



## INVESTIGATING WORKPLACE WELL-BEING AMONG FEMALE LINE STAFF IN ORIGINAL EQUIPMENT MANUFACTURERS (OEMS): A ZALTMAN METAPHOR ELICITATION TECHNIQUE (ZMET) STUDY

Liwen Chen

UWE Undergraduate Double Degree Program in Business Administration,  
Chung-Hua University, Taiwan, R.O.C.  
[lwchen@g.chu.edu.tw](mailto:lwchen@g.chu.edu.tw)

Tung-Liang Chen

Dept. of Industrial Management, Chung-Hua University, Taiwan, R.O.C.  
[tlchen@g.chu.edu.tw](mailto:tlchen@g.chu.edu.tw)

Hsu-Kuan Jonathan Liu

Dept. of Hospitality Management, I-Shou University, Taiwan, R.O.C.  
[jonathan@isu.edu.tw](mailto:jonathan@isu.edu.tw)

### Abstract

The purpose of this study is to investigate the well-being of female line staff in the workplace in Taiwan's electronics contract manufacturing sector, using the Zaltman Metaphor Elicitation Technique (ZMET) as the primary methodology. The intricate dynamics shaping individual perception and experience of well-being at work is explored using qualitative interviews with 16 participants and a metaphor analysis. The findings highlight the importance of personal fulfillment, career development, and a supportive work environment in fostering employees' well-being. Despite methodological limitations, including the interpretive nature of a metaphor analysis and a focused participant selection, the study's rigorous approach is aimed to enhance the validity of its insights. This research contributes a nuanced understanding of well-being in the workplace of a specialized industry, providing practical implications for organizational practice and avenues for future research in this field.

Keywords: workplace well-being, Zaltman Metaphor Elicitation Technique, female employees, electronics contract manufacturing.

## Introduction

The landscape of the modern workplace is undergoing a significant transformation, which is catalyzing a pivotal shift in assessing the factors that are fundamental to employees' well-being, which is a cornerstone of organizations' success and resilience (Knezevic et al., 2023; Ahmadi et al., 2023). This shift accentuates the intricate relationship between the characteristics of the work environment and the workforce's comprehensive health (Al-Jubari et al., 2022; Lu et al., 2023). Within this evolving context, the experience of female employees has garnered heightened attention, underscoring the urgency to address the specific challenges they face within professional arenas due to prevailing gender dynamics.

Despite a growing awareness of the significance of well-being in the workplace and the use of initiatives to promote it, such as introducing flexible working arrangements and cultivating a supportive organizational climate, the efficacy of these initiatives, especially in addressing gender-specific challenges, remains in a nascent stage of understanding. Meanwhile, women in the workforce continue to confront unique hurdles, which include the need to balance their professional aspirations with their

caregiving responsibility, while they navigate gender-based discrimination (Chawla & Sharma, 2019; Zhou et al., 2018). This complex interplay of challenges suggests that the existing well-being initiatives may not fully meet these extensive needs. Moreover, the significant trend of women leaving the workforce, a situation exacerbated by the recent pandemic, underscores the urgent need of a more nuanced and inclusive re-evaluation of well-being initiatives to accommodate the diverse spectrum of employees' requirements (Daley & Henke, 2022; Henke, 2022; Hsieh, Huang, Ma, & Wang, 2022; Kerr, Da Torre, Giguère, Lupien, & Juster, 2020).

The scholarly exploration of workplace well-being has drawn significant attention to the multi-dimensional nature of employees' health and its profound impact on the performance of an organization. Beyond physical health, well-being encompasses psychological, emotional, and social dimensions, necessitating a holistic approach to nurturing supportive work environments, which are instrumental in bolstering employees' engagement, satisfaction, and productivity. In view of shifting work dynamics and societal expectations, flexible working arrangements have emerged as being crucial components to enhance employees' well-being. There is

evidence of options such as telecommuting, flextime, and compressed workweeks making a significant contribution to reduced stress levels, improved work-life balance, and increased job satisfaction. Additionally, the implementation of these arrangements has been associated with employees' heightened organizational commitment and retention due to their perceived autonomy and control of their work schedule.

