Experts

Our nation desperate for more Professional Engineers

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The journey of an engineer begins from obtaining a scroll of an engineering degree till becoming a professional practitioner in their engineering field or better known as Professional Engineer (PE). Becoming a Professional Engineer is an end most achievement for all engineering graduate of any area. The recognition as one of Professional Engineers will provide a sense of triumph to anyone passionate to their engineering profession. The Professional Engineers will only deliver the tasks based on their most exceptional engineering knowledge, accurate problem analysis, optimum solution to the problem, comprehensive investigation and analysis, utilisation of best available tools, environmental and sustainability safeguard, a high priority of public safety, and sound judgement in project management through ethical practices. In Malaysia, there are various sectors of our engineers serving the nation from consultation, research & development, construction, building services, maintenance, manufacturing, plantation, aviation, maritime, sales, and oil & gas industry to the higher educational institutions like universities and colleges as a lecturer or a teaching engineer.

For our beloved country to become a developed nation, the engineer to population ratio must be 1:100. For Malaysia, with a population of 32 million, the number of engineers should be 300,000. Surprisingly, based on the Education Ministry's statistics from 1997 to 2020, the average number of engineers produced per year by local institutions of higher learning, excluding graduates from foreign universities is about 16,000. The cumulative total of all engineers produced from 1997 to 2020 is estimated to be about 400,000. The number of engineers may be currently surplus for Malaysia.

Unfortunately, the reality is that only 35% of graduate engineers registered with the Board of Engineers Malaysia (BEM). BEM which is owned by the Malaysia government to administer the registration of PE. Although according to Malaysia' law through the Registration of Engineers Act 1967 (Revised 2015), all practising engineers must be registered with the BEM as GE to work as an engineer profession legally. According to the statistic published by BEM as February 2020 in Figure 1, only 10% out of 142,000 registered Graduate Engineer (GE) successfully obtained the certification as Professional Engineer who is only less than 4% out of engineers in Malaysia.

There are at least five most common engineering fields that run the country today which are; Mechanical, Chemical, Electrical, Electronic, Civil, and other engineering disciplines. As shown by Figure 2, civil engineering shows the highest number of registered Graduate Engineer followed by mechanical, electrical, electronic, and chemical engineering. There is more than 50% of the total registered Graduate Engineer has been upgraded into Professional Engineer for at least two engineering disciplines which are Civil and electrical engineering. For Mechanical engineering, the number of Graduate Engineer who converted into Professional Engineer is slightly less than, which is about 40%. The least amount of converted Graduate Engineer into Professional Engineer status is demonstrated by two engineering disciplines; chemical and electronic engineering.

Several reasons have been identified to be the cause of this mismatch;

1. Some engineers thought that Professional Engineer status only required for engineers who work

with design and consulting firm.

2. The jobs are not required engineers to be a registered Graduate Engineer.
3. The job never deals with document submissions to the authorities which require registered Graduate Engineer status.
4. Some local engineers choose to work abroad.
5. Some leave the engineering profession.
6. Mismatch expectations between engineering graduate and employers resulted in unemployment.

While the number of engineering graduate has been very encouraging in terms of quantity, Malaysia is still facing a shortage of engineers in terms of employability, and retention of talents, within the engineering sector and companies. Since Professional Engineers are crucial in bringing Malaysia to achieve developed nations status, all engineering graduate should be a registered Graduate Engineer before obtaining Professional Engineer qualification.

