



CAFEO 33 2015

PENANG MALAYSIA

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Conference of ASEAN Federation of Engineering Organizations



STRENGTH IN DIVERSITY OF

ASEAN WOMEN ENGINEERS

The newly formed Women Engineers of ASEAN Federation of Engineering Organisations (WEAFEO) reinforces support for both professionals and the younger generation of women engineers to scale to greater heights.

Women engineers in ASEAN have come a long way. Today, they are well established in the various fields of engineering and some have become role models who inspire the younger generation.

The ASEAN Federation of Engineering Organisations (AFEO) is an ideal platform for continued contact and interaction for all women engineers. To further strengthen the support, the Women Engineers of ASEAN

Federation of Engineering Organisations (WEAFEO) was formed in 2013. Among other initiatives, it encourages women engineers to remain in practice, promotes greater contribution from women engineers, supports them in their careers, encourages their achievements as engineers and leaders as well as encourages the study and application of engineering among female students.

At the recent Conference of ASEAN Federation of Engineering Organizations (CAFEO 33) in Penang, JURUTERA interviewed several ASEAN women engineers from diverse disciplines on issues related to gender inequality at the workplace, their future in engineering, what makes good women engineers, achieving work-life balance and the challenges they face in their career growth.

On the most significant difficulty as a female science/engineering professional in her country, **Er. Emily Tan** from Singapore said it is important "to get over our own mental barrier that women are different from men". She noted that both genders have their own strengths and weaknesses, so they should complement each other in all fields instead.

For her, the main issues are work-life balance and workplace culture. She said women engineers face a lack of networking, lack of career support, limits in technical roles, lack of access to senior roles and lack of job opportunities.

Asked if women in leadership and administrative positions appear to be judged more harshly than men who hold same positions, she said: "Perhaps subconsciously, women, especially good looking ones, are judged differently from men in the same position. Often, men are afraid to promote women in case it is perceived that they are 'improperly associated' with the women."

Ir. Assoc. Prof. Hayati Abdullah of Malaysia felt that women are judged more harshly while **Ir. Assoc. Prof. Dr Leong Wai Yie** of Malaysia did not think so.

Engr. Lydia G. Tansinsin of the Philippines said: "Sometimes. But once male bosses and co-employees observe that a woman engineer is qualified and performs well, they will respect her and cooperate to perform their respective duties. But in some cases, cruel male colleagues may continue to test a woman's patience to determine if she will be distracted when making decisions. They may even attempt to show that a female leader or administrator is not fit for the position."

Engr. Juana Torrano-Tapel of the Philippines said: "Women are generally soft-spoken and compassionate but those in top positions can become very decisive and persuasively strong; this is a deviation from their normal behaviour. Furthermore, most women leaders are honest and incorruptible. So, in the eyes of other people, women may seem harsher than men of the same hierarchical level."

Engr. Si Than of Myanmar said either gender can hold leadership and administrative positions. What matters is that he/she is the right person who can be the most effective in the position.

As for the observation that women are generally less interested in technology but more interested in socially oriented areas, Er. Emily Tan thinks this is the generally perception, so even when men are interested in

socially oriented areas, they dare not express it as it is not the accepted social norm.

Ir. Hayati did not feel that women are less interested in technology while Engr. Torrano-Tapel said: "The overall discernment is that women are more interested in socially oriented areas or concerns. But women engineers and scientists are differently honed in that they have developed an interest in technology-based concerns. This may be due to influence from their environments. For example, if their parents and/or other family members are inclined towards technology and engineering, they will be more likely to develop an interest in the STEM (Science, Technology, Engineering and Mathematics). In addition, women engineers are extraordinary women and comparable to men."

Engr. Tansinsin felt that women are generally more interested in the social sciences and medical fields which are the "soft sciences" but in this modern age, "these areas have to contend with continuing developments in engineering technologies which facilitate their tasks at their workplaces. So they cannot afford to ignore the technologies produced by engineers."

Engr. Si Than said women are interested in technology as well as social oriented areas.

