



**RESEARCH PAPER**

**Higher Education Enrollment Trends and Respective Job Opportunities: A Specialization based Comparison of Pakistani Perspectives**

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**ABSTRACT**

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Higher education has produced novel meadows of occupation in accordance with the constantly varying needs and social necessities of mankind. As a result, usual fields' of specializations are getting swapped with the new ones. With the appearance of the new specialization-based opportunities in the marketplace, the enrollment trend in higher education has significantly improved in the last two decades. Graduates are willing to join job-oriented subjects at the higher education level. The study at hand is an attempt to investigate the higher education enrollment trend and their subject-related job opportunities in Pakistan. The study was of quantitative nature in which enrollment data were obtained from the register office of public sector universities having campuses all over the Punjab. For the job opportunities selected newspapers of were consulted for the six years of the study. The survey-based investigation found that maximum enrollment is in the science subjects which are job-oriented fields and maximum jobs are available for the science graduates.

**Introduction**

Higher education is one of the most important pillars of prosperity and development in the state as well as at the world level (Thunder, 2020). It has been preferred universities and other higher education organizations not only for providing civilized individuals but also a source of trained and skilled persons in the society for serving the nations (Jung, 2020). Higher education helps to understand the social classes, social values, beliefs, and religion (McKinnon, 2017). The demand for higher education is increasing at an immense level because it produces jobs and attractive professions (Altbach, Reisberg, and Rumbley, 2019). Goujon, Lutz, and Kc (2015) noted that internationally there were 32.6 million students registered in 1970

which increased up to 99.9 million in 2000. Moreover, the same study found that 200 million students are registered at the higher education level and this enrollment became 89 million in 1998. Similarly, according to Calderon (2018) by the year 2030, there would be 377.4 million, 471.4 million during 2035 which will be 594.1 million students by the end of 2040. Few countries like Japan and Korea have got their target of general higher education just about 80% (Symaco and Chao 2019). Generally, the higher education enrollment in China, the USA, France, India, Korea and is high and the enrollment of students in Canada became twice throughout the last decade (Cooper 2017; Dennis 2019). In near future, the students receiving higher education will be divided into two diverse groups for example evening and morning (Dubey 2019). Higher education starts after class 12 in Pakistan. It accommodates individuals from 17 to 23 years of age .in Pakistan, only 5.1% of the people in the age group 17-23 years had the opportunities of higher education (Demirgüç -Kunt et al. 2020). like other countries, Pakistan is also creating more and more opportunities for higher education for their people but their jobs are not being provided accordingly. It is very challenging for establishments in Pakistan for providing jobs. Authorities are unable to give jobs to their graduates. The percentage of unemployment was 49.7% in Pakistan during the year 2001 to 2002 which remain the same from 2005 to 2006 and a minute raise up to 50.0% throughout the other periods in Pakistan (Batool and Jamil 2019).In Pakistan, it is very important to focus on the relationship between graduates' fields of subjects and their available jobs. It is also important to check the trend of students' enrollment in science subjects and which subjects' jobs are advertised by the government. There is a need to review the trend between the higher education enrollment and the job opportunities and significance in Pakistani viewpoint, while on this topic many investigations have been completed in the various parts of the world, but not a single research was completed in the Pakistani situation. For this purpose, the researcher has planned to undertake a research study tilted higher education enrollment trends and job opportunities in Pakistan: a subject-based comparison.

### **Literature Review**

Higher education nowadays serves as the key instrument for development and growth in the country. It is considered the key to realizing the dream of a knowledge base economy throughout the world. On the other hand higher education is playing a fundamental role in the development of nations, societies, and individuals. The nations which are ruling the world nowadays are highly dependent upon their higher education institutions for uplifting technology and modernization in their societies (Ali, Saeed, & Munir, 2018). These nations are not only upgrading their societies but also improving standards for the whole world. The developing countries are following the example of these states to redesign their higher education system to meet the minimum level of requirements for uplifting the status of the people in their respective states (NEP, 2009). In short, it would not be irrespective to state that in the present world higher education has become the engine of social as well as economic development for both advanced and developing countries.

