalyi M. (192 citations), Pallesen S. (178 citations). Thus, Griffiths M.D was the dominant author in this domain.

The collaboration of the YEASM community between 2000 and 2021 was shown in Figure 3. The network in Figure 4 represented 1,534 authors in 482 research groups. The largest group, 24 members, was centrally located, in which Griffiths M.D was labelled in Figure 4. There were two research groups with 12 members, Corbett S.'s group and Riva G.'s group. In addition, the list of authors in Table 2 showed five groups who had a similar *h*-index, TC, NP and PY. These groups have two or three members, including (i) Jung J.Y., Kim Y.C., Lin W.Y., (ii) Agarwal B., Arora T., (iii) Abuhamdeh S., Csikszentmihalyi M., (iv) Al-Maghrabi T., Dennis C., Halliday S.V., and (v) Lee J., Lee M. Besides, most of the publications (361 articles, 67,98%) were published by the groups which were less than four members. There were 98 independent author articles (18,08%), 151 publications (28.44%) published by the two-member groups, and 114 publications published by the three-member groups (21.47%). Therefore, the YEASM community was mainly contributed by the small research groups (Figure 4). On the other hand, based on the colour of nodes, it could be determined the development of the whole community. Purple nodes represented traditional authors, and yellow nodes were new authors. The rate of yellow nodes in Figure 4 indicated that most authors and research groups had just joined the YEASM community in the last few years. Overall, small and emerging research groups, e.g. Bach M.'s group, Moura P.'s group, Aulia A.'s group, contributed to the YEASM related research community between 2017 and 2021.
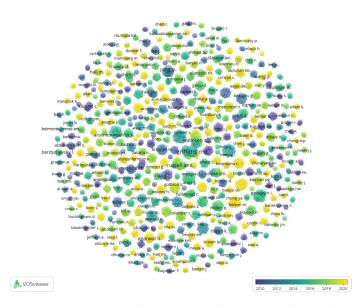
RQ3: Which were the most relevant sources in YEASM between 2000 and 2021? How were their scopes?

In the YEASM, the authors have published their articles in 352 journals. The most relevant sources in YEASM between 2000 and 2021 are listed in Table 3. Based on their scopes, most of the leading journals were multidisciplinary journals, excepted Journal of Retailing and Consumer Services và International Journal of Contemporary Hospitality Management. In addition, 13 of 20 journals were ranked Q1 in all majors. There were five journals with at least one primary ranked Q1. The Journal of Internet Commerce majors were ranked in Q2, and the JMIR Serious Games majors were indexed in Q2 and Q3 (Table 3). Besides, these journals' scopes were diverse. Three leading journals were on the computer and human interaction, i.e. Cyberpsychology, Behavior, and Social Networking (ranking #1), Cyberpsychology and Behavior (#2), and Computers in Human Behavior (#3). Other scopes

Table 2: List of the most relevant authors in YEASM in period of time between 2000 and 2021.

ID	Author	Affiliation	h_index	TC	NP	PY
1	Griffiths MD	Sorbonne University, France	5	749	6	2007
2	Pallesen S	University of Bergen, Norway	3	178	3	2012
3	Lopez-Fernandez O	University of Barcelona, Spain	3	97	3	2013
4-6	Jung JY	International Christian University, Japan	3	64	3	2010
4-6	Kim YC	Yonsei University, South Korea	3	64	3	2010
4-6	Lin WY	City University of Hong Kong, Hong Kong	3	64	3	2010
7	Russell AMT	CQ University, Australia	2	44	3	2016
8-9	Agarwal B	Amity University, India	2	15	3	2019
8-9	Arora T	Amity University, India	2	15	3	2019
10	Klimmt C	University of Mainz, Germany	2	229	2	2007
11-12	Abuhamdeh S	Istanbul Ehir University, Turkey	2	192	2	2009
11-12	Csikszentmihalyi M	Claremont Graduate University, United States	2	192	2	2009
13	Andreassen CS	University of Bergen, Norway	2	164	2	2012
14-16	Al-Maghrabi T	Brunel University, United Kingdom	2	118	2	2011
14-16	Dennis C	Brunel University, United Kingdom	2	118	2	2011
14-16	Halliday SV	University of Surrey, United Kingdom	2	118	2	2011
17	Miller E	University of Pittsburgh School Of Medicine, United States	2	113	2	2016
18	Logan K	University of Colorado At Boulder, United States	2	112	2	2012
19-20	Lee J	Chung-Ang University, South Korea	2	88	2	2011
19-20	Lee M	Chung-Ang University, South Korea	2	88	2	2011

Note: TC: total citation, NP: number of publication, PY: the year of the first document

Figure 4: YEASM community between 2000 and 2021 (1,524 authors, each author has at least one publication)

related to behavioural addictions, games, gambling, health, commerce, and tourism issues.

