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# Analysis of Employment Trends

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## 1 Background

LinkedIn is an illustrious website that helps professionals connect with one another. It is also a portal for people to display their skills as well as the path that their career has taken through the years. It contains a variety of information ranging from education, knowledge to checkpoints in their career.

Employers also use this platform for recruiting professionals. So it is a useful tool which is slowly becoming a necessity for people entering into the corporate world. Navigation and understanding crucial skills for their profession of choice and the location they would flourish goes a long way in crafting a successful career.

## 2 Scope

### 2.1 Information on Data

The World Bank Group - LinkedIn Digital Data for Development<sup>1</sup> attempts to harness LinkedIn data covering more than 100 countries. For the purpose of this report the following datasets will be accessed:

- Excel: Industry Skills Needs
- Excel: Talent Migration
- Excel: Employment Growth

### 2.2 Scope of Data

The above excel sheets will be utilized for charting trends based on industry skills, migration of talent across the globe and global employment growth statistics.

## 3 Rationale

The report will be charting the trends in LinkedIn across all fields. It will be delving into the kind of skills that are gaining or losing popularity across different verticals as well as what the top few must have skills are for all working professionals.

The other useful component for young professionals is what the migration trends are with respect to their skills and which place would give them space to learn and display their potential.

The final aspect but supremely important one is whether the global employment trends are conducive to their growth. Only upon knowing this aspect is it possible for them to decide whether migration is a good option or upskilling is necessary.

## 4 Research Questions

- Which skills have gained or lost popularity according to the data in each vertical?
- Which are the top few must have skills for all working professionals across the years 2015-2019?
- Global talent migration trend from 2015 - 2019
- Which skills have highest net migration in Business and Tech Sector?
- What is the global trend of employment growth?
- How did the employment pattern change in different industries over the years?

## 5 Methodology

### 5.1 Skills

#### 5.1.1 Trend of skill categories across the different verticals by year

In order to analyse the different skill categories by vertical the excel sheet for industry skill needs has to be used. Upon importing this data the below steps must be taken to generate 5.1:

- Here verticals refers to the different isic sections (within which multiple industries are coalesced)

- The data of the top 10 skills being utilized within each of these industries is present.
- These skills are grouped by the number of skills for each category used within industry for each isic section.
- This gives us a split of the occurrence of the skill group for each section per year. This split is then represented using an animated rose chart for overall comparison as we do not require a quantitative comparison of exact number in this trend.

