EVALUATING CHANGES IN DRIVER BEHAVIOR FOR ROAD SAFETY OUTCOMES AND ITS IMPACT ON THE GIG ECONOMY

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Abstract— The gig economic platform is currently regarded as one of the finest options for the unemployed to obtain a temporary or supplemental source of income while looking for a permanent position and watching for the nation's economy to improve. In Malaysia, one of the biggest issues with driving is still road traffic accidents. Accident instances that take place all throughout the nation are publicized in the news and on electronic media every day. The quantitative research methodology has presented. A quantitative research observes a mechanistic approach for assessing global trends in research in a certain area based on the results of academic publishing databases. The research articles with the title and abstract driver behavior, road safety outcomes and GIG economy were the major focus of this investigation. The information on the search strings used in Scopus. Publications' reference, bibliography, and creator terms were imported to VOSviewer, a software program for creating and viewing Quantitative maps. Items are included in maps made by means of VOSviewer.

Keywords—Driver behavior; road safety outcomes; GIG economy

I. INTRODUCTION

Road traffic injuries (RTI) contribute to 30% of all total deaths and are the number one cause of death among those aged 18 to 26 [1]. In 2004, RTI was rated as the eighth leading cause of mortality worldwide; by 2035, RTI is anticipated to be the fifth leading cause [2-3]. Globally, the problem of traffic safety is gaining traction. The World Health Organization's Universal Feature on Road Accident Reduction [4] and Worldwide Progress Update on Traffic Safety [5] provides data suggesting that traffic congestion is one of the leading causes of death worldwide. According to the authors of the WHO research, increasing road safety necessitates a complete systems approach, but this is hampered by a lack of trustworthy data due to rampant underrepresentation [4]. This plan promotes a holistic approach, with the phrases decent streets and acceptable accelerations referring to infrastructural aspects, secure cars referring to technologies, and safe individuals referring to real-life issues. This is reflected by the Target Zero strategy, which was adopted as Sweden's road safety policy in 1997 and aimed for zero road deaths [6]. Government attempts to improve transport infrastructure, on the other hand, are not unique. Since at least 1917, driver education and road safety initiatives have been used to influence motorized vehicle driver behavior in order to improve road safety [7]. The dangers of unsafe driving behavior, notably rushing and texting, have been widely researched and highlighted. What is less clear is why, amid well-funded authorities and public awareness programs, a sizable part of the population continues to participate in these practices. This has a substantial influence on the number of injuries and deaths. According to one study, if all drivers followed existing speed restrictions, deaths would be

decreased by 22% [8]. Despite this, data suggests that many drivers do not believe speeding is risky [9]. This implies a gap between objective danger and drivers' risk perceptions, as well as how this affects driving behavior. With the expansion of digital networks available via smartphones and tablets, the nature of work is changing, giving rise to new independent methods of working. The emergence of new types of technology has resulted in the rise of the global marketplace. The marketplace includes workers who are not paid a salary but are compensated per 'task' or a 'variable pay' in which Service officers are connected to users, generally through a smartphone app. Operators and riders that make income are commonly mentioned as freestyle employees or lifestyle workers since they may work when it is convenient for them [10]. Drivers and riders in the gig economy travel in automobiles, motorbikes, and pedal cycles. Examples of those working in the global marketplace are taxi drivers who use their own car, parcel couriers, and fast food delivery drivers, and motorcyclists. It is believed that more than 150 million individuals worldwide operate as contract employees, with official data indicating that five million people in the UK are self-employed. It is unknown many of these 5 million people operate in the global marketplace [11]. According to official figures, around 4 percent of the British people have done some work for the global marketplace in the previous 12 months (around 3 million people) [12]. Workers in the global marketplace are considered self-employed and therefore are not protected by labor law. Nevertheless, these employees are accountable for handling their job adequately, which does not endanger their own or others' health & security. Our goals for this study were as follows: i) to conduct driving behavior for academic security journals; ii) to provide a research framework of typical accidents occurring in terms of articles and references; (iii) to emphasize the influence of driving behavior on the GIG economy (iv) to illustrate the co-authorship of road safety measures with driving behavior; (v) to highlight study patterns; and (v) to illustrate collaboration with driver behavior on road safety measures. This report will help scholars, politicians, and citizens comprehend recent research trends and potential study prospects.

