

# Study of Entrepreneurial Intentions Among University Students: Bibliometrics Analysis

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**Abstract.** This study examines the development of research on entrepreneurial intentions among university students using bibliometric analysis. The study aims to determine: (1) The result of the number of international publications on entrepreneurial intentions among university students. (2) Name of journal, author, and publisher of research on entrepreneurial intention among university students (3) Map of the topic of entrepreneurial intention among university students publications based on co-words. Collect data by searching for public or perish with the keywords entrepreneurship, intention, student, university article title, abstract, and keywords in 2010–2020. The number of articles taken was 200 articles with categories based on the number of citations from the largest to the smallest. Subjects were analyzed using Microsoft Excel. Meanwhile, the trend of topic mapping was analyzed using VosViewer software. The results showed that the highest growth development in 2010 - 2020 occurred in 2016, reaching 25 publications. Most international publications are published in the Emerald journal as many as 35 articles. Most citations 762 from authors F Liñán, D Urbano, M Guerrero published by Taylor & Francis. Research on entrepreneurial intentions among university students attracts many researchers from various regions. Still, from bibliometric analysis, only two countries appear with the most categories, namely South Africa and Pakistan. The theoretical model used is dominated by Theory Planned Behaviour (TPB) Ajzen, 1991. For further research, the author suggests additional keywords so that more research results are more accurate and comprehensive.

**Keywords:** Bibliometrics, Entrepreneurial intentions, Theory planned behaviour, University students

## 1. INTRODUCTION

Entrepreneurs play a role both externally and internally. Externally, entrepreneurs act as job providers for job seekers. The absorption of labor by existing job opportunities, which entrepreneurs have provided, will further reduce national unemployment. And internally, entrepreneurs lessen dependence on others, increase self-confidence, and increase purchasing power to the perpetrators. A decrease in the unemployment rate can positively impact the increase in per capita income and people's purchasing power, and the growth of the national economy. In addition, the development of the per capita economy can impact reducing crime caused by high unemployment. As an effort to capture entrepreneurial interests and talents and a means of educating and socializing entrepreneurship among students, assistance in the university environment is very much needed. The millennial generation emerged

from creative and innovative works such as Start-Up, Content Creator, Barista, Photographer, Youtuber, and many more. And all of these are forms of effort that

millennials make to achieve success. Several studies on entrepreneurial intentions in young people throughout the region (Zhang et al., 2015) found that social norms, controlled behavior, and short-term risk-taking preferences positively related to entrepreneurial intentions. However, the failed attitude significantly impacted entrepreneurial intention, which was also negatively associated with psychological well-being. However, research conducted by (Purwana, 2018) found that perceived desirability, perceived feasibility and perceived propensity to act were insignificant to influence students' entrepreneurial intention. Several studies on the entrepreneurial intentions of university students were carried out by (Ambad & Damit, 2016; Amofah et al., 2020; Genoveva, 2019; Israr & Saleem, 2018; Nabi et al., 2010; Purwana, 2018; Radzi et al., 2013; Zhang et al., 2015).

Complete understanding of how entrepreneurial intentions are among university students, a literature review is needed to get more information about what factors influence entrepreneurial intentions. The government and related parties can provide impetus to realize many young entrepreneurs in the future. Mapping research to obtain a literature review using bibliometric analysis. The data used is downloaded from publish or perish. The bibliometric review investigates the sustainable research landscape and its sub-fields using the scientific literature (Suriyankietkaew and Petison 2020). This study aims to obtain the following data: (1) The number of international publications on entrepreneurial intentions among university students. (2) Map of the topic of entrepreneurial intention among university student publications based on co-words. (3) Name of journal, author, and publisher of research on entrepreneurial intention among university students.

## **2. LITERATURE REVIEW**

### *2.1 Entrepreneur*

In his book entitled *Innovation and Entrepreneurship: Practice and Principles*, Peter Drucker briefly defines the notion of entrepreneurship. Defining entrepreneurship and entrepreneur, where entrepreneurs are always looking for a change, responding to it, and taking it as an opportunity, entrepreneurship is an ability that functions to create something new and different from others. An entrepreneur is a person who carries out entrepreneurial activities or starts and operates a business (Daryanto, 2016:6). (Aldrich, H & Zimmer, 1986) stated that one of the factors driving the growth of entrepreneurship in a country is the implementation of entrepreneurship education through the role of universities as educational institutions. A person can be said to be an entrepreneur if he is quick to respond to an action that can produce results in goods or services that are innovative and productive. The process of creating valuable goods or services through organizational and institutional processes combines resources such as raw materials, money, time, and human resources to produce a product or service. From the above definition, it concluded that an entrepreneur has creative and innovative abilities, used as essential tips for starting a business, and the process of creating value-added goods and services is carried out with the courage to face risks to make a more decent living for himself and the community and have the ability to good in developing products and services so that they do not lose out in the competition in the business world.