When asked for reasons why she may leave her engineering career, Er. Tan said it will be because "someone buys out my company" but definitely not because of limited career prospect, long working hours, unfairness/biased evaluations, a sense of isolation in a male-dominated field or lack of women mentors.

BETTER BUT CHALLENGING FUTURE

On whether she expects things will get better for women engineers, Er. Tan was optimistic that things will improve with greater awareness and promotions worldwide. She said: "Some day in the future, there may even be more women engineers than men as the university intake for male and female engineers is already about 50:50."

Ir. Hayati believed that things will definitely get better for women engineers as women in the professional fields are getting more recognised across the board and globally. She felt that the things that make a good woman engineer are the same things that make a good ordinary engineer. "The challenge is to be an extraordinary engineer. Whenever I'm asked this question, Lionel Richie's song, Three Times A Lady, comes to mind. To make an impact in your profession and in your community, you need to be three times better than your ordinary counterpart," she said.

Engr. Torrano-Tapel expected the number of women engineers worldwide to increase as more countries are recognising female contribution in all aspects of development. She said: "I'm confident that things will get better for women engineers as our numbers grow

because when there are more women engineers, strength will be our alliance."

Ir. Leong said women are very keen to take up challenging work to benchmark themselves in men-dominated fields. Also, there are new engineering disciplines that require precise and critical thinking which best suits women. These include software engineering, multimedia engineering and nanotechnology.

Although Engr. Tansin could see a better future for women engineers, she said it would also become more challenging as men now realise that there are areas in engineering which are better performed by women. "Women engineers have a patience cannot be equalled by their male counterparts, and they are also challenged to prove themselves. Examples are biomedical engineering and electronics engineering where one has to be creative and innovative to further improve the communication system."

Dr Carmel C. Gacho said renewed attention will be given to women engineers to become role models. With their technical backgrounds and capabilities, they are more likely to participate in and contribute actively to society, influencing the priority agenda and policymaking in science and technology, particularly research and development that will improve gender parity. Thus, more opportunities await women engineers to empower more women in the world. As role models, the task becomes more challenging as women engineers need to be agents of change to intensify women's involvement in STEM and to address gender issues at the workplace, such as flexible working time, programmes to promote work-life balance recruitment, retention, advancement and leadership.

Likewise, Engr. Si Than expected women engineers to play a more important role in the future.

On what makes a good woman engineer and the kind of challenges she faces, Er. Tan said that "just like all engineers, a good woman engineer should be able to think logically".

Engr. Torrano-Tapel said if a woman is positive, with few insecurities, and has a mindset to strive for exemplary performance, she won't settle for the mediocre or use her "charm" to make things happen. She is efficient in using resources including time and effective in multitasking, meaning she will be able to handle a few jobs at one time. She said among the challenges women engineers face are balancing career and family life (especially when she has young children and a demanding spouse), managing herself during pregnancy, lack of women mentors at the workplace and that feeling of isolation when she is the only female in the work area.

Ir. Leong said successful women engineers are those who have excelled not only in their professional lives but also as leaders and role models. "A successful woman engineer should be able to balance her career and family life. We have to cope with challenges such as taking care of the family, which is not easy. Extra care and concern are needed to raise children who can contribute back to society. Maternity leave is another concern which may discourage women engineers from proceeding further. Women need time to recover before they go back to work. Without the support of family members, they will face a lot of difficulties," she added.

Group photo of WE delegates visiting Jambatan Kedua Sdn. Bhd. (JKSB)



Engr. Tansinsin said a woman engineer must show a serious attitude at work and perform within the allotted time frame. She must be patient when doing professional work that requires meticulous attention. She should also be honest, trustworthy and ethical at work. Women engineers like challenges, especially when those that test their mental capabilities. They will also have to undergo lifelong learning to keep themselves updated on the latest technologies in their field.

Women tend to be more emphatic, diplomatic and flexible, traits that make a woman engineer a good team member or leader. It's also the secret of successful collaborations in an organisation, said Dr Gacho, who noted that one of the challenges women engineers face, is being able to strike a balance between career and family life.