II. METHODS

A quantitative research observes a mechanistic approach for assessing global trends in research in a certain area based on the results of academic publishing databases. This strategy distinguishes quantitative evaluation research from a systematic review, which is often intended to cover the most recent developments, challenges, and future possibilities of a certain topic.

A. Data source and search strategy

The research articles with the title and abstract "driver behavior* road safety outcomes* GIG economy*" were the major focus of this investigation. The earliest publications come from the '90s, while the most recent is from the 20th Century. This query string returned over 500 results. To ensure that no review of the literature was included in our investigation, we added more phrases to the query string, yielding 148 publications that were likely unrelated to our topic. These articles' titles and abstracts used terms like review, contemporary, development, critical, revisit, advance, and highlight. After scanning abstracts and full-texts, we uncovered more than 40 review papers.

The EID, or unique article identification, of these review papers was noted and included in the following search query (so that they would not appear in the next search results). It's worth noting that the easiest way and get the most accurate statistics on an author's production. An author profile is a grouping of all name variations into a single profile. By narrowing the search result to a particular nation, information for single-country publication (SCP) was acquired. The core theme search results were evaluated by the year, publisher, writer, association, nation, topic area, and subject area. For ranking purposes, bibliometric metrics such as total articles, total references, Cite Rating, and h- index was employed. In addition, we developed a sub-theme to investigate output patterns in driver behavior for safety and their implications for the GIG economy. Each application's search string was run individually. Certain phrases were introduced to the preceding search string based on the kind of requests. The publishing output per year was used to examine the search results by sub-theme. There is a possibility that one proposal will overlap with another (s). Table S1 contains information on the search strings used in Scopus.

B. Bibliometric maps

Publications' reference, bibliography, and creator terms were imported to VOSviewer, a software program for creating and viewing Quantitative maps. Items are included in maps made by means of VOSviewer. The objects in this research are the items of interest, such as nations or journalist keywords. A link relationship or relationship between two objects can exist between any pair of items. Every link has a strength value; the greater this value, the stronger the link, as shown by a positive numerical number. In the case of co-authorship research, the link strength among nations reflects the number of articles co-authored by two linked countries, while the overall link strength represents the total strength of a specific country's co-authorship linkages with other nations. Likewise, in co- occurrence research, the connection strength among keyword searches represents the frequency of articles in which two keywords appear together. The user handbook contains information about VOSviewer's functionality [13].

C. Analysis of co-authorship

We considered all nations associated with writers in the co-authorship study. African, American, Asian, European, and Oceania were designated as the continent to which the linked countries/territories belonged.

D. Analysis of co-occurrence

Keywords from articles were used to examine the co-occurrence of text terms (not Scopus indexed keywords). The remaining 700 papers were eliminated from 142 publications owing to a lack of subject matter data. We searched for synonymic single words and congeneric phrases before loading the list of author keywords into VOSviewer.

E. Map applications

The patterns in search outcomes were compared between the major subject (keyword co-occurrences) and the sub-theme (total publication). For instance, if driving behavior is the application, then keyword occurrences for 'driver behave,' 'young driver,' and 'road safety were all tallied in VOSviewer software.

We also looked at the nations with the strongest research trends.

