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# **EXPLORING PUBLIC INTEREST ABOUT BLOCKCHAIN AND RECRUITMENT: EVIDENCE FROM USING GOOGLE TRENDS**

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## **Abstract**

Challenges with blockchain technology will not just of how it can offer transparency therefore it is trustable, and traceability since the process is known well by parties that involves in. Strategies have been developed by several countries and companies that have some interest in this technology. Method for research employ big data resulted from Google Trends, as Google may show massive number of queries through traffic data, called public interest and it can be used for research purpose, analyzed and show what is called the unrevealed interest cycles and which countries that has the most searches on this. We also show comparison between traditional process of recruitment and what if blockchain applies in recruitment process. Result of this research shows that public interest increasing in December 2017 after six years for blockchain as term search but decrease in June 2018, while recruitment increases from 2011 to June 2018.

**Keywords:** Internet, blockchain, recruitment, public, interest, google, trends

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## **Introduction**

There are many practices of recruitment, that somehow all human resource practitioners need to follow. Company usually use several techniques for its recruitment tool, as far as we all know, classical recruitment tool is by placing advertisement through a bulletin boards or by posting openly through announcement, words of mouth. But, interesting fact, that with technology presence, it changes methods of recruitment, from usually rely on traditional and classical way of recruitment method to the using of technology, especially what we consider as new media. This is just an illustration on how company

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taking a much more conservative approach to hiring and experienced in measured growth and slowly decision-making process (Sanford, 2012). Shifting in recruitment process from traditional model to digital model, then when resume that written in traditional way is being replace with online footprint made by candidates (Clarke, 2016). Moving from previous model as derived from past practices and possibly instinct and toward information driven decision making (Maurer, 2017).

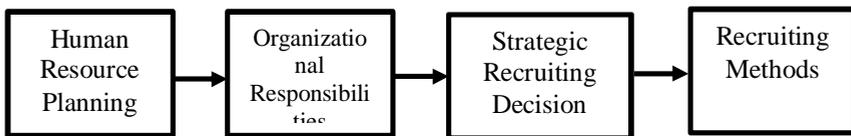
One of the practices of recruitment tool is new media through social media, that has been practiced since it is cost savings and offers snapshots of job applicants quality. Among many social media platforms, we know that some of it still become recruiter's options, and Facebook is the common platform that can be usable for recruiter to find job applicants (Maharani, 2018), and the same time checking their quality through network research, however, though it may be raise another issue such as privacy, but what we need to understand is that recruitment, as in process, has shifted (although still applied) from traditionally paper documents, to paperless. On other words, the more technology is applied and develop, the more recruitment process (and actually others too) will adjust and practice it.

### **Literature Review**

The more decentralized a process, the better the whole process. Everyone may experience that technology will turn business models to a more decentralized models (Ignaczak, 2014), and since being decentralized meaning creating common prosperity (McKibbin, 2015), therefore if a business model become decentralize then it will create common prosperity among beneficiaries. But to decentralized is also to be aware about trust issues, will it be trust if decentralized? Recent issue (although it is not a new issue), blockchain technology arrives as technology that 1) limitless, 2) trusted within its system of records, 3) ensuring anyone can benefit from instantaneous, 4) transparent and cost-effective transactions, 5) disintermediating middlemen (Hendricks, 2017), blockchain technology is perfectly capable of making paperwork CV's and career networking websites obsolete (Ahmed, 2018).

Within human resource management activity, we understand four domains (Rowley, Jackson, 2011), that are: employee resourcing as the first domain, employee rewards as the second domain, employee development as the third domain, and employee relations as the fourth domain. Recruitment will have relevancy with employee resourcing. Usual recruitment method practiced by companies are internal and external recruiting sources along with their advantages and disadvantages (Mathis and Jackson, 2008). Studies shows, how trends emerge in recruitment strategies, from classical method using papers, to

modern method using online self-reported profile like social media (Kavitha and Pillai, 2011). Recruitment can also be defined in concept, as part of activity when an organization tries to attract individuals according to a timely basis, this activity should meet sufficient numbers and also should be considered with appropriate qualifications according to jobs within an organization (Mondy and Martocchio, 2016). Whatever the recruitment process that organization choose, it has to meet strategic recruiting stages, as follow



**Figure 1.** Strategic Recruiting Stages (Mathis and Jackson, 2008)

From figure 1, we understand, that to decide which recruiting methods that will undergo by an organization, first is to set the human resource planning, then organizational possibilities, then strategic recruiting decision before ends with methods of recruiting. This logic will be same on deciding whether an organization should employ the latest recruiting method.