But, despite this importance in the past higher education had not been given due importance in societies, especially in the developing world. Since 1950 higher education had not gained importance for social as well as infrastructural

development. In the years to come developed countries improved significantly their higher education system to attract a large number of students not only from their states but from around the world (Kauppinen, 2013). Have with the involvement of the private sector in higher education not only the number of students increase but also the number of institutions was significantly increased vote in developed as well as developing countries. In Pakistan after the establishment of the Higher Education Commission, rules and regulations were also revised to accommodate the private sector in the higher education teaching and learning process since then several private universities have been established in Pakistan. With the emergence of private sector involvement in higher education, the number of students considerably increased but questions like the cost-effectiveness and the quality of higher education were also raised in the coming years (Ball, 2004; Tilak, 2006; Tilak, 2007). Higher education became unaffordable for people with low income and a race between private institutions was started. ItIn this race the quality of higher education was neglected and much focus was on the number of students and increasing the strength in the universities (Khan, 2015).

The most important reason for the rapid growth in higher education is its global demand (Halai, 2011). Due to development in human resources, and innovation in means of production, services, and operations, owing to advancements in technology. Moreover, the profit aspect in higher education for private institutions has also caused the rapid growth of this sector in both developed and developing countries Including the third world countries like Pakistan (HEC; 2014).

There had been a tremendous increase in enrollment at the higher education level since the establishment of Pakistan. At that time there were only two universities in Pakistan with few higher education level students. But in the subsequent years the enrollment has increased e.g. by 1992 there were 16 universities in Pakistan and from the start of the new Millennium, an uplift in higher education is witnessed in Pakistan following the trends of higher education in the world. The number of universities in Pakistan has have reached 180 from 32 in years 2002 to 2017 (HEC, 2017). As far as enrollment in Pakistan the university is concerned it has significantly increased since the start of this Millennium. In both genders, higher education has increased significantly the total enrollment head reached 200,000 to 1400 000 from 2002 to 2015 (HEC, 2015). A pictorial view of this increase in higher education and enrollment in Pakistan during the sad years is shown in the figure below;

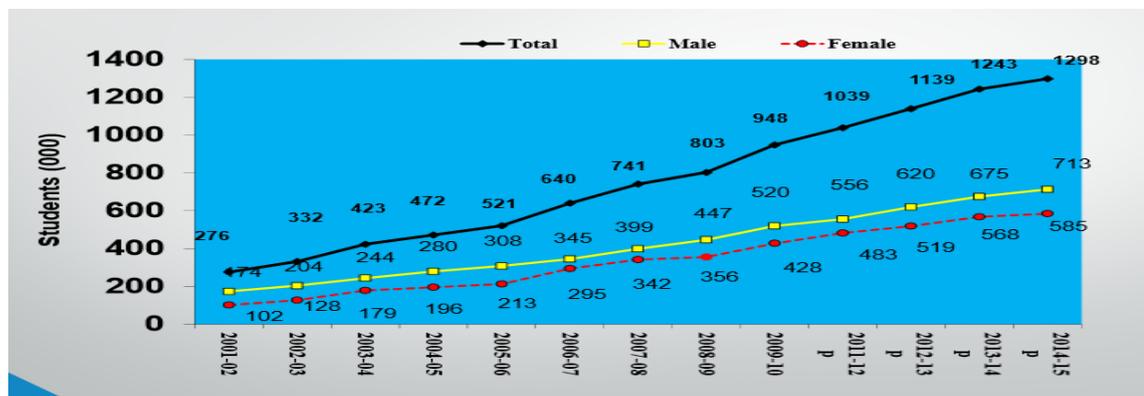


Figure No. 1 Enrollment at higher education level (Source: HEC, 2015)

Higher education is imported to serve different types of functions in society including the development of a knowledge-based economy, the creation of new knowledge, and the Development of civilized and skilled people (Marginson, 2004). In the same way, higher education enables people to cope with the challenges of the modern-day and adopt modern technology, and for living a comfortable social as well as individual life (Ali & Tahir, 2009). In nutshell, according to Jandhyala, (2008), higher education should serve the public interest from all perspectives-socially, economically, culturally, and politically.

