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**WORK-LIFE BALANCE: ANALYSIS AND PERSPECTIVES OF FEMALE
ENGINEERS**

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Abstract

Work-life balance is the process of combining several roles of a person, in particular work and family, which is defined as positive interaction without prejudice to any responsibilities. This article provides a literature review and research analysis on the work-life balance of women in engineering and improvement prospects that directly impact job satisfaction and female employee commitment. In particular, an analysis of selected work-life balance studies found that most female engineers have a low work-family balance, in addition to the pressures present about stereotypes about a “male” profession and a small share of support from colleagues based on gender. It is also important to note a number of statements that reversely demonstrate the impact of work-life balance on the performance of work functions. The results of the review highlighted the importance of further investigating this issue and implementing a friendly work-life balance policy at the organizational level.

Keywords: Work-life balance, women, engineer, job satisfaction, job commitment.

WORK-LIFE BALANCE: ANALYSIS AND PERSPECTIVES OF FEMALE ENGINEERS

A balance between work and personal life combines several roles of a person, particularly work and family, which is defined as positive interaction without prejudice to role responsibilities. Maintaining a healthy work-life balance among employees is directly related to the productivity of medium and large enterprises, which is an essential part of developing the economy of an entire country.

As a developing country, Kazakhstan, where women make up 51.5% of the total population of Kazakhstan (Bureau of National Statistics, 2021), needs to pay attention to harnessing and maintaining female potential by supporting friendly policies towards work-life balance. Job engagement, satisfaction, and commitment to the profession of women engineers, in an area where there is significant superiority of male engineers (Hamzah, 2020) all come from the extent to which women manage to combine roles simultaneously and from the organizations themselves.

This paper presents an analysis of the study of the work-life balance of women in engineering and the prospects for improvement that directly affect women's job satisfaction and commitment to their profession. In particular, an analysis of selected work-life balance studies found that most female engineers have a low work-family balance, in addition to the pressure of stereotypes about a "male" profession and little support from colleagues based on gender. It is also important to note several statements that inversely demonstrate the impact of work-life balance on worker performance.

Research Objectives:

- To determine the level of work-life balance among female engineers.

- To explore the relationship between job satisfaction and work-life balance.
- To explore the relationship between job commitment and work-life balance
- To identify solutions that exist to maintain the balance between work and life for female engineers.

Research Questions:

- What is the level of work-life balance among women engineers?
- What is the impact of work-life balance on job satisfaction and commitment to the profession of female engineers?
- What do companies need to do to maintain the work-life balance of their employees, namely women engineers?

Literature Review

Many studies on work-life balance are conducted in Western countries, where surveys and interviews demonstrate a high level of conflict between work roles and mother and wife roles (Williams, 2017, Meeussen and Van_laar, 2018). In Kazakhstan, this issue is also relevant. However, there is also a significant lack of information and research that can be a start for many organizations to think and take measures to solve a common problem.

According to Kovyazina (2019), every working woman devotes more than 2 hours to housework, while a working man devotes about 30 minutes. As a result, the difference is 12%. The developing economy and the relevance of gender equality define a new path for Kazakhstani women. They are perceived as demanded employees whose productivity is no less than that of a male employee. As a result, stress can appear for women, especially women working in an engineering environment where there is a high prevalence of men. Stress and anxiety will affect both job satisfaction and commitment to work.

Promoting the idea and promoting work-life balance among working women is one of the measures presented in the Concept of Family and Gender Policy until 2030 in Kazakhstan, one of the stages of implementing the Gender Equality Strategy (Asian Development Bank, 2018). This study highlights the importance of further exploring this issue and implementing WLB friendly policies at the organizational level.

Work-Life Balance

Many research and articles have devoted attention to expanding the topic of the use, impact, advantages, and disadvantages of WLB; however, it is still difficult to accurately define this term. Kalliath and Brough (2008) concluded that WLB is an individual perception of work and any activity unrelated to work, which is defined as a positive interaction according to the current preferences and goals in a person's life.