Based on the co-citations of source analysis, four published themes were explored (Figure 5). First, the red theme, cluster #1, had 51 sources, namely Cyber behaviour and Cyberpsychology. The important journals of this themes were Journal of personality and behaviour psychology (133 citations, 107 links, 2,602 link strength), Cyberpsychology and behaviour (133 citations, 107 links, 2,450 link strength), Journal of gambling studies (120 citations, 75 links, 1,598 link strength). Second, the blue theme, cluster #2, had 24 journals, namely human–computer interaction. The centre of the cluster were Computers in human behaviour (412 citations, 116 links, 9,269 link strength), Journal of computer-mediated communication (115 citations, 112 links, 2,524 link strength), New media society (119 citations, 101 links, 1,861 link strength). Third, the green theme, cluster #3, had 41 journals, namely business studies. The most relevant journals were Journal of consumer research (132 citations, 108 links, 4,131 link strength), Journal of business research (120 citations, 97 links, 4,606 link strength), Journal of marketing (116 citations, 102 links, 3,688 link strength), Journal of advertising research (107 citations, 95 links, 2,720 link strength). Finally, the orange theme, cluster #4, had six journals, namely tourism studies. Typical sources were Tourism management (113 citations, 77 links, 3,199 link strength), Journal of travel research (41 citations, 58 links, 1,195 link strength), Annals of tourism research (42 citations, 66 links, 1,038 link strength).

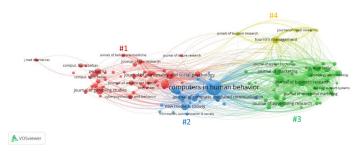**Table 3: List of the most relevant journals in YEASM between 2000 and 2021**

ID	Source	Scope	h_index	TC	NP	PY
1	Cyberpsychology, Behavior, and Social Networking	Computer Science Applications (Q1); Human-Computer Interaction (Q1); Medicine (miscellaneous) (Q1); Applied Psychology (Q1); Social Psychology (Q1);	13	515	16	2011
2	Cyberpsychology and Behavior	Computer Science Applications (Q1); Human-Computer Interaction (Q1); Medicine (miscellaneous) (Q1); Applied Psychology (Q1); Social Psychology (Q1);	15	1714	15	2002
3	Computers in Human Behavior	Arts and Humanities (miscellaneous) (Q1); Human-Computer Interaction (Q1); Psychology (miscellaneous) (Q1);	10	409	11	2010
4	New Media and Society	Medicine (miscellaneous) (Q1); Psychiatry and Mental Health (Q1); Clinical Psychology (Q1)	6	132	9	2012
5	Journal of Gambling Studies	Communication (Q1); Sociology and Political Science (Q1)	5	140	7	2013
6	Journal of Behavioral Addictions	Psychology (miscellaneous) (Q1) Sociology and Political Science (Q1)	5	155	6	2013
7	Journal of Health Communication	Public Health, Environmental and Occupational Health (Q2); Communication (Q1); Health (social science) (Q1); Library and Information Sciences (Q1);	4	81	6	2005
8	Young Consumers	Economics, Econometrics and Finance (miscellaneous) (Q1); Life-span and Life-course Studies (Q3)	3	78	5	2005
9	Games for Health Journal	Computer Science Applications (Q2); Public Health, Environmental and Occupational Health (Q2); Rehabilitation (Q1); Health (social science) (Q2);	4	97	4	2015
10	Journal of Retailing and Consumer Services	Marketing (Q1)	4	69	4	2011
11	JMIR Serious Games	Rehabilitation (Q3); Physical Therapy, Sports Therapy and Rehabilitation (Q3); Psychiatry and Mental Health (Q3); Computer Science Applications (Q3); Biomedical Engineering (Q2)	3	47	4	2014
12	Journal of Internet Commerce	Management of Technology and Innovation (Q2); Human-Computer Interaction (Q2)	4	45	4	2005
13	Comunicar	Communication (Q1); Cultural Studies (Q1); Education (Q1)	3	33	4	2014
14	Journal of Sex Research	History and Philosophy of Science (Q1); Psychology (miscellaneous) (Q1); Gender Studies (Q1); Sociology and Political Science (Q1)	3	27	4	2017
15	Journal of Child and Family Studies	Developmental and Educational Psychology (Q2); Life-span and Life-course Studies (Q1)	2	143	3	2015