There are plenty digital resources to learn about blockchain, however, as basic understanding, writer compile some sources that is valuable. When bitcoin first introduced to the world, it considered as the first known blockchain application. But, blockchain and bitcoin are not the same (Belin, 2018) However, since bitcoin known as unregulated shadow-currency, and intensively need resource, then the idea is developed to business needs. The differences are 1) identity over anonymity, 2) selective endorsement over proof of work, 3) assets over cryptocurrency (Dill, 2017), blockchains are secure database by design (Marr, 2017), and it is believed can creates a viable, decentralized record of transactions or what has been known as the distributed ledger, which allows the substitution of a single master database (Belin, 2018). Blockchain as a technology, creating the backbone of what is called a new type of internet, and at first it was devised for turning traditional currency to a digital type of currency (blockgeeks.com, 2018), it is obvious then, why bitcoin as digital currency is known better than blockchain, while in fact digital currency is just one of blockchain technology, and there are many other potential uses for it. Frankly, if us as Google users, we might acknowledge with Google Documents (Mougayar, 2018), it changes the way of sending and sharing files, and

let parties accessing each others with the similar document, at the same time, and actually the same way as a shared ledger. From the view of its durability and robustness, blockchain, will 1) free for being controlled, 2) zero failure (blockgeeks.com, 2018) this is why that blockchain believes it can solves problem of manipulation of data (Buterin, 2018). Blockchains have some values, 1) are excellent for recording events, and it can offer the potential of mass disintermediation of trade and transaction processing, 2) it permits anybody, to share their value anywhere at whatever point blockchain can be obtained, 3) it set up trust and characteristics, since nobody can alter a blockchain without having the comparing keys, 4) checking characteristics can be done all the more rapidly and precisely to avoid extortion and recording real exchanges (Marr, 2017).

lockchains offers a confided in benefit for organizations, with the goal that organization could check to approve that a hopeful has the correct aptitudes, on the correct frameworks and the correct associations, at that point it will enhance the way toward screening applicants and diminish the measure of time spent by spotters and contracting directors (Xuereb, 2017). In this manner the methods for blockchain for HR and particularly enlistment are: 1) another problematic innovation is rising and it has achieved a state of development that it will keep on developing into an out and out texture for society much like the web today, 2) people will have full control over their own information, to counteract distortion, 3) selection representatives and HR divisions will approach a competitor's instruction, business and preparing record that is exact and hard if not difficult to misrepresent, 4) Smart Contracts will have the capacity to streamline a great deal of the onboarding procedure, particularly for high volume, high turn-over positions (Akmeemana, 2017). This marvel changes the conventional outlook of enrollment process, blockchain as it gives an offer record, it can empower organizations and business confirmed record of people groups references, profession history and capabilities (Newberry, 2018). This article planned to see cycles of open enthusiasm for questions toward blockchain, enrollment, human asset, and human asset administration. Huge of investigation that author look for in this exploration is to see whether open articulation on specific issue.

### **Methodology**

This research use primary data from web as literature, and trends.google.com as secondary data, by typing and combining keywords of: blockchain, recruitment, human resource, human resource management to see interests from internet. Employing Google Trends, to see traffic data, on a scale 0 (< 1% of the peak volume) to 100 (peak

of traffic) presented as weekly relative search volume or RSV that concern on keywords as mentioned before and time series covered from 2004 – May 2018. Writer believe that Google Trends may supported with another source, and for this research purpose, we also use big data displayed in [tradingeconomics.com](http://tradingeconomics.com) to see the employment rate of countries that will show within Google Trends result. Then [xuru.org](http://xuru.org) is also used to compute regression online, this is to seek whether any effect from one situation to another situation. From using several tools to calculate, writer believe that the discussion drawn from results will vary and useful.