The study of work-family balance began as early as 1970, with the most substantial interest in the subject emerging in the 1990s (Williams cited in Ramarajan et al., 2017). Since then, there has been a trend towards an increase in the number of working women, but at the same time, women continue to fulfill their responsibilities related to motherhood and household chores. As a result, as much as there is research on this conflict, women continue to experience stress, reflected in their performance as employees, job satisfaction, and commitment to their careers.

The reasons why women employees are more likely to experience conflict between work and family life may be how often and how much women have to work overtime, inflexible working hours, negative corporate culture, or lack of understanding among senior management (Rangarajan, 2014). As a result, there is a severe problem of female staff retention.

Today there is a widespread tendency to be an ideal mother who reads many books about the upbringing and development of children, participates in all children's activities. The quest to

meet the ideal mother's standards collides with employers' demands for ideal employees, which inevitably leads to conflict (Meeussen and Van_laar, 2018). However, scientists have also come to the positive effect of wanting to be an ideal mother. Female employees who have high ambitions on the labor front have the same high ambitions on the maternal. Perhaps the individual perception and attitude towards her duties, both work and family, make a woman strive to succeed in all roles. The consulting company Kontakt InterSearch Russia conducted a survey among 987 senior executives. The proportion of women who participated was 45%, of which 59% said they made a decision to sacrifice their family in favor of a career, and 51% were women who felt guilty about spending a little time with their family (Forbes Women, 2021). There is also another research, where 28% of working parents in the United States cannot find time for their children because of work, 40% say they do not even have time for their husbands / wives, and 53% say, that they are unable to devote time to their children because of work because of the workload (quoted from Andreassi and Thompson: The Institute for Family and Work, 2008). It should be concluded that there are such problems in other countries as well.

Women in engineering

The conflict between specialists and wife or mother has always been difficult for working women, but the problem is becoming more acute for women working in engineering. It is no secret that there are many stereotypes that engineering is considered masculine, where strength and an analytical mind are needed. In engineering, this issue is even more relevant, as women face many stereotypes and obstacles. Using the results of Fouad and Singh (2011), only less than 50% of women are reluctant to pursue careers in engineering after graduating in engineering. This trend is evidenced by the data of the Committee on Statistics of the Ministry of National Economy of the

Republic of Kazakhstan (2017), where women employed in industry and construction account for 12.2%, and men - 28.5%.

The significant shortage of women in the energy sector in Kazakhstan is evident as only 25% of the total labor force is women, although there is also a positive upward trend (Calderone et al., 2019). If we talk about the electricity, gas, and steam sectors in Kazakhstan, women make up 30% of oil and gas production - 20%. A report for the European Bank for Reconstruction and Development and the KAZENERGY Association (2019) notes that only less than 20% of women are in technical and production positions. The fact that women consistently make up less than 20% of the workforce in the energy sector reflects the underrepresentation of women in technical positions in this area and the underutilization of the potential of women engineers.

Another factor considered negative is the 11% of companies with flexible scheduling and family support programs. It turns out that only 4 out of 36 companies surveyed reported that they meet their employees halfway in terms of changing the work schedule or providing vacation.

Influence of Work-Life Balance on Job Satisfaction

Job satisfaction is a positive outcome for any employee when there is harmonious equality between his/her expectations and what he/she gets from his work (Rama Devi and Nagini, 2014). For example, this applies to salary expectations, relationships with management and colleagues, conditions and workplace, corporate culture, etc. Job satisfaction is demonstrated by the attitude of employees towards their job and responsibilities, "this is the degree to which people like (satisfaction) or dislike (dissatisfaction) with their work" (Spector, 1997).

The decisive influence of work-life balance on job satisfaction has been proven by many studies (Rama Devi and Nagini, 2014, Kanwar et al., 2009). If a woman can maintain a healthy balance between work and family or personal life, this only increases her level of job satisfaction.

In most cases, women blame the ongoing conflict between work and family (Williams, 2017); however, the companies themselves play an essential role.

Any female employee will have a high level of job satisfaction if she feels and sees support from the manager who understands the importance of a healthy work-family balance (Sumaiti, 2010). It should also be noted that all employees might have different needs in terms of role functions; therefore, there are cases where the application of policy instruments regarding the balance between work and personal life will not increase job satisfaction.