Employability is one of the important functions of higher education. The majority of individuals join higher education institutions to get skill-based experiences of higher-order so that they can be accommodated in the job market which is continuously changing because of technological advancements and innovations (Ali, & Jalal. 2018). Therefore, Higher education institutions are struggling to create links with the market, a source of employment for their pass-outs. This particular fact is forcing higher education institutions to introduce market-oriented degree programs. Moreover, the students willing to join higher education institutions are now more objective-oriented as compared to the past students as they have more knowledge about the market trends as compared to the earlier students. For thousands of applicants for admissions, higher education is essential for success in practical life. The purpose of higher education is to transform the students through enhancing learning skills, behavior, and lifelong empowerment as critical and logical reflective people (Harvey, 2000). Therefore the emerging trend in higher education institutions is to nourish students in such a way that they are capable to catch a job in the market and live a prosperous life (Warrick, Daniels, & Scott, 2010). It had made the higher education institutions more focused, objectives oriented, technology-based, and marvel market-oriented so that they can fulfill the demands of the applicants and can match the institution and the market collaboration. In the past two decades, the focus of higher education had been the national integrity economic development, and sustainability of the previously achieved targets (Pages & Stampini, 2007).

With the broad environmental technological and social changes taking place in societies, the spectrum and scope of higher education have continuously gone under rapid changes. It had made higher education institutions more vibrant compared to the past. At present, higher education institutions are offering degree programs that had never been imagined in the past nor thought these innovative and modern degree programs are preparing the shoot for the upcoming years where technology and innovations will be the need of everyday life (Yin-Kuaet al., 2014).

In this perspective, higher education has acquired more importance compared to the past in providing skill-oriented education and market base skills so that the pass-outs from the higher education institutions can be accommodated in the market. If the universities fail to provide market-oriented and job-based education, the rapid growth of higher education institutions and the increasing number of higher education pass-outs will create social as well as economic problems for the developing countries, if not further developed. Therefore there is a need to make the

higher education system and the programs at higher education institutions on par with the market demands and rapidly changing social-cultural environment. So that the graduates maxing out from higher education institutions can be respectively accommodated avoiding any kind of mistrust and economically oppressed individuals.

**Material and Methods**

The study at hand is quantitative. For data collection survey approach was used. There were two types of data to be collected to accomplish this research. Firstly, the enrollment of students for the six years of study i.e. 2013-18 was received from the selected university by requesting the registrar's office. The enrollment for BS programs and M Sc programs was taken the selected university. The university was selected purposively it has eleven campuses in the province of Punjab Pakistan. Secondly, job advertisements published from the year 2013 to 2018 Were obtained from the national level daily newspapers. For this purpose two Urdu and two English daily newspapers were selected randomly From the newspapers which had more than 100,000 circulations per day in the country. Moreover, the job advertised in the Sunday newspapers was selected in the study as it has been noticed that most of the public sector jobs are advertised in the Sunday newspapers. This study was delimited to the advertisement of the public sector jobs only

**Results and Discussion**

**Table 1**  
**Faculty-wise Enrollment Trend (2013-2018)**

Sr. No.	Faculty	2013	2014	2015	2016	2017	2018
1.	Natural Sciences	4634	4748	5204	5292	4023	5896
2.	Social Sciences	3331	3463	5078	4548	3468	4913
3.	Business Administration/ Management Sciences	2290	1791	2119	1436	1176	1345