### **Findings**

Procedures that writer follow can be describe as follow: we use [trends.google.com](https://trends.google.com), and we enter keywords: blockchain and recruitment (as comparation). We set worldwide as our country context, length of time from 2008 to July 2018, we set “jobs and education” for categorization, and “news search” as our focus on interest. Figure 1(appendix) illustrate how interest over time in regard to blockchain, regarding to keywords as blockchain, recruitment, human resource, human resource management, and employment. We focus only to two keywords: blockchain and recruitment although in fact we are also demonstrate other related keywords. Figure 2 (appendix) illustrates dynamics of public interest in keywords as mentioned above. As we can see that there is a fluctuation in one keyword. While the rests will be quite similar, as if we derived into several terms, then we will have another information as mentioned in Figure 3 (appendix).

The red graph representing recruitment, while blockchain was represents by blue as color. We put human resource and represented in yellow color, human resource management in green color and employment with purple color. From there, we may see that keyword: blockchain receive less than 1 billion of all Google searches, while keyword: recruitment receive 69 billion of all Google searches on May 2011. Compared with May 2011, there is an increase on public interest toward keyword: blockchain and keyword: recruitment within December 2017. Therefore, we may draw a table concerning this

Table 1. Google Searches

Time frame	Topic that are observed	
	Blockchain (in billion Google Searches)	Recruitment (in billion Google Searches)
May 2011	1	69
December 2017	30	72
June 2018	14	80

While results concerning countries with their employment rate in percentage as follow.

Table 2. Countries and Employment Rate

No	Name of Country	Employment Rate	
		January 2017 (%)	January 2018 (%)
1	Germany	75,3	76
2	Spain	61,05	62,57
3	Italy	57,7	58,1 (December 2017)
4	France	65,3 (2017)	(April 2017) 65,1 (October 2017)

Using linier regression (xuru.org), we employ table 2 colum January 2017 and regress it with table 1, the result as follow.

$$y = 1.026573427 x - 43.48391608$$

Correlation Coefficient : r = 2.882619255·10<sup>-1</sup>  
 Residual Sum of Squares : rss = 2078.623776  
 Coefficient of Determination : R2 = 8.30949377·10<sup>-2</sup>

But, when we employ a linear regression method to see if there is an influence from the employment rate to public interest, and the results obtained from regressing table 1 and table 2 column January 2018, as follows.

$$y = 8.208696646 \cdot 10^{-1} x - 29.72313688$$

Correlation Coefficient : r = 2.280480505·10<sup>-1</sup>  
 Residual Sum of Squares : rss = 2149.102594  
 Coefficient of Determination : R2 = 5.200591336·10<sup>-2</sup>

From here, we may see that deviations resulted from prediction of actual empirical values of data is decreasing, while of the other hand the correlation coefficient or  $r$  is increasing, meaning that the strength and direction of linear relationship between employment rate and blockchain as terms is a perfect or positive linear relationship. Last, the coefficient of determination as the output of regression analysis, shows that 83,09 percent is predictable when using employment rate in January 2017 to determine blockchain as term rather than using employment rate in January 2018, that resulted in predictability as 52,05 percent.