### *2.2 University Student*

The student is a term for taking or undergoing higher education at a college such as high school, academy, and the most common is university. Historically, students from various countries have played an essential role in the history of a nation, according to Santoso (2012). A student is a person who studies at a college, be it a university, institute, or academy. Those who are registered as students in colleges can be referred to as students. The meaning of student is not that narrow. Registered as a

college or university student is only an administrative requirement to become a student, but being a student contains a broader understanding than just the organizational problem itself. Etymologically, the student consists of two words, namely "maha" and

"student." Maha means very, very, and significant, while a student means student or student. Students are the next generation of the nation believed to compete and make the country proud and unite and convey thoughts and conscience to advance the government. Students are also considered intellectuals or intellectuals by society. The combination of awareness of the people's mandate for a better Indonesia and the opportunity to become intellectuals can significantly make Indonesia great. In addition, students are a precious asset. A nation's high hopes for students are to become successors who have high loyalty to the country's progress, especially in the world of education.

### *2.3 University*

The term tertiary institution used for the second layer is identical to the term tertiary institution referred to in Government Regulation No. 30 of 1990, namely an academic unit organization, which provides education at the higher education level, research, and community service. Higher Education is a forum for the campus community. As an organization, higher education institutions have (1) a structure, (2) task completion rules, which include the division of tasks between functional groups and between citizens in the same group, (3) activity plans, and (4) goals. Goals are guided by principles and guide action plans. The structure and rules for completing tasks serve as infrastructure for achieving goals and reflecting the principles. Higher education cannot be separated from a large society that is its environment (universal understanding or expression) or its parent (paternalistic interpretation or presentation). In Indonesia, where most of its citizens are very inclined towards paternalism, the university community has become the child of a prominent Indonesian society. The placement and adjustment of the campus community in Indonesia's larger society take place more formally (through well-meaning provisions, regulations, laws) than ecologically.

### *2.4 Bibliometrics*

Bibliometrics comes from the word Biblio or bibliography and metrics, Biblio means book and metrics related to measuring (Effendy et al., 2021). A bibliometric review of the literature investigated the World's research landscape in sustainable development and its sub-areas using scientific literature from 2000–2010, and it has previously laid the groundwork for future research (Suriyankietkaew & Petison, 2020). Bibliometrics is a quantitative study in library science. This study is one of the oldest studies, so that many experts conclude the meaning of bibliometrics. According to Pritchard, quoted by (Glänzel, 2003), "bibliometrics is the application of mathematical and statistical methods to books and other media of communication. Harande (2001:1): It refers to applying statistical techniques to the literature of a given subject. Bibliometrics studies the patterns of communication between documented information and the potential users of information. Based on this description, bibliometrics is the application of mathematical and statistical methods to analyze scientific journals and other forms of written communication. (Fairthorne, 1969) defines bibliometrics as the quantitative study of printed communication and its nature. Fairthorne's definition suggests that the application of bibliometrics is limited to the quantitative assessment of recorded information.

Meanwhile, according to Nicholas and Richie in Mustikasari (2008: 2) emphasizes that the scope of bibliometric studies aims to provide information about knowledge and how to communicate it. According to Bremholm in Dewiyana (2010), he argues that: Bibliometrics is defined as the study of patterns in the publication and use of documents, while bibliometric laws define predictable relationships in those patterns. Based on this definition, it is explained that bibliometrics examines the pattern of publication and use of documents. Documents that are the main object of bibliometrics study are primary documents, and the most dominant are scientific magazines (scientific journals), because journals are considered important media in scientific communication, are public knowledge and general archives that anyone can read at

any time. Bibliometrics which examines the distribution of publications, is a quantitative study of literature, the emergence of three theorems indicates this in bibliometrics, namely Lotka's theorem to calculate author productivity, Zipf's theorem to calculate

word rank and frequency in literature and Bradford's law to determine core journals.