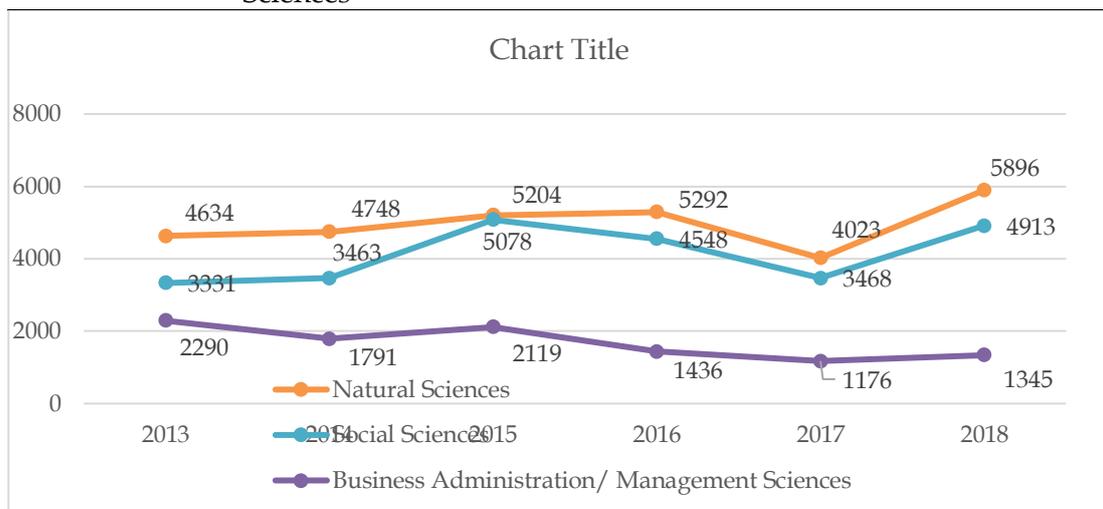
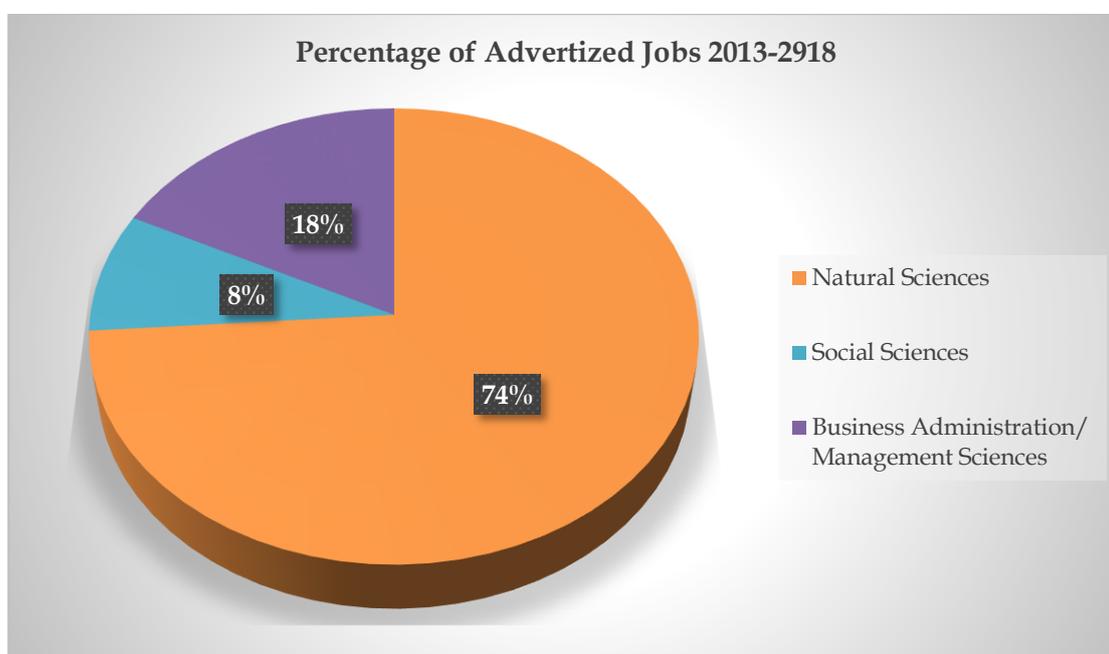