"To become successful, we need family support, strong technical knowledge, effective working experience and active participation in social activities," said Engr. Si Than.

On whether the government should set a target for 30% of decision-making posts to be held by women and whether such a target is achievable in the engineering industry, Er. Tan said: "We should not try to meet the target just for the sake of meeting the target. But with that as a target, there will be a conscious effort to give women more opportunities."

Ir. Hayati said it is good to have targets. "For the engineering industry, we need to have the 2N ('numbers' and 'network') first, which are still a long way to go," she said.

Engr. Torrano-Tapel said: "I feel that putting a target cap on posts to be held by women may not be fair to men. It is better to have an equal playing field for both. Postings should be based on merit. Let's encourage women engineers to polish our skills so that we are comparably competitive with our male counterparts. There are exemplary women engineers who have already excelled in their field. We can follow in their footsteps."

Ir. Leong felt that the target "is very encouraging and will enhance achievement among women". "Given the opportunities, this target is achievable in the engineering industry," she added.

Engr. Tansinsin said: "Initially, it may appear to be a good idea to secure leadership posts for women engineers. But competitiveness may be lost, so let the best excel and allow market forces to prevail in the job market. The engineering industry is not keen on the idea of reserving 30% leadership posts for women; there is no question that the industry forces can decide better what is needed to operate efficiently and effectively."

Dr Gacho noted: "Yes, the government should set a target of at least 30% of decision-making posts to be held by women as women play a central role

in a number of sectors in society. Because of this key role, it is critical that our interests, concerns and issues are incorporated into any effort, particularly decision- or policy-making which should be reflective of an inclusive growth agenda of the government. Yes, this is achievable in the engineering industry or in any sector."

For Engr. Si Than, the exact target is not important but the ability to make decisions is. She feels the target is not achievable at present.

JUGGLING WORK-LIFE BALANCE

Asked whether she thought employers are hesitant to promote women to higher positions for fear they would resign in the future to become stay-at-home-mothers or become more preoccupied with their children rather than work, Er. Tan said women of the right calibre should be able to juggle both career and family well.

Ir. Hayati believed this view will not be an issue in the future with advancement in technology, especially in ICT.

"It's a matter of priority. When my children were small, my first priority was their welfare. Now that they're grown up, I can focus on my career and need less time to supervise them. A text message every now and then to check on them is sufficient," said Engr. Torrano-Tapel.

Ir. Leong said: "Today, women are well educated and there are more and more women in the workplace. Promotion should be based on performance. Being worried unnecessarily will only slow down the development of a company. Outstanding women engineers can adjust their work-family life with ease and move forward. There are many talented women engineers and if a company cannot provide alternative work schedules, it will lose out. If you can't make accommodations for that, you won't be able to use such talent."

Engr. Tansinsin noted: "Employers should not have this kind of attitude just because women engineers may get married and have children. In fact, women generally perform better as they want to prove that family life is not a deterrent to their careers and that they can bring better benefits for their families as well. After all, men engineers may also leave the company, even after they are promoted, as there may be better benefits or offers from other companies."

Dr Gacho said: "This is no longer true of any organisation, whether private or government, due to enacted laws aimed at achieving gender equality at the workplace. Today, more employers are inclined to retain talented women and to advance them to higher positions because of what they can contribute to an organisation; this is what matters most. If a woman is seen to be an asset, an employer will usually provide incentives and family-friendly human resource support facilities such as flexi-time and exclusive training as well as onsite child daycare and programmes.

"If this is not the case at the workplace, the scenario can only be changed if women have equally representation in the ranks of executive officers and leaders. It is only when there are sufficient numbers of women on the corporate ladder that the much-needed support will be realised since women leaders or executives with family and children will be familiar with having to balance career and family and consequently, are more flexible and sympathetic towards female staff."

But Engr. Si Than felt that it was true that employers were hesitant to advance women to higher positions for fear they would resign when they become mothers.