Year: 2016

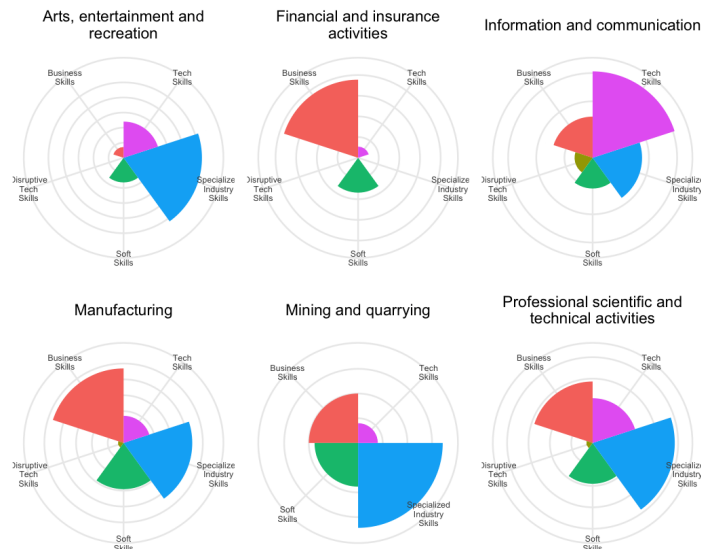
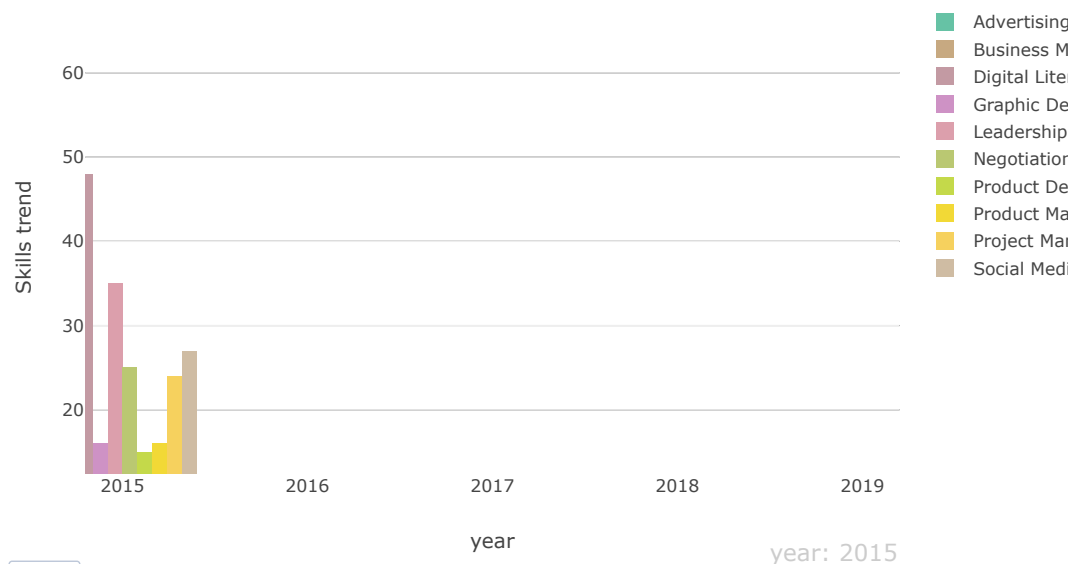


Figure 5.1: Trend of skill categories across the different verticals by year

### 5.1.2 Trend in change of useful skills across occupations

In order to analyse the top 10 useful skills on LinkedIn by year, the excel sheet for industry skill needs has to be used. Upon importing this data the below steps must be taken to generate 5.2:

- The data set is grouped by year and skill\_group\_name variable (which gives the name of the skill)
- The top 10 for each year are then filtered out and used for simulation of graph.



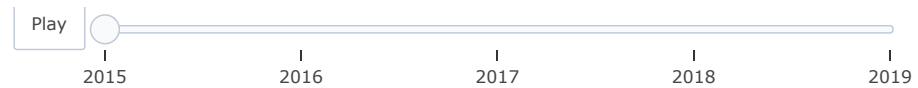


Figure 5.2: Trend in change of useful skills across occupations

## 5.2 Talent Migration

It is observed the most likely to emigrate are high-skilled workers, in particular those with management, research, and leadership skills. LinkedIn best tracks migrations between high-income countries, probably because economic migration of skilled workers makes up a larger share of the migration between those countries than between low-income countries, where it is more likely that migration is forced.

### 5.2.1 Global Talent Migration Trend for Skilled Worker Migration

In order to analyze the annual net migration globally, we have referred to the country sheet of talent migration, assessing average net migration for each base country from the year 2015-2019, generating 5.3