Figure 1 Enrollment trends for the period 2013-18

The above figure shows trends in enrollments from 2013 to 2018. Maximum enrollment was observed in the Natural Sciences and the overall enrollment trend is highest in 2016.

**Table 2**  
**Facility wise status of advertised jobs (2013-18)**

Sr. No.	Faculty	2013	2014	2015	2016	2017	2018	Total
1.	Natural Sciences	408	1207	2314	2108	1001	196	7234
2.	Social Sciences	141	149	165	166	153	56	830
3.	Business Administration / Management Sciences	251	330	453	395	196	102	1727



**Figure 2 Comparison of the Job opportunities**

The data in the above table reflects that most of the jobs were advertised in the natural sciences (7234, 74%) and business administration (1727, 18%), whereas the least number of jobs were advertised in the social sciences (830, 8%) over the six years of the research study.

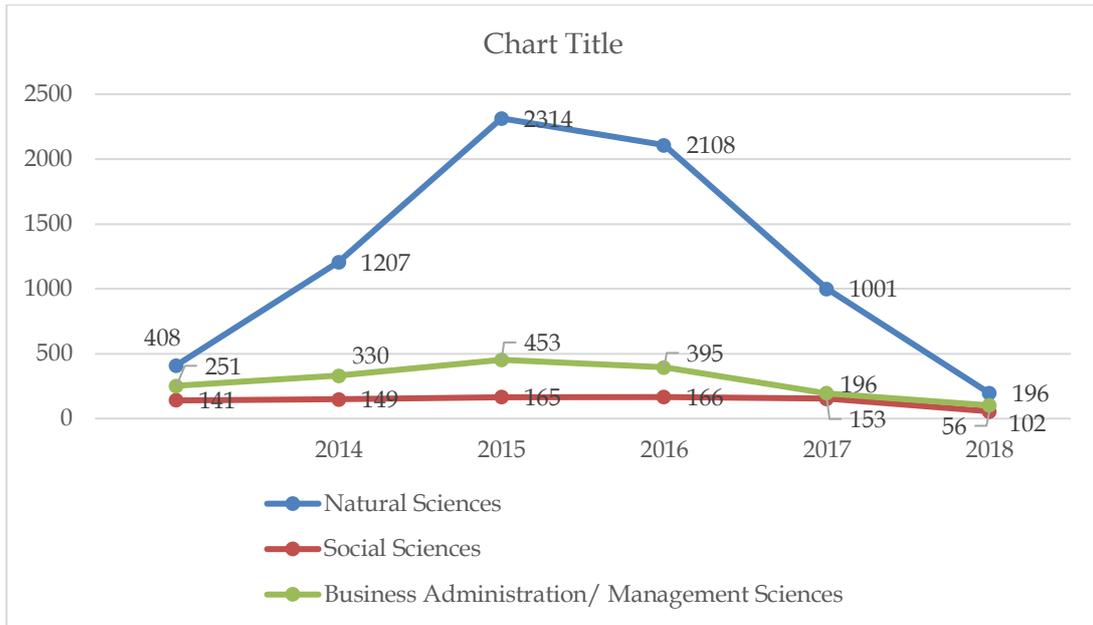


Figure 3: Year-wise Comparison of the Job opportunities advertised

The above graph depicts that most of the job was advertised during 2015 and 2016, whereas 2018 was the year with the minimum jobs advertisement.