III.   RESULTS AND DISCUSSION

A.   Publication output and growth of research interest

The first release dated from the early 1900s, and there was no further trace of publishing until 1983. It has been stated that a great research interest began in the 1900s. Since then, annual releases have continuously climbed, resulting in significant growth in total articles. It was also discovered that every two years, the number of publications grew by 100. As a result, it is expected that the annual publishing will continue to climb. Nevertheless, the majority of these articles are not free, and the user must pay to access the information contained inside them. We believe that if an article is published in an open-access publication, it will earn more citations. Only 2.2 percent (90 articles) were published as open access in 2017. There are several study fields, and many research groups throughout the globe are actively researching in these areas. According to subject matter analysis, the major focus of research is on safety and GIG economic considerations. Existing research is, in fact, commercial management of the publication. This strategy may be used to promote the social acceptability of emerging technology by creating new narratives based on functional studies. The papers utilized in this study were also published in English, according to the findings. The most widely utilized language (98 percent) was English. Papers written in other languages were not taken into account. When a Scholar submits an item in a different tongue to Scopus, the piece must have a title and abstract in English.

B.   A screenshot of the bibliometric map created on co-authorship with driver behavior towards Road Safety measures

Our findings revealed that 'driving conduct' was the most commonly seen term, with 397 linkages to other keywords (Fig. 1). We also discovered the usage of broad phrases like 'driving behavior (87 occurrences, 108 links) and 'traffic safety' (20 instances, 35 connections). Driving behavior for road safety outcomes was also observed to co-occur with conceptual phrases such as 'traffic safety and 'renewable technology.' It's also fascinating to study how a certain phrase comes to be entrenched. It has been continually popularized by European research organizations. As a result, the phrase is extensively used in many publications connected to incorporating terminology that has been used to refer to the driver's behavior in relation to road safety measures.

C.   Impact of Driver Behaves on the GIG economy.

Figure 2 shows the distribution of states per region. The nearer two nations are situated to each other in VOSviewer, the deeper their relationship, and the heavier the line connecting the two countries. Asia has the most nations per region (25), trailed by EU (21), USA (11), AF (9), and OC (1). The

outcomes of co-authorship revealed that the United Kingdom was the most related state, with 154 occurrences of co-authorship with 35 countries/territories. The United States (30 connections, 400 co-authorships), China (30links, 460 co-authorships), Republic Of Korea (30 links,

220 co-authorships), Thailand (24 links, 104 co- authorships), and others were next on the list. It was also shown that two-thirds of the nations listed had collaborative research publishing with less than 10 countries. The diversity of research institutes, the high number of international recent graduate researchers, and considerable scientific research are all potential characteristics that contribute to the international partnership dynamics. Also, it is vital to get a versatile and sustainable research plan in place to sustain global cooperation's long-term success.

D.   A screenshot of the bibliometric map based on author keywords with overlay visualization mode

Our results showed that in cluster 1, there are 4 items that prevail in red color, which denoted the cluster with the highest number of items and occurrence. In this cluster, big data, machine learning, data analysis as well as data visualization values are included. Similarly, cluster 2 is one of the most-occurrence clusters having 3 items in the cluster. It has illustrated with the blue color. This cluster shows the bibliographic relationship of research articles with the majors ofaugmented reality, virtual reality, and 3d visualization. The next and 3rd clusters are denoted with sly green color in the extreme right margin. It is also worth noticing that this cluster is highly linked with each other and situated at once section of the whole diagram, which describes a strong bibliographic bond with a high occurrence of items. The rest of the clusters are also narrated the bibliographic relationship of each research article with one another, shown in figure 3.

E.   Average Road traffic injuries are happening in terms of publications and citations.

In figure 4, VOSviewer has been presented that average road traffic injuries are happening in terms of publications as well as citations. There are 5 points in red color that interact as advanced driver system, advanced vehicle technologies, age, drivers, and driving.