A supportive organizational culture is equally paramount in fostering employees' well-being. Cultures that emphasize diversity, equity, and inclusion play a critical role in creating a sense of belonging and psychological safety, thereby significantly contributing to overall well-being. Empirical researchers underscore the fact that organizations characterized by supportive and collaborative cultures report lower levels of employees' stress, absenteeism, and turnover, alongside enhanced engagement and performance metrics. However, the interplay between workplace well-being and organizational practices is further complicated by gender dynamics. Women face distinctive challenges in the workplace, such as gender discrimination, wage disparity, and a disproportionate share of caregiving responsibilities, which have an adverse impact on their well-being and career progression. Addressing these challenges requires the implementation of gender-sensitive initiatives to ensure that the unique needs of women

are adequately met (Keldenich, 2022; Ugwu et al., 2016).

The purpose of this study is to explore the well-being of female employees in the electronics contract manufacturing sector, with a specific emphasis on Original Equipment Manufacturers (OEMs) located in Taiwan. It is crucial to understand the well-being of women in this work environment, given Taiwan's important role in the global electronics manufacturing market and the unique challenges inherent in this industry (Borazon, Huang, & Liu, 2022). Therefore, the Zaltman Metaphor Elicitation Technique (ZMET) is utilized in this study to explore the well-being of women, particularly those who belong to the "sandwich generation," who juggle their professional responsibilities with their caregiving duties. Deep insights into the experience of female employees who are directly involved in production activities, such as machinery operation and product assembly, will be acquired by analyzing metaphorical representations of their well-being in the workplace. On the other hand, indirect labor includes personnel who provide support, such as maintenance, supervision, and quality control. The overarching objective is to assist organizations to develop inclusive strategies that promote the professional and personal development of employees, thereby fostering a resilient and inclusive work environ-

ment tailored to meet the diverse needs of the workforce.

Anghelcev, Chung, Sar, & Duff, 2015, 2015).

## Methods

## *Participants*

### *Research Design*

The Zaltman Metaphor Elicitation Technique (ZMET), which was developed by Harvard's Gerald Zaltman, is deployed as a key qualitative method in this research. ZMET is distinctive in its approach to revealing the underlying thoughts and emotions of individuals by analyzing the metaphors with which they resonate. This technique posits that metaphors serve as windows into the subconscious, uncovering hidden beliefs and feelings (Chatterjee & Bryla, 2023). The participants are required to choose images that mirror their perception or experience of a given topic. The metaphorical content of these images is dissected during structured interviews to offer an insight into the participant's inner world. This method proves to be invaluable for navigating complex subjects like workplace well-being, where direct inquiries may not suffice. Zaltman emphasizes that "deep metaphors" lie beneath surface metaphors as the core organizing principles of cognitive frameworks. As these deep metaphors are pivotal in shaping individuals' emotional responses, knowledge, and interpretations, they are crucial for understanding the underlying forces that drive their motivations and actions (Zaltman, Olson, & Forr, 2015;

Snowball and convenience sampling were used in this study to recruit female direct labor employees working in the Production and Materials Management departments of three electronic contract manufacturing firms located in Hsinchu, Taichung, and Nantou, Taiwan. These locations were strategically selected to reflect the varied industrial fabric of Taiwan with the aim of garnering insights across a wide spectrum. A cohort of 16 participants aged between 23 and 55 years was recruited. This group included eleven married and five single individuals, whose educational levels ranged from six university degree holders to ten with high school diplomas.

It was ascertained that approximately 90% of the critical insights that may be gathered from a larger pool could be efficiently extracted by conducting four to five in-depth interviews using the Zaltman Metaphor Elicitation Technique (ZMET) (Zaltman and Coulter, 1995). The research was structured to achieve thematic saturation, the juncture at which subsequent interviews did not yield additional themes. Upon reaching this saturation point, participant inclusion was ceased, enabling an effective and targeted data collection process. This strategic

approach ensured that the research objectives were achieved within the limits of the thematic saturation.

#### *Data Collection Procedure*

The participants were instructed to select 10-12 images that reflected their perspective and emotions in respect of climate change, ensuring the portrayal of their authentic insights. They were briefed on engaging in an extensive discussion about these images, which was anticipated to last up to two hours. Subsequently, each participant engaged in a 90-minute semi-structured interview centered on the self-selected images. These discussions adhered to a modified version of the 6-step ZMET protocol, enhanced by suggestions from Anghelcev et al. (2015), and comprised the following steps:

1. **Storytelling:** The participants shared images related to their views on workplace well-being, which initiated conversations in which the stories these images conveyed were explored.
2. **Missing Images:** At this stage, the participants were able to articulate the sentiments or views they were unable to visually represent, thereby expanding the range of the collected insights.
3. **Construct Elicitation:** Hidden constructs were unveiled by analyzing images with shared thematic elements. This process in-

involved comparing 2-3 images, which were chosen at random by the researcher, to enrich the understanding of the underlying meanings.