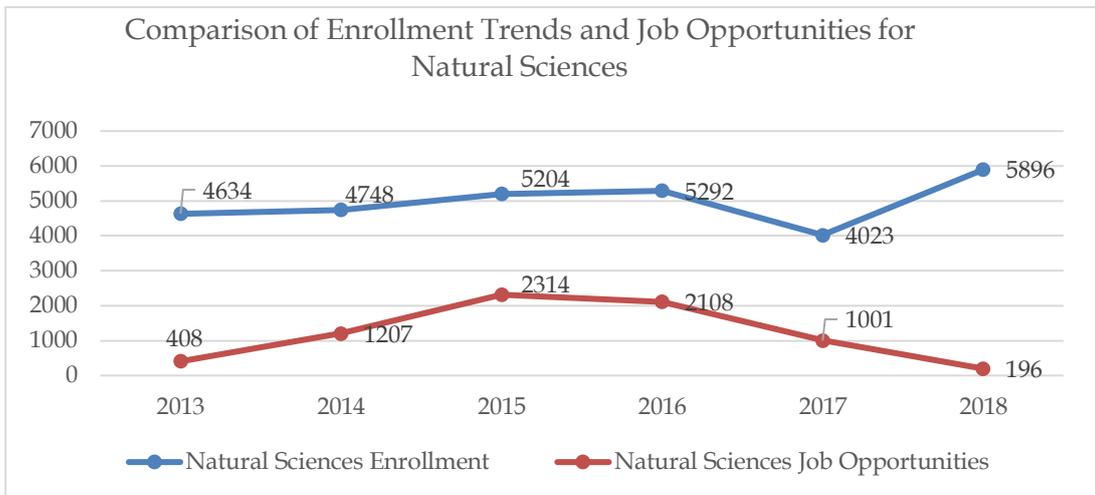


Figure 4. Comparison of Enrollment Trends and Job Opportunities for Natural Sciences

The above graph shows that there is a consistent gap between the enrollment and jobs advertised in natural sciences except in 2018 when the gap considerably increases. Moreover, as compared to the enrollment the jobs advertisement is very less.

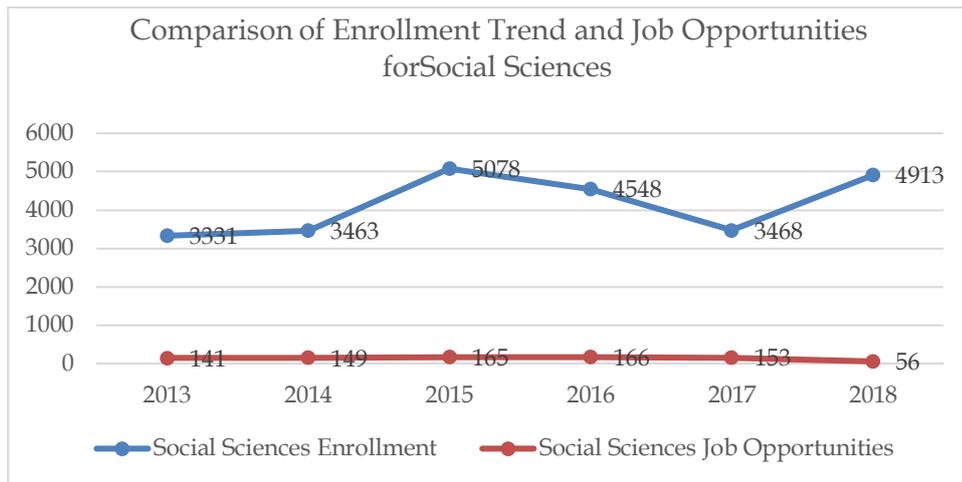


Figure 5. Comparison of Enrollment Trend and Job Opportunities for Social Sciences

The above graph reflects that job advertisement during the six years of the research study there remained consistent, whereas the enrollment had been changing. The gap between the job advertisement and the enrollment is maximum in 2015 and 2018 and minimum in 2013