The women engineers were also asked about the view that as much as a woman may want to get to greater heights before pursuing other interests, there's always the desire to get married and have children. This may then push a woman to slow down in her career to meet the increasing demands of family.

Ir. Hayati said the nurturing attribute is what makes women so special and it is also the driving force that makes women stronger. With a good support system, family commitments should not be a major obstacle to succeed at work.

Engr. Torrano-Tapel felt that the bottom line of such a decision is "where does my heart belong?", "Where do I feel true happiness?", "Is it my career or my sharing with my family?"

Ir. Leong said: "We really need to plan for balance in our lives because it doesn't just happen. We have to make time for things that are important. We have to carve out time from our professional life but that's not to say things can't be flexible."

According to Engr. Tansinsin, "there is no question that women engineers will give priority to family but, as we have said, they will work better as a professional to bring home the needed benefits".

She added: "A supportive spouse will encourage her to give her best. But if she still cannot balance her career and family, she will resign. This is rare though, as most women engineers can successfully balance work and family. Women are generally used to multitasking."

Dr Gacho is of the opinion that one has to set short- and long-term goals as well as find ways to achieve success in career and family life while Engr. Si Than said the view regarding the employers "is correct".

On promoting gender equality at the workplace, Er. Tan said it can be done by empowering women in leadership positions while organisations can fast-track gender equality and demonstrate its practical benefits. But, she added, "We should empower a person for leadership qualities based on meritocracy, not gender."

Ir. Hayati noted that we should not focus on gender at the workplace. She said: "Instead, let us promote harmony and tolerance as well as focus on quality, performance and deliverables. If a woman excels in

these areas, a leadership position will be a natural progression."

Engr. Torrano-Tapel said gender equality starts from birth. Equal treatment and opportunities should be given whether a child is male or female and parents should encourage their daughters to join the labour force as they do their sons. The government should promote the same political rights and participation of women.

"Transform your mind! Management must be open minded and willing to accept women in leadership. We believe in the power of women and their ability to make a difference. To make an impact and make it happen is genuinely extraordinary. We need to pull ourselves up and remind ourselves how outstanding we really are," said Ir. Leong.

Engr. Tansinsin added: "First, gender equality can be promoted if there is a good recruitment system. Competition among the applicants is the best strategy for promoting gender equality. Second, projects can be developed or tailored for women engineers. In the Philippines, there's a mandate to reserve 5%-10% of government budget for gender equality. The 1986 Philippine Constitution guarantees equality in the employment of women and men at workplaces."

Dr Gacho suggested offering training programmes or a re-orientation period for female employees after parental leave of more than three months so as to give them the necessary support for technical updating, professional development and skills acquisition in order to boost their self-confidence and make them feel welcomed.

Engr. Si Than said Myanmar citizens have equal rights at all levels according to the country's history, culture and laws. Gender equality can be promoted by producing educated women in all sectors.

The women engineers were also asked about the main challenges that impede professional growth and prevent women's reach and stay in decision-making roles. One scenario is societal structure which is responsible for the idea that men are inherently breadwinners and leaders while women are the caretaker. This traditional view that career women are unfit mothers who may not be able to balance work and family life, still exists today and remains a concern even in modern societies.

"Fortunately in Singapore, it's difficult to pinpoint any challenge that impedes women's professional growth. The challenge will be our own mental obstacle, the perception that we are lesser than others," said Er. Tan.

Ir. Hayati said: "This view may be prevalent in some parts of the world or society but I am inclined to believe it does not exist in a modern and advanced society. Mindsets are changing and, as I had mentioned earlier, the numbers and networking are what matters."

Engr. Torrano-Tapel said: "We should create the awareness that working women are an asset as mothers because they also provide financial support for the family apart from the love and care that ordinary housewives and mothers can give."

Ir. Leong noted: "The greatest challenge is being open to where life can take you and to embrace the opportunities that come along. Then you have to be able to say 'no' to some things in order not to burn out. Once you know some key features of your mind, change these for the better. This way, it will be pretty effortless to be your outstanding self. How we are wired and what we can do to change that can be very simple and powerful. We can make choices immediately. We can make possible life changes in an instant."