## 2.5 VOSviewer

VOSviewer is software for building and visualizing bibliometric networks (Effendy et al., 2021). Vos Viewer(VV) is used to visualize bibliographies or data sets containing bibliographic fields (title, author, author, journal, and so on). VV is used for bibliometric analysis in the world of research, looking for topics that still have opportunities to be researched, finding the most widely used references in certain fields and others. VV can read datasets from Web of Science, Scopus, Dimension, and Pubmed for bibliographic data. In addition, the RIS, Endnote, and RefWork dataset formats can also be read by VV. Through API features, VV can read/fetch data from Crossreff, Pubmed PMC, Semantic Scholar, OCC, COCI, Wikidata. If the prepared data is in multiple files, VV can also read multiple files at once. Meanwhile, VV can also read/analyze terms from abstracts and titles with the same source as the data above. (Martin, Florence, et al, 2020).

For bibliographic data, VV can perform various analyses. With some modifications, VV can also be used for other data visualization purposes. A few numerical notes in VV: There will be variations in the size of the connecting line and the circle. This is related to the size of the analysis results from VV. For example: if Indonesian and Japanese writers collaborate more than Indonesian and Indian writers, then the line will be bigger. If more Indonesians write than Indians, then the Indonesian circle will be bigger. Some of these numbers are divided into: link (network owned), total link strength (link strength calculated based on full or fractional counting), occurrence (number of occurrences). In addition there is normalization that can be done with several methods. Here are some types of analysis in VV and their functions. Co-authorship, analyzing the author's collaboration with other authors. The analysis will visualize the results based on the author's name, author's organization, or author's country of origin. Co-occurrence displays a visualization of the network between keywords. Citation will visualize the observed document. The observed/tested documents will be linked to other (also observed/tested) documents if they cite other similarly observed articles. This analysis is useful for showing citations between documents, it can also be used to see the author's self-citation. Sperto PoP display shown in Figure 1 below.