Global Migration Trend from 2015-2019

Year: 2015

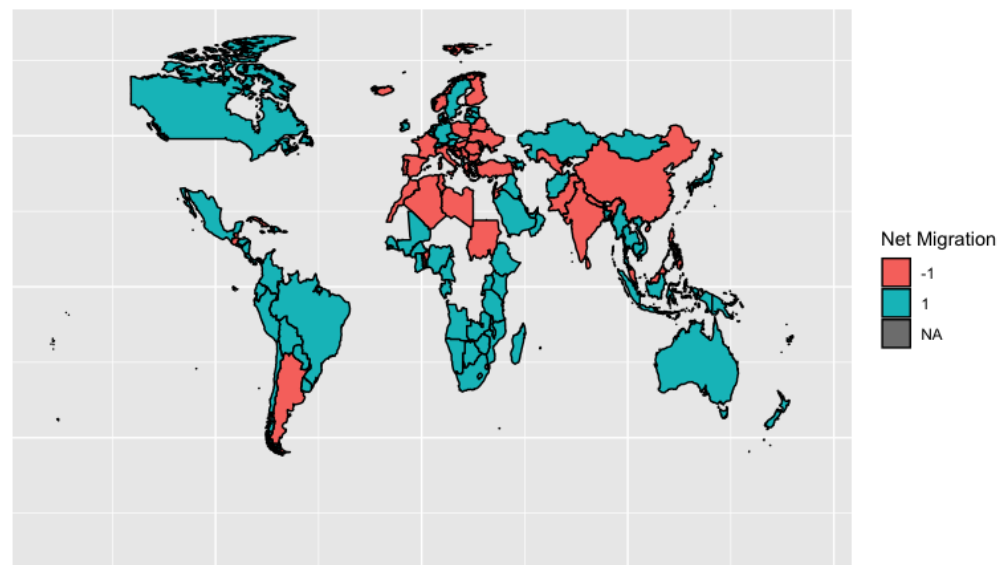


Figure 5.3: Global Migration from 2015-2019

In above map, negative net migration(red) indicates outflow of talent i.e. emigration and positive net migration(blue) indicates inflow of talent i.e.immigration

### 5.2.2 Top countries with highest net talent emigration

5.1 refers to the top 5 countries with highest average net migration for talented skilled workers. This has been calculated by grouping together base countries and calculating average net migration from the period 2015-2019.

Table 5.1: Top 5 Countries with highest emigration

Country Name	Net Migration
Cuba	-11.336000
Jamaica	-8.832500
Haiti	-6.900000
Fiji	-6.633333
Benin	-5.530000

### 5.2.3 Top 5 countries with highest net talent immigration

5.2 refers to the top 5 countries with highest average immigration for talented skilled workers. This has been calculated by grouping together base countries and calculating average net immigration from the period 2015-2019.

Table 5.2: Top 10 Countries with highest immigration

Country Name	Net Migration
Georgia	8.535556
Luxembourg	8.201111
Gabon	6.656000
Papua New Guinea	4.104000
Cyprus	2.956875

## 5.2.4 Industrial Trend

5.3 has been built to find the country with maximum gains in terms of skilled worker for each industry. It has been calculated using the average migration from the period 2015-2019 for each industry and picked out the top ranking country in terms of net migration.

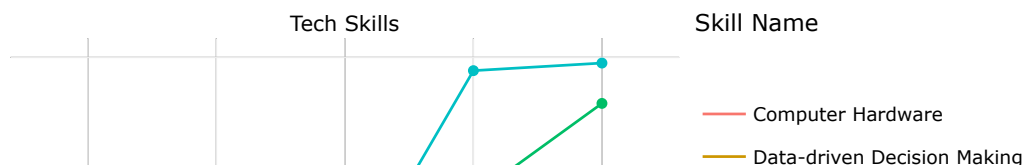
Table 5.3: Top Country Hub for Different Industries

Industry Name	Country Name
Accommodation and food service activities	Myanmar
Administrative and support service activities	Luxembourg
Agriculture, forestry and fishing	United Arab Emirates
Arts, entertainment and recreation	Malta
Construction	Luxembourg
Education	Luxembourg
Electricity, gas, steam and air conditioning supply	Qatar
Financial and insurance activities	Luxembourg
Human health and social work activities	United Arab Emirates
Information and communication	Luxembourg
Manufacturing	Luxembourg
Mining and quarrying	Kuwait
Not_mapped	Switzerland
Other service activities	Luxembourg
Professional scientific and technical activities	Luxembourg
Public administration and defence; compulsory social security	Myanmar
Real estate activities	Luxembourg
Transportation and storage	Luxembourg
Wholesale and retail trade; repair of motor vehicles and motorcycles	Luxembourg