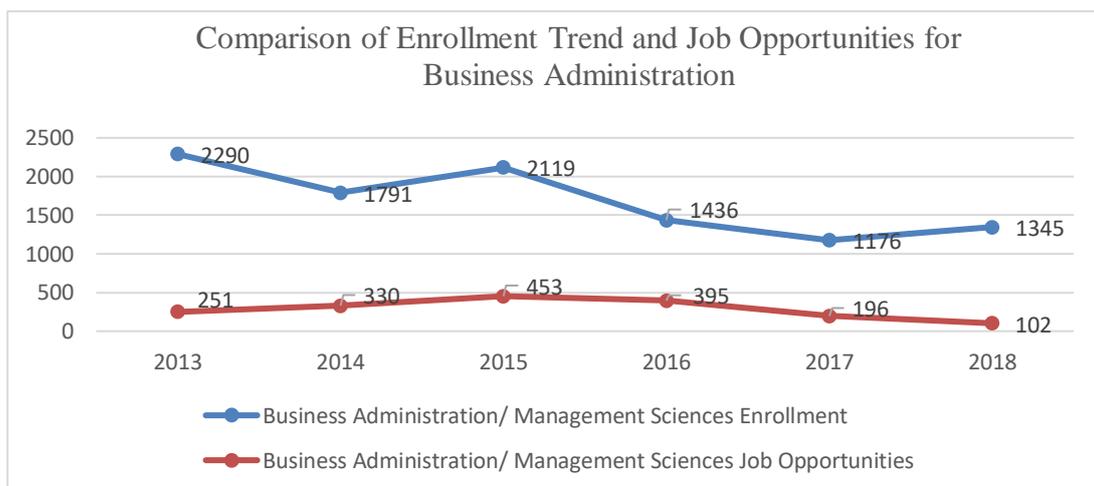


Figure No.6 Comparison of Enrollment Trends and Job Opportunities for Business Administration

Data about the job advertisement and enrollment trend is shown in the above graph which reflects that the gap between the enrollment and jobs decreases over time in the field of business administration but, for the year 2018 the gap again widened.

## Conclusion

Analysis of the secondary data related to six years enrollment trend from 2012 to 2017 of a university reveals that overall enrollments in science subject are increasing in the subjects related to Natural Sciences at the Higher Education the lowest enrollment trend was found in the subjects related to the Business Administration. A

study found that more enrollment was noted in the science subjects (Sithole, Chiyaka McCarthy, Mupinga, Bucklein & Kibirige, 2017). Similarly, the results of another study found that more than 60% of the enrollment was observed in the science subjects (Altbach, Reisberg, & Rumbley, 2019). Similarly, the research studies by Anderson (2020) and Caudill (2020) stated that the enrollment in Math had increased during 2011-2013 in the Science subjects. Likewise, the results of the research study are supported by the study Bianchi (2016) found that an increase in the enrollment of Math, Physics, and Chemistry was noted in the year 2015. Moreover, same research also supported that the enrollment of students in Science and Math had increased in the last twenty-five years. Furthermore, Adolphus (2020) supported the findings of the research that more enrollments were found in the subject of Physics. But the same research study contradicted that the enrollment in Biology increased only as 1%.

On the contrary, to the findings of the research, it was proposed by McNally (2020) that less enrollment was observed in science subjects. likewise, Cooper, Downing, and Brownell (2018) found that enrollment in science subjects was decreasing. Moreover, Archer et al. (2020) explained that the enrollment trend in Natural Science had been decreasing continuously for the last 15 years, especially in Physics. Furthermore, Strogatz (2018) contradicted the research study that the enrollment in the subjects of Math and Science was increasing as 29% every year. In the same way, the results of another research study did not match with the results of the research studies at hand as explored by Cooper et al. (2018) that the minimum enrollment was noted in the Sciences, especially in the subject of Computer Science.

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