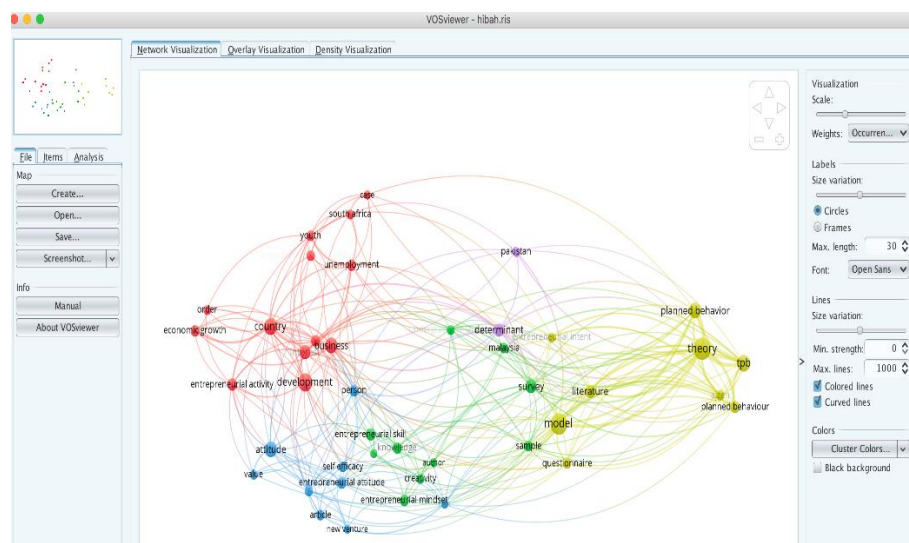


Figure 1. VosViewer  
Sources: Vosviewer, 2021

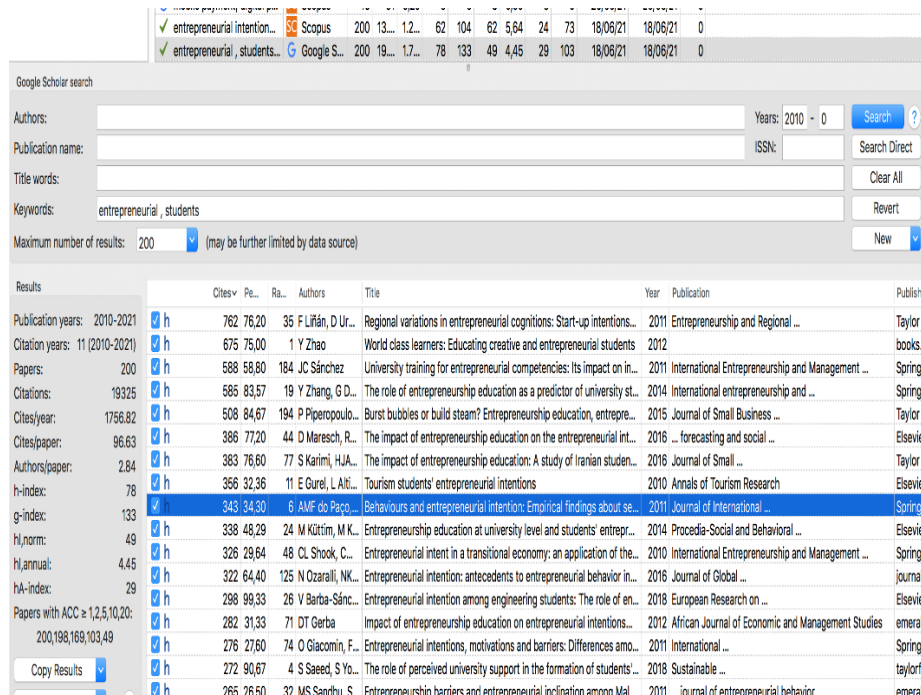
## 2.6 Publish or Perish (PoP)

Publish or Perish is a software program that retrieves and analyzes academic

citations using various data sources. Currently Publish or Perish can reach metadata from including Google Scholar, Microsoft Academic, Scopus, and Web of Science. This raw citation data is then analyzed and made metrics. The development of Publish or

Perish has been carried out since 2006 by a professor of management at Middlesex University named Anne-Wil Harzing. This software is promised to be available free

forever to anyone. Publish or Perish software is available for Microsoft Windows and Apple macOS applications; Windows versions can also be installed and used on GNU/Linux computers with the help of a suitable emulator like CrossOver Linux or Wine. Sperto PoP display shown in Figure 2 below:



**Figure 2. PoP Data  
Sources: PoP,2021**

### 3. RESEARCH METHODS/METHODOLOGY

This study uses data from international publications on entrepreneurial intentions among university students from 2010 - 2020 sourced from the Publish or Perish database. Data collection through searches with keywords entrepreneurship, intention, student, university. Data in the form of the number of publications from 2010-2020, the 200 articles cited the most were taken. Journals containing articles, authors, the origin of authors, and subjects were analyzed using Microsoft Excel. Meanwhile, the trend of international publication development was analyzed using VosViewer software. The flow of the research diagram is as shown in Figure 3 below.