4. **Most Representative Picture:** The participants pinpointed the single image that most closely represented their conceptualization of workplace well-being for an in-depth analysis.

5. **Sensory Images:** The participants were prompted to describe their perception based on the use of a multisensory approach, which deepened the data pool by revealing subconscious thoughts and emotions.

6. **Summary Image:** In the concluding step, the participants constructed a digital collage of the principal themes identified to provide a visual summary of the fundamental concepts. The aim of this activity was to clarify the relative importance and interconnection of the selected images, providing a comprehensive visual depiction of the participants' perspective.

#### *Data Analysis*

A metaphor analysis was used to dissect the interview and imagery data, categorizing them into thematic groups, interpreting conceptual metaphors, and uncovering deep metaphors (Anghelcev et al., 2015). Thematic categories emerged from the recurring core themes that were identified in

the interviews. These were then organized into eight conceptual metaphors using an inductive approach, and it was subsequently deduced that these conceptual metaphors encapsulated three underlying deep metaphors that were fundamental to the participants' conceptualization. This analytical method produced a nuanced understanding of the beliefs and values that influenced the participants' perception.

#### *Ethical Framework*

This study was meticulously designed to uphold the required ethical standards throughout its execution. Paramount importance was placed on informed consent, the participants' anonymity, and the confidentiality of the collected data. Prior to their participation, all individuals were provided with a detailed explanation of the study's objectives and the methodologies to be used, and their rights as participants were clearly articulated. This briefing included an emphasis on the voluntary nature of their participation and the assurance that they could withdraw from the study at any point without any consequences. To safeguard the participants' anonymity, all identifying information was removed or altered in such a manner that individuals could not be directly or indirectly identified from the data presented. Moreover, the confidentiality of the data was rigorously maintained by storing it securely and restricting access to it to author-

ized members of the research team. These measures were implemented to reassure the participants that they could share their experience and perspectives in a safe and respectful environment to contribute to the integrity and reliability of the research findings.

#### *Limitations and Considerations*

It is acknowledged that this study has certain limitations, which stem from its deliberately narrow sample and the subjective interpretation of the metaphor analysis. This approach relies heavily on the analysis and interpretation of metaphors, which can introduce a degree of subjectivity into the findings. Moreover, although the focus on selecting participants from Taiwan's female direct labor force in the electronic contract manufacturing sector, was strategic, it limited the generalizability of the study's outcomes to wider populations or different contexts. Nonetheless, the methodological rigor inherent in the ZMET process and the careful selection of a representative sample within the defined scope designed to minimize bias enhanced the validity of the insights generated.

#### *Results*

The results of the metaphor analysis provide a nuanced view of well-being in the workplace as perceived by the female em-

employees in the procurement department, revealing a complex interplay of personal, professional, and cultural factors that shape their experience.

### *Thematic Categorization*

Twenty-six thematic categories were delineated in the initial phase, showcasing a diverse array of experiences and perspectives of the participants. These categories revealed the multifaceted nature of the factors that influence well-being in the workplace, ranging from personal growth and family dynamics to workplace culture and individuals' ambition. This range of categories underscores the complexity of understanding well-being in the workplace from the perspective of females in the procurement department, highlighting the need of a multifaceted approach to address these concerns.

### *Conceptual Metaphors*

Six overarching conceptual metaphors emerged from the broad thematic categorization. These metaphors served as a bridge between participants' individual experiences and more universal concepts. They transformed personal narratives into collective insights, providing a richer understanding of the perception of workplace well-being:

1. Journey of Growth: Emphasizes that personal and professional development is an ongoing process.
2. Garden of Support: Illustrates the nurturing environment of a supportive workplace.
3. Balancing Act: Depicts the constant effort to maintain an equilibrium between work and personal life.
4. Emotional Weather: Conveys the changing moods and climates of workplace relationships and culture.
5. Architectural Foundations: Symbolizes the structural aspects of workplace dynamics, including hierarchies and spatial organization.
6. Tapestry of Connections: Highlights the intricate patterns of interpersonal relationships and social support networks.

### *Deep Metaphors*

The deep metaphor analysis uncovered two primary themes that encapsulated the participants' core desires, aspirations, and psychological constructs regarding workplace well-being. These deep metaphors offered profound insights into the underpinning of their experience:

1. Self-fulfillment Needs:

- Family Dynamics: Emphasize the integral role played by family relationships in shaping the perception of well-being, which suggests that a supportive personal life is essential for professional satisfaction.