F.   Driver Behave for Road Safety

Our results showed that there are 4 clusters. According to cluster 1, there are 12items that prevail in blue color, which denoted the cluster with the highest number of items and occurrence. In this cluster, attitude and driver behavior values are included.Similarly, cluster 2 is one of the most-occurrence clusters having 7 items in the cluster. It has illustrated with the greencolor. This cluster shows the bibliographic relationship of research articles with the majors ofaugmented reality, virtual reality, and 3d visualization. The next and 3rd clusters are denoted with red color in the

extreme left margin with 9 items. It is also worth noticing that this cluster is highly linked with each other and situated at once section of the whole diagram, which describes a strong bibliographic bond with a high occurrence of items. The rest of the clusters are also narrated the bibliographic relationship of each research article with one another, shown in figure 5. Traffic safety is a critical concern, with traffic accidents responsible for more than 1.1 million deaths and 49 million hospitalizations worldwide each year. Driver conducts a role in more than 90% of collisions, with speeding being a key cause. Significant effort has been expended to improve our understanding of the elements that impact driver behavior in order to develop more effective road safety tactics. Nonetheless, drivers frequently participate in unsafe driving behaviors such as rushing, impaired driving, sudden accelerating, and deceleration. By narrowing the query, the findings may not include all linked studies accessible on Scopus. This is due to the fact that some studies did not refer to their systems and instead used alternate words. Future research should compare the results of several databases, such as Scopus and Web of Sciences. Web of Science search results, for example, dynamically highlight the most famous publications in the subject thanks to a feature known as 'hot paper,' which Scopus currently lacks. This hot document feature highlights essential studies that are recognized extremely quickly after publication, as evidenced by a considerable citation count. A complete research will benefit from bibliometric analysis using several data sources.

IV.   CONCLUSION

The gig economy Work is a non-standard formal contract characterized by job augmentation, uncertainty about work availability, task-by-task remuneration, and workers designated as independent contractors rather than employees. Based on the papers collected from the database, this study gave an overview of research trends. Publishing development has been tremendous in the previous ten years, and it is expected to continue. We uncovered nation's institutes (for example, Japan, Thailand, and the United States) with a large number of publications and significant international cooperation. These organizations can provide opportunities for scholars from different nations to expand their research relationships. We have highlighted numerous topics that are actively being researched, such as driver behavior for safety and the effects on the GIG economy. Not to mention the ongoing efforts to find low-cost materials those are widely available.