## **Discussion**

Google Trends, offered a fair-minded example of Google seek information, and there are two sorts of Trends information (support.google.com, 2018), first is ongoing information, that came about because of arbitrary example of inquiries from the most recent seven days, second is no constant information, that came about because of an irregular example of Google look information, and it can be pulled from as far back as 2004 and up to 36 hours before looking term. After gathering of pursuit information is finished, at that point next is 1) to order, 2) to associate it to a theme, and 3) to expel if any individual data is shown. From here, at that point in the event that we can relate with the theme that saw in this exploration, there is a slight enhancing of blockchain as term looked in Google Trends inside seven years (May 2011 – December 2017), implying that open put intrigue more to this term. As we contrast and news, organizations over the world, utilize blockchain and what we know as advanced records as means for anchoring their organizations record exchanges and process other information over the web (Bloomberg. 2018). It's entirely fascinating to know the advantages of utilizing Google Trends, particularly when everybody would now be able to seek on a theme that is viewed as a pattern and see the progression of patterns from the subject. From an assortment of sources, Google Trends can be utilized to see if there is a decent variety of practices between regions that are put as focal point of perception, or the other way around. From here, we comprehend that blockchain is known for two imperative thing relates with web: security, and processAs we explore further, about security and process that blockchain offers, companies and business across the world are in fact entering the world of "fake", where issues of frauds and counterfeits has been something that dealt with companies and business in their daily. Interestingly, IBM conduct a research, and found that blockchain can actually help business and companies to rescue themselves from fraud and counterfeits (Balasubramanyam, 2018). But Google Trends shows a relative decreasing interest from public, where there were only 14 billion

of searches in June 2018, 16 billion less interest than December 2017. What happen then? While on the other hand it seems that IBM has released the article to public and somehow public must more knowledge on this? This could be due to other factors that made public not only pay too much interest to blockchain as search term. Information given by Google Trends will gives insight into what people are care about and what information that public need as Google sees, it can be used to track all sorts of information. From the data, we may know that public seems to have grown their attention about blockchain and keep the attention about recruitment. Moreover, Google Trends shows that compared breakdown by region (Figure 6, appendix), people from Germany, Spain, Italy and France sees recruitment as keyword compared to blockchain as keyword. Below is table explaining comparisons between four countries and their employment rate.

From here, we may conclude that increases of public searches relate with the increasing rate of employment within those four European countries. Another source mentioned that several European countries signed to join Blockchain partnership at the Digital Day 2018, on April 1th 2018 (ec.europa.eu, 2018). Among members of the blockchain partnership declaration, three out of four countries found in Google Trends as those countries that has high rate of public interest on recruitment and blockchain were listed in between members of the declaration. Therefore, it makes sense why four European countries have the most interest in term recruitment and blockchain.

## **Conclusions**

This article aimed to see cycles of public interest in queries toward blockchain, recruitment, but then since we understand that it should be followed with another terms, then we add human resource, and human resource management to meet this article expectations. We use several tools and source of data to see whether queries will give an insight, and in fact we found that only several countries that pays attention of terms as blockchain and recruitment. The countries were representing European Countries, and surprisingly, since there is an event where the majority of European Countries agrees on blockchain technology, public seems pay more interest on it in several years, although levels of interest were decrease due to some issue that might not be explored only by using Google Trends. This would be the limitation of this research, where writer might not make some judgement on what factors are causing public interest of countries observed decreases during some month. Future suggestions for research, we believe that further research should employ another judgmental factor when dealing with some issues that cannot be found using only from Google Trends.

## Appendix A

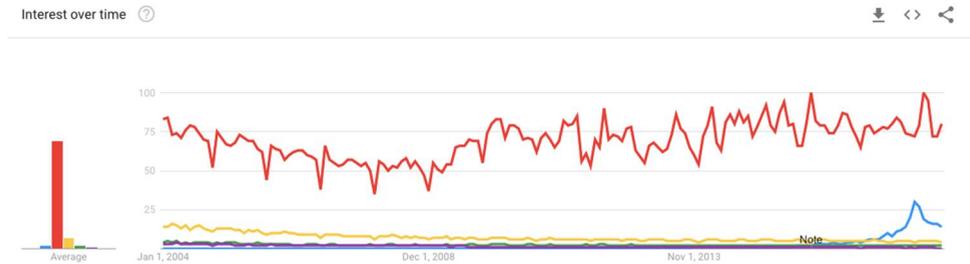


Figure 2. Public Interest in General (Source: trends.google.com, July 2018)