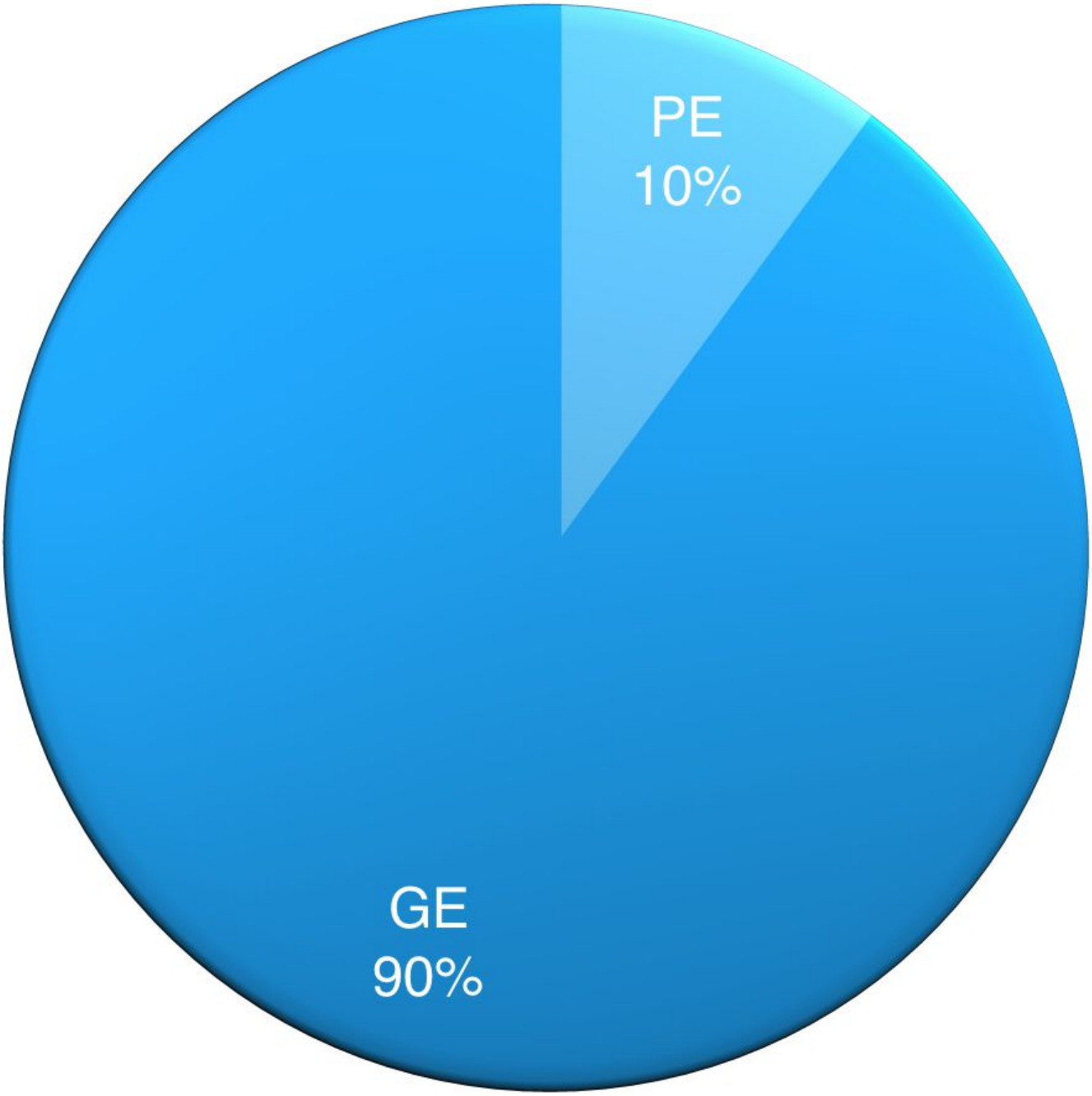


Figure 1: Statistic data for GE and PE in Malaysia as February 2020

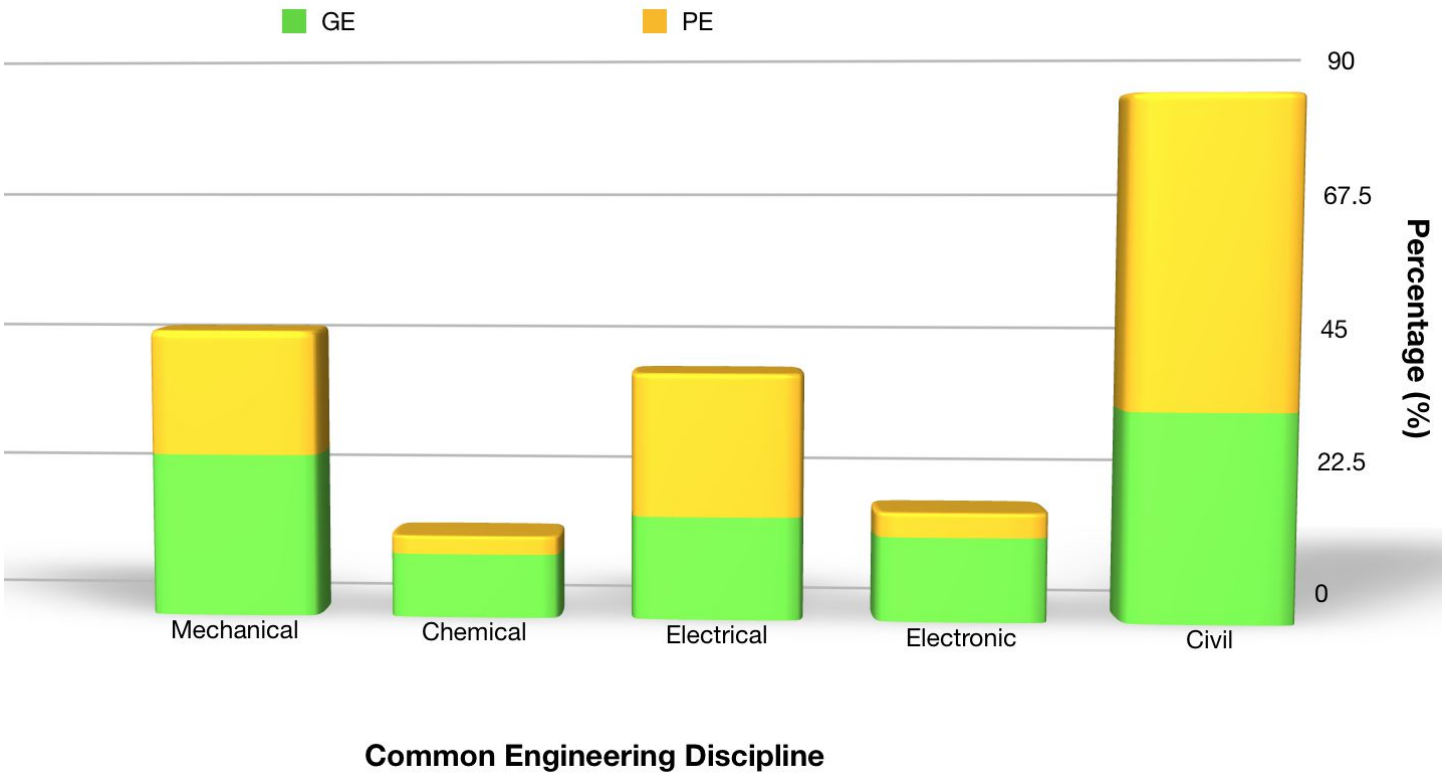


Figure 2: Percentage of GE and PE according to engineering discipline in Malaysia as February 2020

In order to encourage more engineers to obtain the Professional Engineer status, BEM has facilitated the process by offering three alternatives routes;

1. Route 1 – Through Professional Assessment Examination (PAE).
2. Route 2 – Through Professional Interview (PI).
3. Route 3 – Through Professional Qualification Equivalent (PQE)

The Professional Assessment Examination (PAE) and the Professional Qualification Equivalent (PQE) are the evaluation conducted by the Board of Engineers Malaysia (BEM). Whereas, the Professional Interview (PI) is managed by the Institution of Engineers Malaysia (IEM). All of these routes having the same purpose is to ensure the PE candidates meet all competencies required for a Professional Engineer.



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