"We are born with more than enough and we have everything we need to live the life we have always wanted. To be a successful woman engineer, we must stop that voice in our head that nags, worries, obsesses and compares. Instead, turn it into strength, confidence and purpose."

Engr. Tansinsin said there is no question that many women engineers need to balance their professional life and family life. Times have changed. Women and men are now partners in a marriage, partners who support the family instead of competing with each other. The age-old idea that man is the bread-winner while the woman is the family caretaker, is no longer true today. The idea of a house-husband is no longer alien, especially if the wife earns a bigger salary and the children are growing up and because domestic help is getting scarce or costly. This is prevalent in households in the Philippines and elsewhere in the world.

Dr Gacho said there's a lack of role models to impart greater awareness of and to share practical experiences to overcome issues on gender inequality at the workplace. However, the modern working environment does consider the special needs of working mothers. More companies are now instituting initiatives to address the needs of employees in order for them to balance career and family.

MORE THAN JUST HARD WORK

Meanwhile, Er. Tan agrees with the observation that there are some factors and personal attributes of women that lead to their professional growth. Hard work, a supportive family and a supportive spouse or supervisor are reasons for women doing well in their careers and going far. Mentorship, whether at home or

at the workplace, is key to developing confidence in women as this assures them of their capabilities and creates a social and professional support network. But Er. Tan said "this applies to everyone, regardless of gender".

For Ir. Hayati, hard work, a supportive family, supportive bosses/supervisors and mentors are key factors to performing well in a career. She agrees that these apply to both men and women. Tradition, culture and faith have an influence on expectations at the workplace, especially for women. Managing these expectations and having good interpersonal skills are also important to success.

Ir. Leong said: "When you are passionate about your work, it can be very challenging to also have a personal life. But we need our personal lives, to get home by a decent time and to not always be talking about work. For mentorship, we all end up drawing on everybody that come into our lives. We tend to take the best things we see in the people we admire and then focus on these. Family members and colleagues as well as welfare and professional organisations will always be good professional role models for us. Even if we are on different career paths and industries, it's good to be able to communicate with each other for advice."

Engr. Tansinsin agrees that hard work, perseverance and the support of spouses and bosses are important factors that boost the professional growth of women engineers. Without spousal support, women engineers generally fail professionally, even if they work hard.

Dr Gacho said: "Yes, I believe that oftentimes, women face difficulties managing their work-life balance, particularly if they do not receive ample support. The unconditional support and understanding of family, friends and colleagues will allow a woman to strive hard and work above her normal capacity."



Engr. Si Than said she concurs with the observations. However, Er. Tan disagrees with the view that for the few who do make it to higher positions in a corporate environment, the burden of domestic responsibilities eventually catches up and makes it difficult for them to remain in that role. She said it's all about "quality time that's needed with the family, not quantity".

Ir. Leong said: "Get to know people. Show them our passion. Get involved. Be on social media. It's a lot of hard work and persistence. Some people get their rewards sooner than others. There are no guarantees. I would start by adopting a positive attitude and being confident in my own abilities. Whatever we choose to do, we should do it to our best abilities. It will make us proud of what we have accomplished and people will notice that."

"My advice is to not be afraid to take risks outside our comfort zones. That's how we will find out what

makes us happy. Take advantage of every opportunity to meet new people and build new relationships because these will serve us in our careers, whether it's moving to a new job or bringing in new clients."

Engr. Tansinsin said there are ways to soften the impact on family life. With household help becoming scarce and costly today, family planning is a must for married women engineers in order that family life will not interfere too much with their professional life.

Engr. Si Than felt that time management at both the workplace and family home, is important for women engineers to succeed.

Indeed, there may be great challenges to face and hurdles to clear but it is clear that generally, women engineers are pumped up with optimism about the future of their profession as more and more countries start to recognise women's contributions in all aspects of development. ■



Er. Emily Tan



**Ir. Assoc.
Prof Hayati
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**Engr. Juana
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**Ir. Assoc.
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