Table 3: Cont'd.

ID	Source	Scope	h_index	TC	NP	PY
16	Children and Youth Services Review	Developmental and Educational Psychology (Q2); Education (Q1); Social Work (Q1); Sociology and Political Science (Q1)	3	122	3	2012
17	Archives of Sexual Behavior	Arts and Humanities (miscellaneous) (Q1); Psychology (miscellaneous) (Q1)	3	102	3	2011
18	Technology in Society	Business and International Management (Q1); Education (Q1); Human Factors and Ergonomics (Q1); Sociology and Political Science (Q1)	3	93	3	2015
19	International Journal of Contemporary Hospitality Management	Tourism, Leisure and Hospitality Management (Q1)	3	84	3	2016
20	Tourism Management	Strategy and Management (Q1); Tourism, Leisure and Hospitality Management (Q1); Development (Q1); Transportation (Q1)	3	75	3	2015

Note: TC: total citation, NP: number of publications, PY: the year of the first document. Scopes of sources were referred to Scimagojr on 15:00 September 15 2021.

Figure 5: The relationship between the journals in YEASM between 2000 and 2021 (122 journals, each source has at least 20 citations)

RQ4: What were the main topics in YEASM between 2000 and 2021? What were the topical issues YEASM?

Twenty most cited articles in YEASM between 2000 and 2021 were listed in Table 4. First, Cole and Griffiths 2007,[46] 527 citations, concerned the social interaction of players in and out of the game. Second, Dutta-Bergman 2004,[47] 336 citations, found positive communication on the Internet, which helped people gather health and healthy activity information. Third, Smyth 2007,[48] 182 citations, explored the relationships between the different types of video games and health, well-being, rest time, social communication, academic outcomes of young people between 18 and 20.
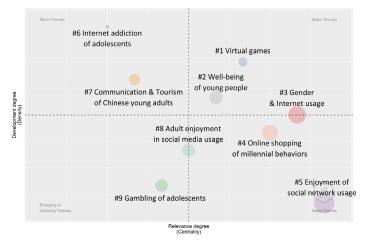
The topics of the listed article in Table 4 were quite varied. Both topics, video games and using social media, were mentioned in five articles. Video game studies were Cole and Griffiths 2007,[46] Smyth 2007,[48] Klimmt, Hartmann and Frey 2007,[49] Rau, Peng and Yang 2006,[50] Dauriat *et al.* 2011.[51] The topic of social media usage was Tosun 2012,[52] Nikken and Schols 2015,[53] Shaw and Gant 2002,[54] Belch, Krentler

and Willis–Flurry 2005,[55] Zhou *et al.* 2011.[56] Other topics were business,[57-59] well–being,[56,60] gender differences.[54,57,61]

From the broader perspective, nine themes were identified in the YEASM domain between 2000 and 2021. The results were analyzed from 250 keywords (Figure 6). The topic location on the thematic map determined its development degree and its relevant degree. The two most important topics were motor themes, upper–right quadrant, #1 Virtual games (included keywords are virtual reality, games, motivation, physical activity) and #2 Well–being of young people (young people, media, happiness, well–being, covid-19). In the lower–right quadrant, three basic topics were #3 Gender internet usage (internet, youth, gender, adolescents, sexuality, internet use, new media), #4 Online shopping of millennial behaviours (consumer behaviour, millennials, internet shopping, online shopping, motivations, purchase intention), #5 Enjoyment of social networks usage (enjoyment, Facebook, youtube, social networks, audiences, uses and gratification, advertising). Two topics were niche themes, upper–left quadrant, #6 Internet addiction of adolescents (internet addiction, adolescents), and #7 Communication tourism of Chinese young adults (young adults, china, technology, communication, tourism). Two emerging topics in the lower–left quadrant were determined as #8 Adult enjoyment in social media usage (adults, perceived entertainment, social interaction, media use, social capital, trust), #9 Gambling of adolescents (adolescents, gambling, stress, depression).