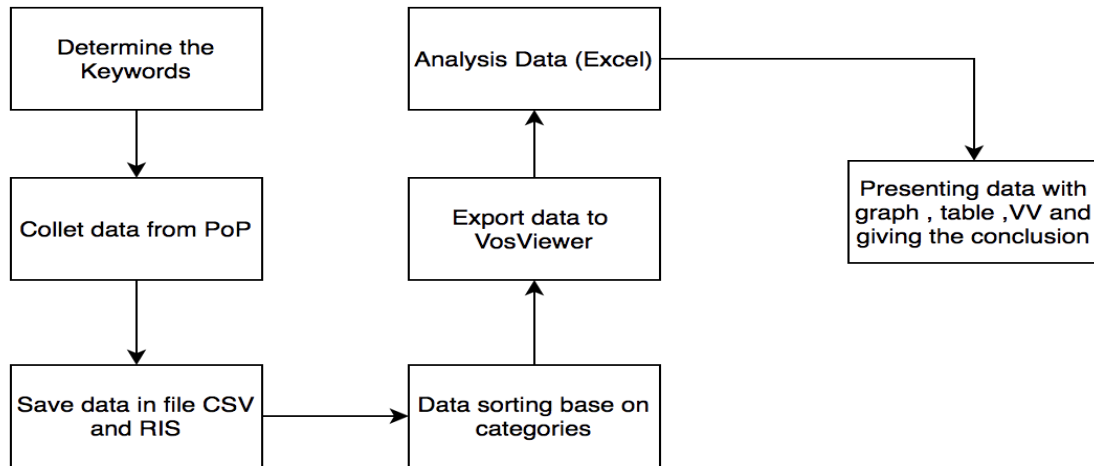


Figure 3. Design Research  
Sources: Data processed, 2021

## 4. RESULTS AND DISCUSSION

### 4.1 Number of international publications on entrepreneurial intentions among university students

From the processed data, it can be seen that the growth development map of publications on the topic of entrepreneurial intentions among university students from 2010 - 2020 has increased from 2010 to 2016, where articles researching this field in 2010 amounted to 11 articles but became 25 articles in 2015. The decrease in the number of studies started from 2016 to 2020, which only contained 16 articles. More details on the growth of international publications can be seen in Figure 4.

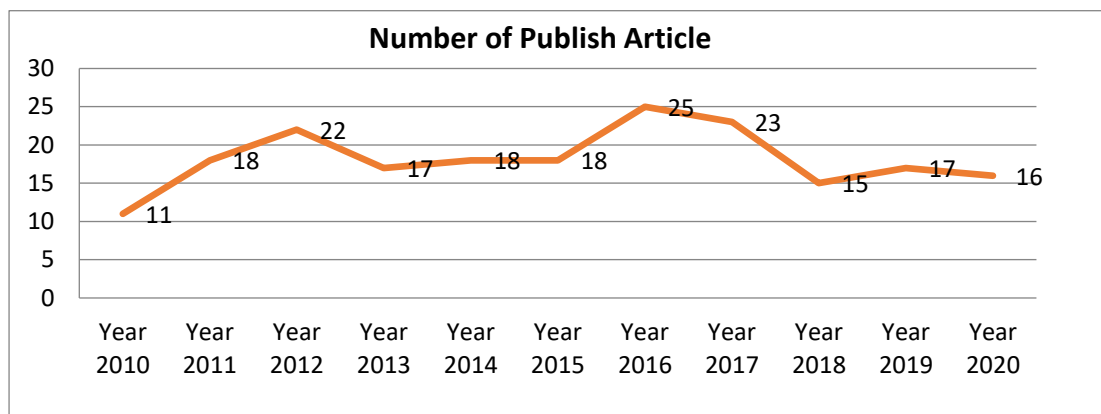


Figure 4. Number of international publications 2010-2020  
Sources: Data processed, 2021

### 4.2 Name of journal, author, and publisher of research on entrepreneurial intention among university students

Based on the search results using the keywords entrepreneurship, intention, student, university category article title, abstract, 200 articles were selected with the highest number of citations. The highest citation was obtained by author F Liñán, D Urbano, M Guerrero published by Taylor & Francis Regional published in the journal Entrepreneurship and Regional with the article title "variations in entrepreneurial cognitions: Start-up intentions of university students in Spain" with 762 citations. The twenty articles that received the most citations can be seen in table 1 below:

Table 1. Articles with the most citations

No.	Cites	Authors	Year	Source	Publisher
1	762	F Liñán, D Urbano, M Guerrero	2011	Entrepreneurship and Regional	Taylor & Francis
2	588	JC Sánchez	2011	International Entrepreneurship and Management	Springer
3	585	Y Zhang, G Duysters, M Cloudt	2014	International entrepreneurship	Springer
4	508	P Piperopoulos, D Dimov	2015	Journal of Small Business	Taylor & Francis
5	386	D Maresch, R Harms, N Kailer	2016	Journal forecasting and social	Elsevier
6	383	S Karimi, HJA Biemans, T Lans, M Chizari...	2016	Journal of Small Bussiness	Taylor & Francis
7	356	E Gurel, L Altinay, R Daniele	2010	Annals of Tourism Research	Elsevier
8	343	AMF do Paço, JM Ferreira, M Raposo	2011	Journal of International Business	Springer
9	338	M Küttim, M Kallaste, U Venesaar, A Kiis	2014	Procedia-Social and Behavioral science	Elsevier
10	326	CL Shook, C Bratianu	2010	International Entrepreneurship and Management	Springer
11	322	N Ozaralli, NK Rivenburgh	2016	Journal of Global Bussiness	Springer
12	298	V Barba-Sánchez, C Atienza-Sahuquillo	2018	European Research on social science	Elsevier
13	282	DT Gerba	2012	African Journal of Economic and Management Studies	emerald.com
14	276	O Giacomini, F Janssen, M Pruett, RS Shinnar	2011	International Business and science	Springer
15	272	S Saeed, S Yousafzai	2018	Sustainable business Journal	Taylor & Francis
16	265	MS Sandhu, SF Sidique, S Riaz	2011	International journal of entrepreneurial behavior science	Emerald
17	243	HW Hattab	2014	The Journal of Entrepreneurship	Sage
18	233	H Sesen	2013	Education+ Training	Emerald
19	230	M Franco, H Haase, A Lautenschläger	2010	Education+ Training	Emerald
20	229	I Ahmed, MM Nawaz, Z Ahmad, MZ Shaukat	2010	European Journal of education	Citeseer