## 5.2.5 Skill Gain Trend 2015-2019

Most high-skilled workers, in particular those with tech and business skills, choose to migrate to a different country with more lucrative opportunities. In Figures 5.4 and 5.5 we observe the top 5 Tech and Business skilled occupation which show gains in skilled workers due to migration to high income countries from 2015-2019.

### Skill Gain trend in Tech Industry



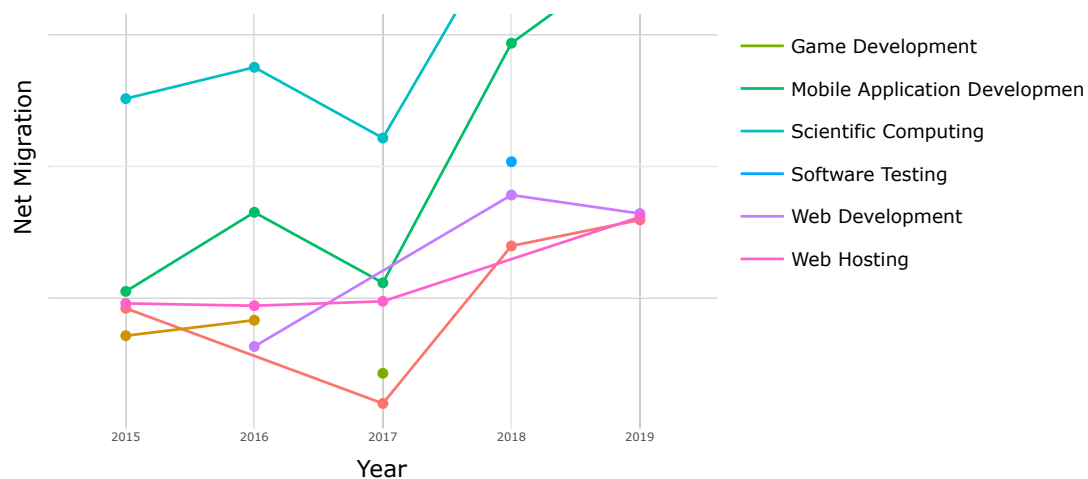


Figure 5.4: Top 5 Tech Skill gains in High Income countries from 2015-2019

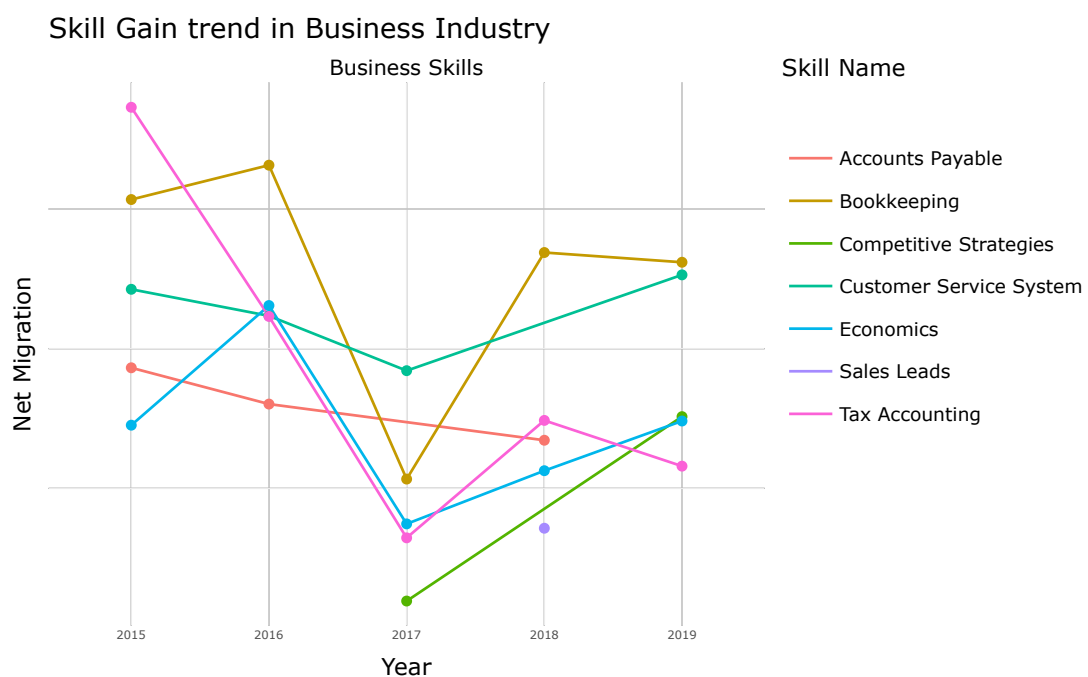


Figure 5.5: Top 5 Business Skill gains in High Income countries from 2015-2019

## 5.3 Employment Growth

### 5.3.1 Global Trend of Employment Growth

To analysis the global trend of employment growth, the growth rate from 2015-2019 was taken to see the rate changed over the years as shown below in Figure 5.6.



Figure 5.6: Global trend of employment growth from 2015-2019

### 5.3.2 Trend of employment growth rate in different industries and income groups

In order to analysis the further development of the trend, the growth rate is separated in different income groups and industries as shown in Figure 5.7:

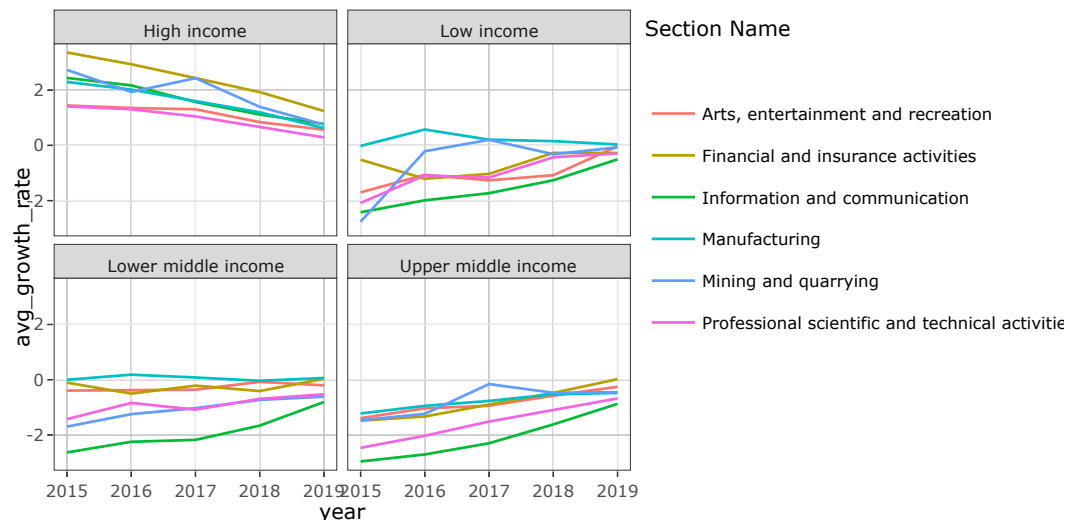


Figure 5.7: Trend of employment growth rate based on industries

## 6 Analysis

### 6.1 Trend of skill categories across the different verticals by year

After examining 5.1, the below highlights were taken note of: - *Soft skills* are the one set of skills that people have **increasingly found need** for across all the verticals. - *Business skills* are finding **less and less takers** by the year. - *Specialized industry skills* seem to have seen volatility as they were **in decline up until 2017-2018** but with the **arrival of 2019 they saw a significant boost in demand**. - *Disruptive technological skills* **do not seem to have caught on** yet except for the Information and Communication segment. - *Mining and Quarrying* have seen **no disruptive tech skills growth** whatsoever. - Fintech<sup>2</sup> is sweeping across the world, however among the people employed in the field of *financial and insurance activities* **little to no technical skills** seem to be visible.