- Progress and Advancement: Highlights the importance of continuous professional and personal growth, which indicates a strong link between development opportunities and overall well-being.

## 2. Workplace Dynamics:

- Striving for Balance: Points to the pursuit of a harmonious balance between personal life and work responsibilities, which reflects a universal desire for flexible working arrangements.

- Emotional and Social Atmosphere: Underscores the significance of the emotional climate of the workplace and the quality of interpersonal relationships, which stresses the influence of a positive, respectful, and inclusive environment on employees' well-being.

It was revealed in the study that the well-being of female employees in Taiwan's electronics contract manufacturing sector is deeply influenced by family support, personal growth, a supportive work environment, work-life balance, and the emotional climate of the workplace. A sample of participant B's summary image (viz. Step six in ZMET) is shown in Figure 1. These findings illuminate the complex interplay between

the personal and professional sphere, which emphasizes the need for organizations to foster environments that not only support the career advancement of their employees, but also their personal well-being. The crucial role of supportive leadership, transparent communication, and professional development opportunities cannot be overstated, as these elements make a significant contribution to a sense of belonging and satisfaction at work. Furthermore, the desire for flexible working arrangements and a positive, respectful workplace atmosphere underscores the workforce's evolving expectations of a shift toward a more holistic approach to well-being. The importance of a multifaceted strategy in addressing workplace well-being is underscored in this study, highlighting the need for organizational practices that are inclusive, empathetic, and sufficiently adaptable to meet employees' diverse needs.

## Discussion and Conclusion

### *Discussion*

The application of ZMET in this study revealed the layered experiences of female employees in the electronics contract manufacturing sector, illuminating the interplay between individuals' aspirations, the organizational culture, and societal expectations. These insights call for the traditional approaches to employees' well-being to be



re-evaluated and advocate for a more holistic strategy that addresses both the root causes of job dissatisfaction and the diverse needs of the workforce.

The recognition of the limitations of one-size-fits-all benefits represents a significant evolution in workplace practices. The findings suggest that there is a pressing need for organizations to adopt strategies that cater to the emotional, psychological, and social aspects of the well-being of their workforce, in addition to their physical health. This requires a deeper exploration of work practices, organizational ethos, a sense of belonging, and leadership dynamics.

It is recommended in this study that organizations foster an environment that is supportive of both professional and personal growth, facilitating work-family life integration, which highlights the importance of personal fulfillment and career development. This comprehensive approach to well-being is crucial for enhancing employees' engagement and satisfaction.

This study also highlights the need for a nurturing workplace defined by effective leadership and positive interpersonal relationships. Policies that promote a work-life balance, open communication, and a positive workplace environment are essential for

building a sense of community and belonging.

Additionally, the importance of balancing professional responsibilities with personal life is emphasized in the study with a call for greater employer flexibility, similar results were presented by Keldenich (2022). This includes offering adaptable work arrangements and acknowledging employees' varied needs, which are crucial steps in improving the health and productivity of the workforce.

To further address employees' nuanced needs, especially those of female employees who are facing unique challenges, organizations should consider implementing cafeteria-style benefit programs. These programs offer a variety of optional benefit, enabling employees to tailor their benefits package to best suit their individual and family needs. This flexibility is invaluable in supporting diverse aspects of well-being and work-life balance, thereby enhancing employees' satisfaction and loyalty. Companies can demonstrate their commitment to recognizing and supporting the varied lifestyles and responsibilities of their workforce by adopting cafeteria-style benefits aligned with the holistic approach to workplace well-being advocated by this study.



*Figure 1.*  
Summary image from Participant B

### *Conclusions*

The results of this investigation contribute significantly to the discourse on workplace well-being, especially with regard to the experience of female employees in the electronics contract manufacturing sector in Taiwan. It was found that organizations could create a more inclusive, supportive, and fulfilling work environment with strategic advantages in the modern workplace by embracing a holistic approach to employees' well-being.

### *Implications for Practice*

The study presents several implications for enhancing workplace well-being:

- Flexibility and Work-Life Integration: Endorsing flexible working arrangements to accommodate diverse employees' needs is crucial for a healthy work-life balance.
- Inclusive Culture: It is essential that a culture of inclusivity, respect, and psychological safety is promoted to foster a sense of belonging and well-being.
- Continuous Learning and Growth: Access to opportunities for professional and personal development is key to maintaining high levels of employees' engagement and satisfaction.
- Communication and Feedback: The provision of clear communication channels and effective feedback mechanisms is vital for a positive workplace atmosphere and employees' contentment.