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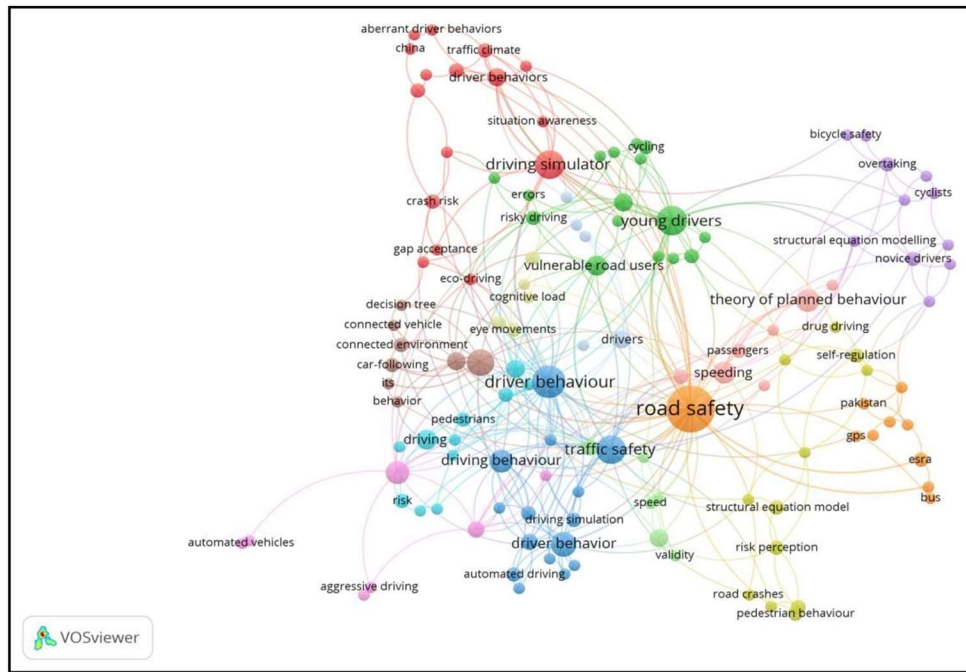
Figure 1: A screenshot of the bibliometric map created on co-authorship with driver behavior towards Road Safety measures
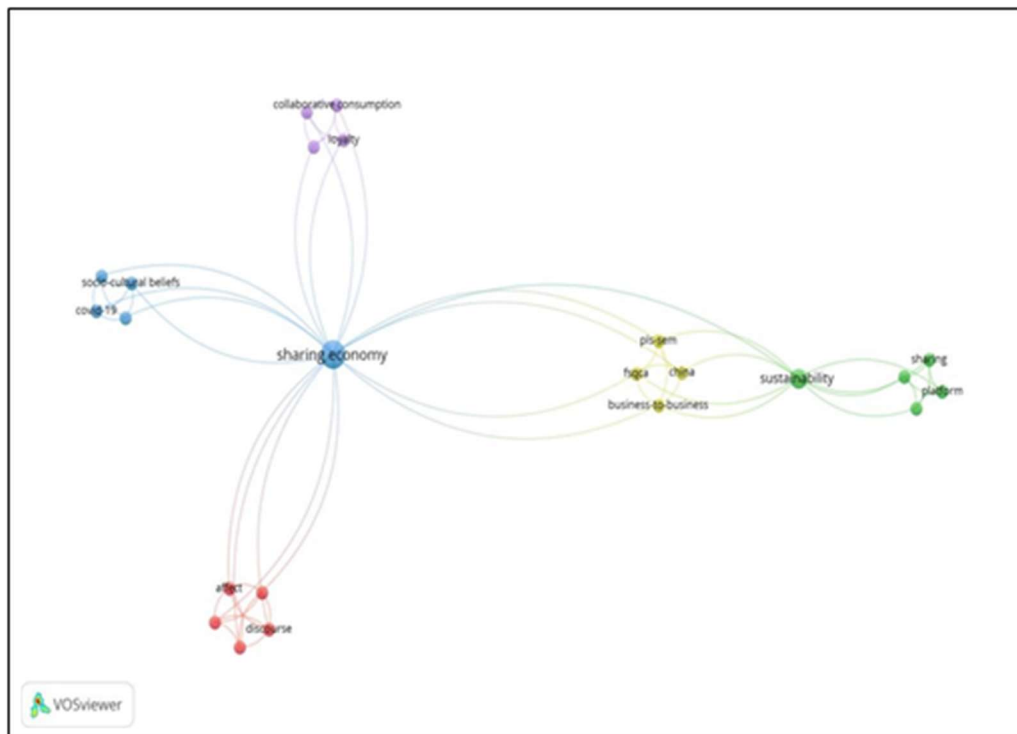