Table 4: Lists of 20 relevant articles in the YEASM domain between 2000 and 2021 based on the citation index

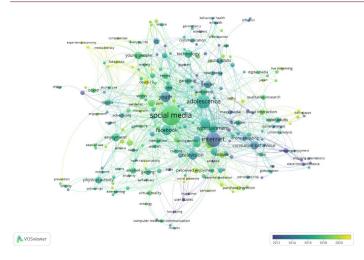| ID	Article	Source	Total citation
1	Cole and Griffiths (2007)	Cyberpsychology and behavior	527
2	Dutta-Bergman (2004)	Health communication	336
3	Smyth (2007)	Cyberpsychology and behavior	182
4	Klimmt, Hartmann andFrey (2007)	Cyberpsychology and behavior	170
5	Tosun (2012)	Computers in human behavior	168
6	Blais et al. (2008)	Journal of Youth and adolescence	136
7	Nikken and Schols (2015)	Journal of child and family studies	135
8	Shaw and Gant (2002)	Cyberpsychology and behavior	125
9	Abuhamdeh and Csikszentmihalyi (2012)	Personality and social psychology bulletin	123
10	Caspi and Gorsky (2006)	Cyberpsychology and behavior	116
11	Belch, Krentler and Willis-Flurry (2005)	Journal of business research	108
12	Zhou et al. (2012)	International Journal of information management	108
13	Brown and Gregg (2012)	Continuum	106
14	Hansen and Jensen (2009)	European Journal of marketing	104
15	Rau, Peng and Yang (2006)	Cyberpsychology and behavior	100
16	Rohm, Kaltcheva and Milne (2013)	Journal of research in interactive marketing	100
17	Dauriat et al. (2011)	European addiction research	97
18	Tsai and Lin (2004)	Adolescence	91
19	Jackson and Cameron (2012)	Children and youth services review	91
20	Al-Maghrabi et al. (2011)	Journal of enterprise information management	86

Figure 6: Thematic map of YEASM between 2000 and 2021 based on co-occurrences analysis of 250 author keywords

A look closer, topical topics in the YEASM between 2000–2021 was presented in Figure 7. The yellow nodes represented recently published topics. In this way, ten topical ones of YEASM were addressed. The first was concerned with the relationship between youth well-being and gaming in the COVID-19 pandemic (related keywords: relationship, gaming, mobile gaming, screen time, Youth, COVID-19).

The second was about happiness in using social media in COVID-19 (COVID-19, social media, happiness, pleasure, media consumption). Media literacy of generation Z was the third (generation Z, young people, media literacy, fake news, misinformation, competencies). The fourth was gender violence in social media (gender violence, ICT, social media, discourse analysis, cyberbullying). The fifth was loneliness in COVID-19 (loneliness, COVID-19, communication, social interaction). Live streaming in South Korea (live streaming, South Korea) was the sixth. The seventh was online dating (online dating, dating apps, tinder, gender differences, social interaction, online relationships). The eighth was the online purchase intention of millennials (social media, purchase intention, attitude, millennials, online advertising, credibility). The ninth was perceived enjoyment in social media (social media, social interaction, trust, attitude, social presence). The last was sexual health (sexual health, porn, Internet, pleasure, sex).