- The skill that is the most in demand across all years is *Digital Literacy*.
- *Business Management, Leadership and Teamwork* are also right behind. *Business Management* however has been **in decline since 2017** while *Teamwork* has **taken the forefront**.

## 6.2 Trend in change of useful skills across occupations

After examining 5.2, the below highlights were taken note of:

- *Digital Literacy* remains the skill that is the **most in demand** across every year.
- *Business Management, Leadership and Teamwork* take up the **next 3** spots.
- However post 2017, *Business management* has seen a **sharp decline** in terms of importance while *Leadership and Teamwork* are becoming **increasingly crucial**.

Table 6.1: Split of the skill groups the top skills belong to between 2015-2019

Category of Skill	Number of times it occurs in top 10
Business Skills	5
Soft Skills	4
Specialized Industry Skills	2
Tech Skills	3

- From the table 6.1 *Business Skills* - 5, *Soft Skills* - 4, *Business Skills* - 2, *Soft Skills* - 3 are the split across the top 2 type of skills. *Business skills* and *Soft skills* still **dominate**.
- *Specialized Industry skills* figure in this list too.
- These are *Research* and *Foreign Languages*. In an **increasingly interconnected world**, it is quite evident why *Foreign Languages* make this list.
- *Research* also forms the **corner stone of innovation** and is an important skill to possess.
- Apart from this, *Social media* is also a **technological main stay** which figures prominently. This is yet another proof of the influence of technology on skills needed.

## 6.3 Trend in Talent Migration

### 6.3.1 Global Talent Migration Trend from 2015-2019

- The **Middle East and North Africa, Latin America and the Caribbean, and South Asia** have seen the greatest talent loss in recent years, whereas **UAE** in addition to Organization for Economic Cooperation and Development (OECD) countries such as **USA, Canada, Australia, New Zealand and Europe** are attracting the most talent.
- **Latin American countries like Cuba, Jamaica and Haiti** have the highest net emigration. Which can be due to poor quality jobs and falling real wages.
- **European countries like Luxembourg, Georgia and Cyprus** have the highest net Immigration.
- **Qatar and Kuwait** are observed to be top countries for energy industries
- **Luxembourg** is observed to be the hotspot for most industries for highest gains in terms of skilled worker migration. **Luxembourg** is considered to be the economic powerhouse of the Greater Region and the financial hotspot on the European continent. Luxembourg's thriving economy is a major argument for many foreign nationals to live in the country. The country's health insurance and social security systems, its high quality infrastructures and the government's support for families has led to one of the world's highest quality of life standards. Multilingual environment: When so many people from all parts of the world come together, communication is key. Luxembourg's population has always been multilingual, making it easy for foreigners to take part in an open and welcoming society<sup>3</sup>

### 6.3.2 Skill Gain due to Migration

Most skilled workers migrate to a different country in search of lucrative job opportunities. It is preferable to migrate to a higher income country which have more promising job opportunities. In the above plots, we can observe the following in high income countries:

- In traditional business occupations like **Bookkeeping, Tax Accounting, Economics** have shown a downward trend, concluding that there are fewer people with business skills opting to migrate to another country in search of jobs.
- People with tech skills that are choosing to migrate to high income countries are mainly skilled in domains like **Scientific Computing and Mobile Application Development** which have shown a steep upward trend.