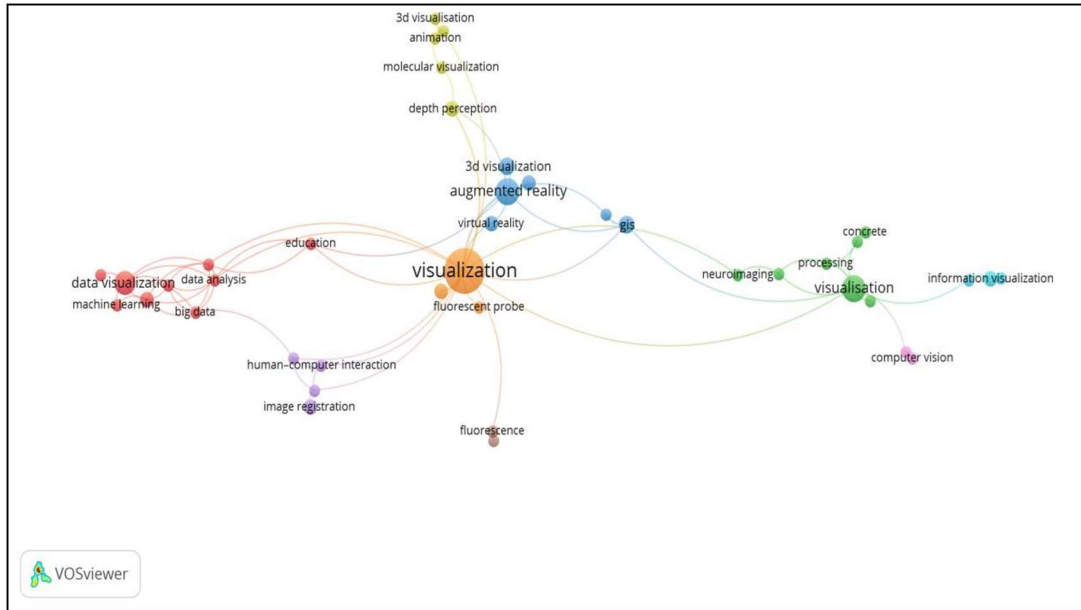Figure 2: Impact of Driver Behave on the GIG economy

Figure 3: A screenshot of the bibliometric map based on author keywords with overlay
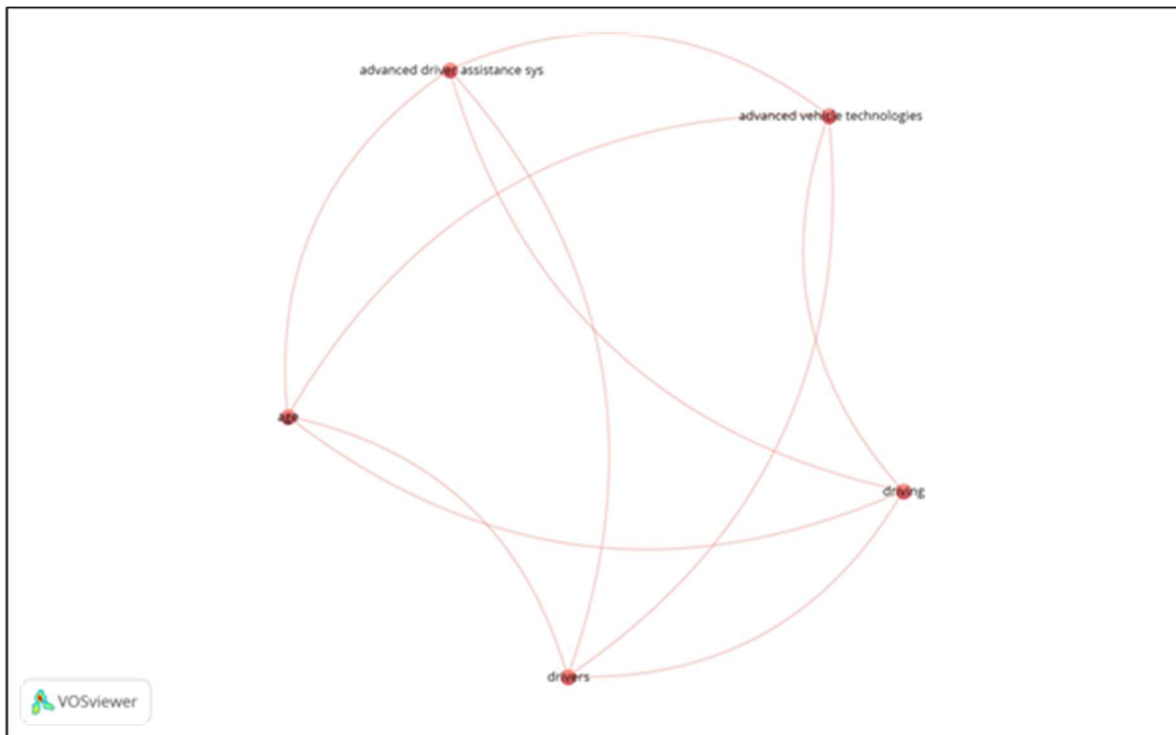visualization mode