Sources: PoP, 2021

The publisher who publishes the most journals on the topic of entrepreneurial intentions among university students is published by emerald with 37 publications, followed by Elsevier, Springer, Taylor&Francis and Sage as shown in Figure 5 below:

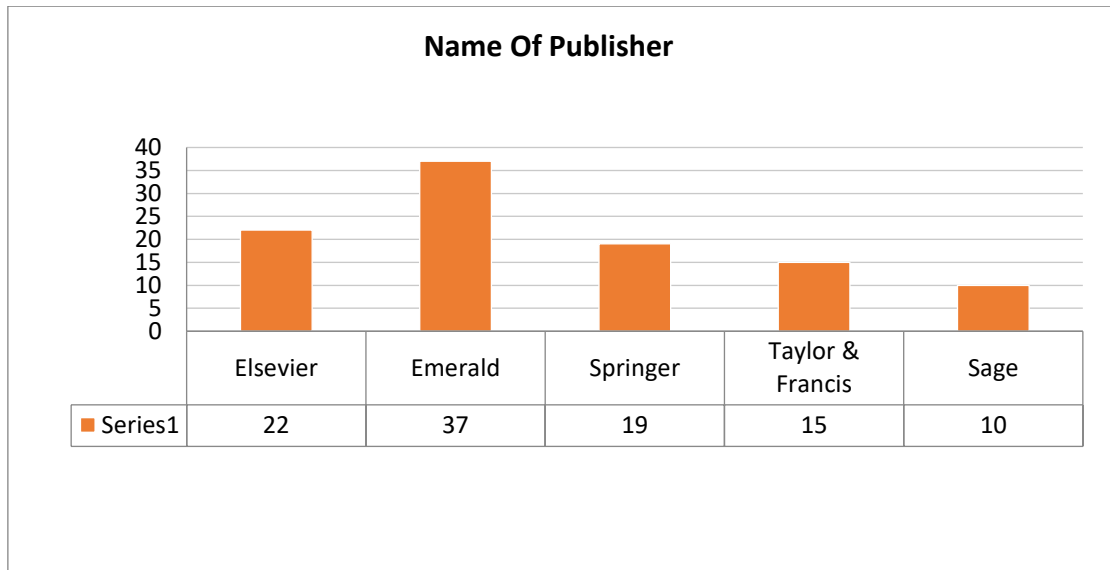


Figure 5. Publisher  
Sources: Data processed, 2021

#### 4.3 Map of the topic of entrepreneurial intention among university students publications based on co-words

Figure 6 shows that based on keywords (co-words), they are formed into 4 clusters. Cluster 1 in red color consists of the following topics: case, south africa, youth, unemployment, order, economic growth, country, business, development, entrepreneurial activity. Cluster 2 in green consists of entrepreneurial skills, knowledge, author, creativity, entrepreneurial mindset, sample, survey, malaysia. Cluster 3 is blue, consisting of topics: attitude, value, self-efficacy, entrepreneurial attitude, article, new venture, person. Cluster 4 is yellow with the topics: Planned behavior, theory, ajzen, literate, questionere, intention, model. Cluster 5 is purple with the topic of case: pakistan, determinant, entrepreneurial intent, tpb, planned behaviour.