**Top Skill Gains in High Income Countries in 2019 due to migration**

*Tech Skills*

- Scientific Computing
- Mobile Application Development
- Web Hosting - Upcoming skills with Cloud computing trend
- Web Development
- Computer Hardware

*Business Skills*

- Competitive Strategies
- Customer Service Systems
- Economics
- Tax Accounting
- Bookkeeping

## 6.4 Trend in employment rate

### 6.4.1 Global Trend of Employment Growth

According to Figure 5.6, it is found that the employment growth rate in high income areas such as the USA, European countries and Australia were **slowing down**. However, the other income groups had an **increasing trend** on the growth rate. Whereas based on Figure 5.7, the high income group had a downwards slope on employment growth rate whereas the other groups had an increasing trends. The reasons are as follow:

- The low **oil price had delayed the interest rate hikes in the high income countries**. However, it has **brought opportunities to oil importing countries** like India and China, which lowered the production cost and increased the competitive of the products produced.<sup>4</sup> This slowed down the development in high income countries meanwhile swapped the chances to the other income groups.
- The **political disputes** threatened the global growth. For example, the "Trade wars" between China and the USA had brought chaos to the global market which badly affect the global economy. This eventually shrank the employment growth.<sup>5</sup>

### 6.4.2 Employment growth

Table 6.2: Top 5 employment growth industries

Industry Name	Average Percentage of Growth
Venture Capital & Private Equity	3.584088
Alternative Dispute Resolution	2.462249
Computer & Network Security	2.097874
Renewables & Environment	2.069448
Aviation & Aerospace	1.673296

Based on Table 6.2, it is found that **venture capital & private equity industry**, which catalyzed technological innovation, had the highest average growth between 2015-2019. The possible reason is that the **new rapid boom in information technology industry required great amount of capital investment**, which boost the growth in these industries.

### 6.4.3 Employment recession

Table 6.3: Top 5 employment recession industries

Industry Name	Average Percentage of Growth
Newspapers	-2.103078
Accounting	-2.074900
Market Research	-1.822482
Outsourcing/Offshoring	-1.798203
Telecommunications	-1.538015



According to Table 6.3, the **traditional media** like newspapers, telecommunications, etc had the **higher recession** from 2015-2019. It is because of the **great boom in social media and social network**. People tend to watch the news online and communicate on social media apps which had shrunk the development in traditional media.

## 7 Conclusions

Professionals in today's day and time are always looking for opportunities to grow in terms of their career. There are multiple aspects to this growth and the environment needed to enrich the growth.

Skills are front and center in terms of must-haves for a fruitful career. From the analysis it is clear that soft skills are a necessity regardless of vertical. Business skills have no longer remained the mainstay that they used to be and tech skills are here to stay however their disruptiveness in every sector is up for debate.

As one chooses to upskill, they find it harder to stay stationary within their old environment and migrate to greener pastures. Rising technology and expanding business in high income countries are attracting highly skilled workers. From above trends it is observed that tech skills like Scientific Computing and Mobile Application Development has seen an upward trend in terms of skill gain due to migration. This can be attributed to rise of technology. Business Skills like Competitive Strategies are new age era skills that have a potential market in high income countries for expanding business.

However we also need to consider whether the current economy is at the state where such activities are possible and employment growth would directly relate to whether the upskilling has to do with retaining jobs or switching them out. The Information and communication sector has a rapid boom in recent years which indicates that there are larger demand of labor whereas the recession in traditional media and communications sectors cause more and more labor being laid off.

## 8 Recommendations

- Professionals need to upskill in non conventional fields like social media to remain up to date.
- Digital literacy is an important must have for this day and age.
- Business skills and soft skills are a necessity as well for people in all fields.
- Tech skills are evergreen. Skills like Scientific Computing are new age era skills.
- Try to look for jobs in financial and information technology industries, avoid to look for the jobs in traditional media industry.

## 9 Limitations

- Currently the weight of the different skills according to ranking has been disregarded so some level of depth is lost in terms of importance.
- The employment growth rate is observed in global trend, it may not be accurate when it came to specific local analysis.

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