By integrating cafeteria-style benefits into their well-being programs, organizations can further tailor their support to the unique needs of their employees, reinforcing the strategic importance of a comprehensive, inclusive, and flexible approach to well-being in the workplace.

### References

- Ahmadi, E., Lundqvist, D., Bergström, G., & Macassa, G. (2023). A qualitative study of factors that managers in small companies consider important for their wellbeing. *International Journal of Qualitative Studies on Health and Well-being*, 18(1). DOI: 10.1080/17482631.2023.2286669
- Al-Jubari, I., Mosbah, A., & Salem, S. F. (2022). Employee well-being during COVID-19 pandemic: The role of adaptability, work-family conflict, and organizational response. *Sage Open*, 12(3). <https://doi.org/10.1177/21582440221096142>
- Anghelcev, G., Chung, M.-Y., Sar, S., & Duff, B. R. L. (2015). A ZMET-based analysis of perceptions of climate change among young South Koreans: Implications for social marketing communication. *Journal of Social Marketing*, 5(1), 56-82.
- Borazon, E. Q., Huang, Y.-C., & Liu, J.-M. (2022). Green market orientation and organizational performance in Taiwan's electric and electronic industry: The mediating role of green supply chain management capability. *Journal of Business & Industrial Marketing*, 37(7), 1475-1496.
- Chatterjee, S., & Bryla, P. (2023). Mapping consumers' semi-conscious decisions with the use of ZMET in a retail market setup. *Decision*, 50(3), 221-232.
- Chawla, S., & Sharma, R. R. (2019). Enhancing women's well-being: The role of Psychological Capital and perceived gender equity, with social support as a moderator and commitment as a mediator. *Frontiers in Psychology*, 10. <https://doi.org/10.3389/fpsyg.2019.01377>.
- Daley, T. C., & Henke, R. M. (2022). Supporting workplace mental health in the COVID era: Exemplary practices from the business sector. *American Journal of Health Promotion*, 36(7), 1241-1244.
- Henke, R. M. (2022). Knowing well, being well: Well-being born of understanding: Supporting workforce mental health during the pandemic. *American Journal*

- of Health Promotion*, 36(7), 1213-1244.
- Hsieh, H. F., Huang, Y. T., Ma, S. C., & Wang, Y. W. (2022). Occupational burnout and stress of nurses in Taiwan regarding COVID-19: An intervention with gong medication. *Journal of Nursing Management*, 30(8), 3909-3917.
- Keldenich, C. (2022). Work, motherhood and women's affective well-being. *Review of Economics of the Household*, 20, 1345-1375.
- Kerr, P., Da Torre, M. B., Giguère, C.-É., Lupien, S. J., & Juster, R.-P. (2020). Occupational gender roles in relation to workplace stress, allostatic load, and mental health of psychiatric hospital workers. *Journal of Psychosomatic Research*, 139, 110352. <https://doi.org/10.1016/j.jpsychores.2020.110352>
- Knezevic, A., Olcoń, K., Smith, L., Allan, J., & Pai, P. (2023). Wellness warriors: A qualitative exploration of healthcare staff learning to support their colleagues in the aftermath of the Australian bushfires. *International Journal of Qualitative Studies on Health and Well-being*, 18(1). DOI: 10.1080/17482631.2023.2167298
- Lu, Z., Wang, S., Li, Y., Liu, X., & Olsen, W. (2023). Who gains mental health benefits from work autonomy? The roles of gender and occupational class. *Applied Research in Quality of Life*, 18(4), 1761-1783.
- Ugwu, D. I., Orjiakor, C. T., Enwereuzor, I. K., Onyedibe, C. C., & Ugwu, L. I. (2016). Business-life balance and wellbeing: Exploring the lived experiences of women in a low-to-middle income country. *International Journal of Qualitative Studies on Health and Well-being*, 11(1). DOI: 10.3402/qhw.v11.30492
- Zaltman, G., & Coulter, R. H. (1995). Seeing the voice of the customer: Metaphor-based advertising research. *Journal of Advertising Research*, 35(4), 35-51.
- Zaltman, G., Olson, J., & Forr, J. (2015). Toward a new marketing science for hospitality managers. *Cornell Hospitality Quarterly*, 56(4), 337-344.
- Zhou, S., Da, S., Guo, H., & Zhang, X. (2018). Work-Family Conflict and Mental Health Among Female Employees: A Sequential Mediation Model via Negative Affect and Perceived Stress. *Frontiers in Psychology*, 9, 544. [https://doi: 10.3389/fpsyg.2018.00544](https://doi.org/10.3389/fpsyg.2018.00544)