As Clark (1997) suggests, wages are not the most crucial factor in job choice for women. When looking for a job, women are most often interested in working conditions, how flexible the policy is regarding the work schedule, and whether there are programs to support working mothers. So according to Bender et al. (2005), the longer a woman has to stay in the office after work, the lower her job satisfaction is

Influence of Work-Life Balance on Job Commitment

Work commitment is defined as loyalty and interest in their work, which occurs due to increased satisfaction with the results of their functional duties. More often than not, professional commitment is a mix of how involved an employee is in their work and how well they feel in their profession (Hamzah cited in Meyer, Allen, & A. Smith, 2020).

At the beginning of the 2016-2017 academic year, the percentage of male students in the field of Engineering Science and Technology is 65.9%, while women are half (34.1%) (Committee on Statistics, 2017). Even with such a percentage of young women striving to acquire knowledge in engineering, the proportion of workers in the future is very small.

According to the publication of the Asian Development Bank (2018), the share of Kazakhstani women working in the construction sector is only 3.3%, while the share of women

employed in the mining industry, as well as in transport and storage, is equal to less than one fifth of all workers. It turns out that while working, women employees leave their profession, and one of the reasons may be the emerging conflict of roles. The issue of work-life balance is important if we want to use the high potential and intelligence of the female population as specialists in the technical industry. Ultimately, there is a positive relationship between job satisfaction and job commitment, where the first criterion was previously proven to be influenced by work-life balance policies.

Conclusion

Companies that care for their employees and pay equal attention to the working conditions of women engineers should consider the importance and put into practice a favorable work-life balance. In turn, this will lead to high levels of job satisfaction and commitment to the work of an irreplaceable workforce.

A report provided by Ergon Associates (2019) highlights the importance of introducing work-life balance policies, particularly in the energy sector, and provides real-world examples from leading companies. For example, the Brazilian hydroelectric power company, Itaipu, has introduced flexible working hours for employees to help mothers balance work and childcare. Also, the SAP Company, working in mining, uses a program where some employees can work both in the office / on-site and remotely, taking a whole part in meetings and important projects.

In a study of a group of British female engineers, Fernando et al. (2018) propose four types of support assistance to keep female engineers on the job. One of the most effective is the presence of a woman in the company who demonstrates a positive side to the balance between work and family. Seeing an example of real success in front of them, other female engineers can

subsequently change their attitudes and cling to hope and belief that it is possible to avoid role conflict and build a brilliant career in a field dominated more by men.

Research by Hofstede (1984) suggests two types of cultures - individualistic (Australia, Canada, the USA, the UK) and collectivist (Korea, Thailand, Japan, Hong Kong). Consequently, Kazakhstan belongs to the second type, where women define work to improve family well-being. Using this division, Andreassi et al. (2014) conducted a study in 48 countries (Asia, Europe, North America, and Latin America). They confirmed their hypothesis that a conflict between work and family in collectivist cultures is lower than in individualist cultures. In this regard, scientists propose to use as an example for imitation the perception of collectivist cultures, where work is a voluntary investment in the family's well-being, which reduces stress against the background of conflicts between work and family. As a result, the historical implications and oriental upbringing can likely positively reduce the WLB for Kazakhstani women.

Of course, some organizations are trying to help their employees overcome the difficulties associated with the additional workload and offer flexible working hours or work remotely. In the United States, companies provided about 55% of their employees with the ability to work remotely, and 9% of companies had dedicated childcare centers near their offices for their employees' children (Andreassi and Thompson cited in Galinsky and Bond, 2008). However, very few workers use this service because there is an unspoken culture that it can hurt a career or prove that the worker is not taking his job seriously. For example, if an employee took frequent leave for family reasons, they ended up being the least likely to be included in the list of employees for a promotion or salary (Judiesch and Lyness, 1999).

Millennials, born in the 1980s and 2000s, are considered "agents of transformational change," employees who value balanced lifestyles and dare to assert their rights in the workplace

(Williams, 2017). Perhaps they will become the starting point for the process of changing the attitude of companies towards the issue of implementing a work-family balance policy.

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