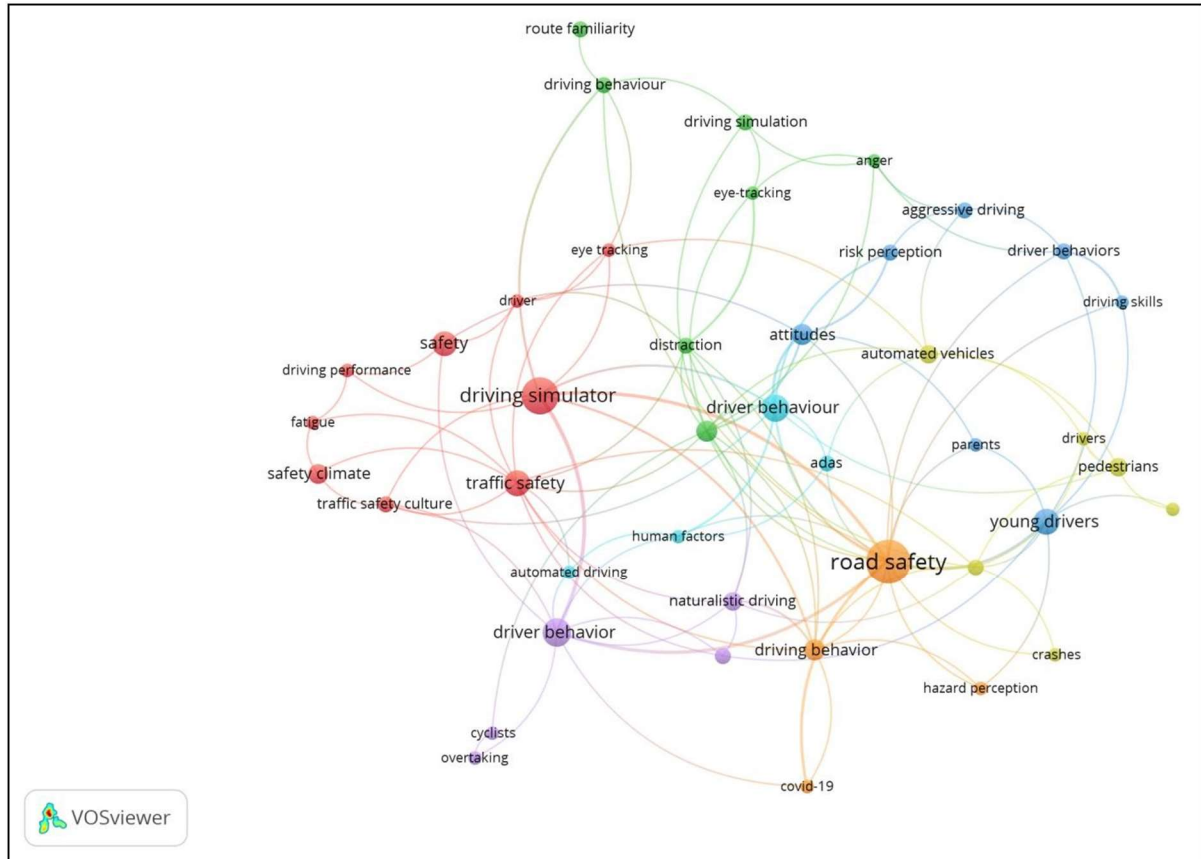Figure 4: Average Road traffic injuries are happening in terms of publications and citations

Figure 5: Bibliometric analysis of Driver Behave for Road Safety