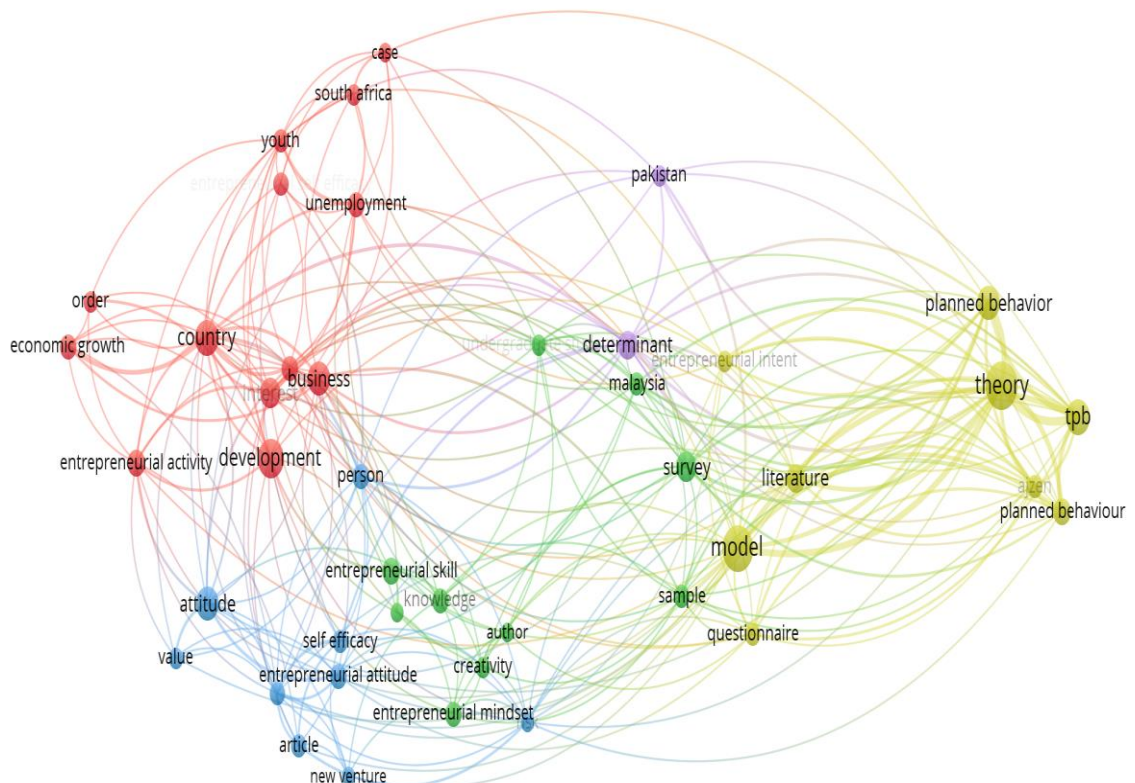


Figure 6. Bibliometric Analysis  
Sources: Vosviewer, 2021



Based on the results and discussion, it can be concluded that the development of research on entrepreneurial intentions among students is still widely studied by academics, this can be seen from the research that discusses this topic until the end of 2020. This is considering the entrepreneurial intention among young people in particular is a important things to keep learning. Entrepreneurial activities in the academic field are widely known as a way to expand students' competitive advantage, especially in preparing them to face stiff competition in the era of globalization (Usman & Yennita, 2019).

## CONCLUSION

From the results of the analysis using Vosviewer, it can be seen that the most dominant students use the theory of planned behavior or TPB on the topic of research regarding entrepreneurial intentions. Theory Planned Behavior (TPB) states empirically if the intention factor can predict a behavior, while the attitude successfully predicts the intention. The relationship between the picture above and entrepreneurship is the expected value or value expected to form an entrepreneurial attitude. Normative beliefs or normative beliefs will result in belief in subjective norms. Perceived self-efficacy or belief in one's abilities will lead to a perceived feasibility of the knowledge possessed by the individual. Each of these three elements has a different influence on entrepreneurial intentions (Ambad & Damit, 2016).

Pakistan and South Africa are two countries that spotlight research topics related to entrepreneurial intentions, based on the number of authors. Still, authors obtain the most citations from Spain. This also shows that in fact the problem of entrepreneurship among university students is a global problem. in both developed and developing countries. Major publishers such as Elsevier, Emerald, Taylor&Francis still open and accommodate related articles, and this of course, is an opportunity for researchers to continue to see the other side that may be the factors that influence the intention to become an entrepreneur among university students. It is hoped that the research results can provide input and contributions for the state to change the way of entrepreneurship education that has existed so far.

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