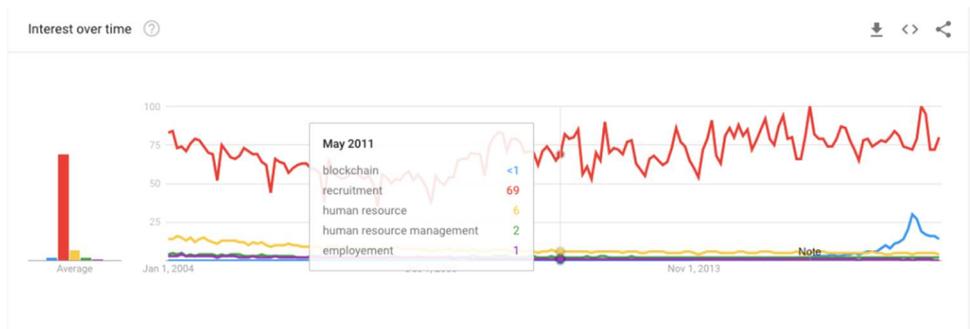


Figure 3. Interest Within May 2011 (Source: trends.google.com, July 2018)

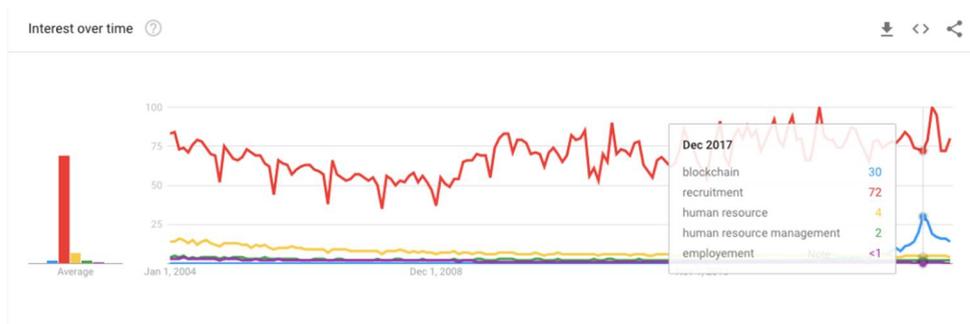


Figure 4. Interest Within December 2017 (Source: trends.google.com, July 2018)

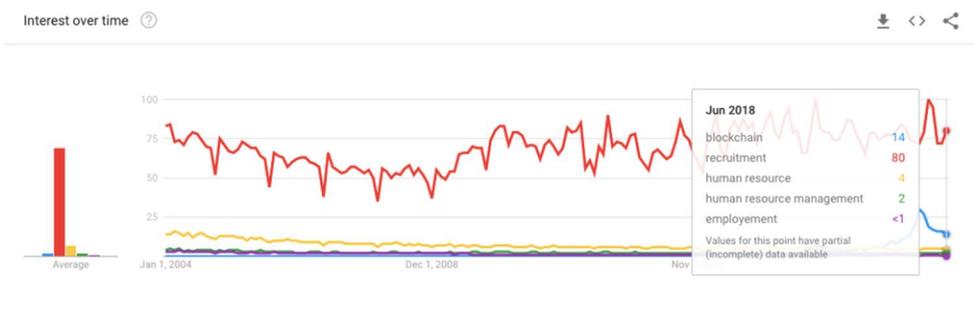


Figure 5. Interest Within June 2018 (Source: trends.google.com, July 2018)

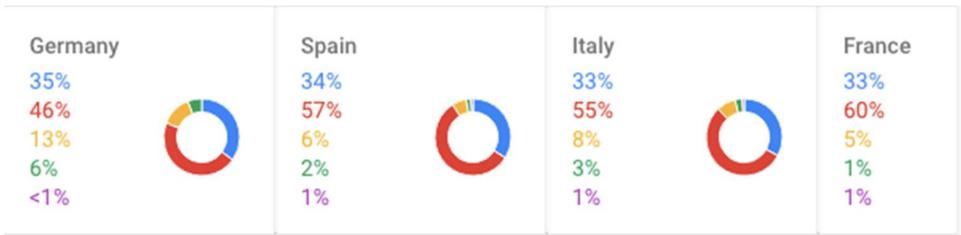


Figure 6. Compared Breakdown by Region (Source: trends.google.com, July 2018)

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