DISCUSSION

This study provided an overview of the YEASM between 2000 2021, in which data were collected from the Scopus database. Using the bibliometric analysis on a dataset of 531 records showed the trends of research publication, dominant

Figure 7: Science mapping of 231 author keywords based on keyword co-occurrence analysis (each author keyword appeared two times)

countries, leading authors and the network of cooperation of the YEASM community from 2000 to 2021. Besides, this paper also listed the most relevant journals, the most interesting topics, and the new tendency in the YEASM domain. Among the results, six issues could have further discussions. First, the amount of research in YEASM tends to increase between 2000 and 2021. The rapid change of technology led to a shift in entertainment activities. During this period, the development of web technology, i.e. Web 1.0, Web 2.0, Web 3.0, played a role as the platform to form new online entertainment applications, e.g. pushed web (Web 1.0), YouTube, blogs, podcasts (Web 2.0), multi–user virtual environment (Web 3.0).[65] In addition, 2020 was a breakthrough year of research published in the YEASM domain. In the Covid-19 pandemic context, many social activities have changed the mode of operation, from traditional to online, such as health, society and the economy,[66] including young activities.[67] Besides, most studies have been implemented by researchers from the United States, United Kingdom, Australia. These were the leading countries in terms of technological expertise,[68] advanced technologies (World Population Review, n.d.), and economies.[69]

Second, the YEASM community consisted of mainly small groups and recent assemblage. Most groups (Figure 3) were published between 2017 and 2021, e.g. Bach M.'s group, Bugueo S.'s group. Except for the case of Griffiths M.D., the most relevant author (Table 2), the remaining authors have less than four articles. It clearly showed that this research domain still lacks great scientists. According to new technology such as virtual reality, augmented reality, internet 5G, Internet of things, new research problems could be continuously published and expanded the YEASM community.

Third, the main scopes of journals in YEASM concerned cyberpsychology, cyber behaviour, human–computer interaction, business, and tourism studies. Sources related to human–computer interaction have a higher citation index than others (Table 3) because of the differences between research fields.[70] Moreover, new technologies could change the interaction between humans with computers, e.g. voice commands or gestures. Therefore, new research approaches in YEASM could appear and in future.

Forth, online games were one of the most relevant topics in the YEASM domain (Table 4). The contents focused on the social interaction,[46] exploring the consequences of online games,[48] enjoyment in playing games,[49] time for playing games,[50] motivation to play games.[51] In this topic, scholars tried to find the balance between the positive and negative sides of gamers' emotions, motivations and engagement.[71,72]

Fifth, the two most important topics in YEASM were #1 Virtual games and #2 Well-being of young people (Figure 6). The #1 Virtual games topic had exciting issues, e.g. playing games in the virtual environment to reduce stress, anxiety and pain,[73] improving the creative content of games of Kenya young in the virtual environment,[74] exploring the reason Youth use virtual environments, e.g. virtual games on Facebook, escape real life.[75] The #2 Well-being of young people related motivations in playing mobile games,[13] determining the psychological factors, e.g. loving–kindness, pleasant emotions, improving the user's well-being by an online diary or/and online forum,[76] intimating partner violence on online media in China,[77] users' emotions when using Snapchat,[78] Figuring the relationship between watching the live game streams and their difficult periods in life,[79] between users' psychological well-being and their media usage,[80] between intricacies of young's social media and their happiness or their pleasure activities.[81] Otherwise, in Figure 6, two topics were in between two themes. First, topic #3 Gender Internet usage tended to develop from basic themes to motor themes. Topics #8 Adult enjoyment in social media usage moved from emerging or declining themes to basic ones. These implications were valuable for the community about the research approaches of YEASM in future.

Finally, among ten topical topics, three used Covid-19 pandemic context as a new approach, i.e. relationship between youth well-being and gaming in COVID-19, happiness in using social media in COVID- 19, loneliness in COVID-19. The Covid-19 pandemic situation is complicated, so it could be feasible and practical to expand to other YEASM topics. Significantly, the studies on positive well-being strategies to reduce the negative impact of social media or/and Covid-19.[82]

CONCLUSION

This study used bibliometric methods to explore the knowledge base of the YEASM. The analysis results of 531 Scopus index articles between 2000 and 2021 presented the tendency of annual publications. The predominant countries belonged to the developed countries with economic and science–technology potential. The research community was mainly the small groups that have recently appeared for a few years. Virtual games and the well–being of young people were two essential topics of YEASM. Besides that, among the topical issues, Covid–19 was a new approach in this field. The limitation of this study was data gathering from the unique database; therefore, we suggested further research direction by expanding other information resources, e.g. Web of Sciences, Dimensions, Microsoft Academic, Google Scholar, or/and applied content analysis in collected data.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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