



## Examining the impact of after-hours work connectivity on job satisfaction in universities: An expectation confirmation theory perspective

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### ABSTRACT

This study applies Expectation Confirmation Theory (ECT) to investigate work connectivity behavior after hours (WCBA) and its impact on job satisfaction among university teachers in Guangzhou, China. By analyzing data from 400 educators using Structural Equation Modeling (SEM), the research explores whether teachers' expectations align with their actual experiences and how this alignment influences job satisfaction. The findings reveal that while educators generally hold high expectations of WCBA, their experiences mostly match these expectations. However, a significant gap between expectations and reality negatively impacts job satisfaction, emphasizing the importance of managing expectations effectively, especially for those with high-intensity WCBA. Surprisingly, the initial hypothesis was not supported, as strong WCBA did not directly reduce job satisfaction. This study demonstrates a complex quantitative relationship between expectations, actual experiences of WCBA, and job satisfaction, highlighting the need for policies that address discrepancies between expectations and realities in after-hours work connectivity to enhance job satisfaction. The findings contribute valuable insights for future research and policy development.

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### 1. Introduction

In today's digital era, work connectivity behavior after hours (WCBA) has attracted growing attention, especially in academic environments. WCBA refers to employees engaging in work tasks outside their regular working hours, typically using digital tools and technologies (Yang et al., 2023). This blending of personal and professional time is particularly common among university teachers. Although it allows more flexibility to work from various locations, it can also increase stress and reduce personal time. Research has shown that blurred boundaries between work and personal life can lower job satisfaction and negatively affect overall well-being (Ninaus et al., 2021). Furthermore, Sonnentag and Bayer (2005) found that not disconnecting from work after hours can weaken

psychological detachment, a key element in recovery and maintaining job satisfaction. This overlap between work and personal time creates a complex and challenging situation. A survey was conducted based on Expectation Confirmation Theory (ECT), a model commonly used in marketing to understand customer satisfaction. However, ECT is also useful for studying work-related experiences. According to this theory, satisfaction depends on the difference between what people expect and what they actually experience (Venkatesh et al., 2011). In this study, WCBA among university teachers in Guangzhou, China, refers to how satisfied teachers feel when comparing their expectations of being connected to work outside normal hours with their actual experiences. This research aims to assess their level of job satisfaction and provide useful insights into how to support their mental and professional well-being more effectively.

### 2. Literature review

#### 2.1. Factors affecting job satisfaction

Research has shown that WCBA is negatively related to job satisfaction. In a study by Cheng et al.

(2022), the role played by psychological entitlement and perceived organizational support (POS) in moderating the relationship was emphasized. Psychological entitlement makes WCBA more damaging to job satisfaction, particularly when POS is low. The research also highlights the significance of individual psychological attributes and organizational structures in influencing job satisfaction. Further evidence for this phenomenon comes from recent work by Lee et al. (2022), which indicated that both motivation and hygiene are key determinants of job satisfaction across different industries.

Kalleberg (1977) took a theoretical look at how job satisfaction is linked with work values and perceived job attributes. Defining convenience, financial, co-worker relationships, career opportunities, and resource adequacy as these dimensions appear significant. Job satisfaction is not considered an independent phenomenon; rather, it is understood as a collection of job-related factors that are its main attributes. This proposal is supported by more recent investigations that are restricted to specific industries, like Alzubi et al. (2023), who identified the work environment, the average pay, and the level of supervision as predominant influences on job satisfaction of construction engineers. Mohan and Vasumathi (2024) put out a contrasting focus on parameters such as rewards, recognition, and job security in the IT industry.

In this manner, Greenidge et al. (2014) led us to a different perspective on emotional intelligence and job satisfaction. In their analysis of the relationships between contextual performance or counterproductive work behaviors and the different facets of EI, they discovered that these concepts mediate performance. This correlated with Došenović and Todorović 's (2021) study on organizational processes and employee well-being. According to Cohen (1993), on the other hand, examination of the relationship between job satisfaction and some types of work commitment (job satisfaction, occupational, union, and organizational work commitment) is also crucial. Their investigation revealed that these types of work commitments are adequate means towards achieving that level of job satisfaction which Aloisio et al. (2021) advocated further in his systematic review of nursing job satisfaction in long-term care facilities where nurses experience a significant positive relationship between psychological empowerment and work stress and job satisfaction.

## 2.2. Impact of WCBA on work–life balance, job satisfaction, and mental health in academia

The relationship between WCBA and employee well-being is quite intricate, and recent studies have been bringing it to light. According to Martin et al. (2022), having contact outside of office hours has detrimental life satisfaction effects as opposed to Santos et al. (2023), who presented a meta-analysis of ICT-enabled after-hours working, stating that it

has both positive and negative ramifications for work-family dynamics. For instance, using ICT for work purposes after hours for secondary school teachers was the subject of Bauwens et al. (2020), who found that higher levels of acceptance of technology are associated with greater work-related ICT use after hours (WIA)-induced disengagement from work, thus lowering work–life balance.

Moreover, Park et al. (2020) researched and investigated the application of weekly stress from ICT demands on elementary teachers and found that it inflicts a serious weekly burden on them. This is consistent with the findings of Dong et al. (2022), which stated that WCBA enhances psychological distress because of work-to-family conflicts worsened by leader workaholism. This consists of negative ruminations of a non-affective nature and even insomnia. The study also indicated that the use of advanced technological boundary management combined with support from school principals tends to reduce these effects, which means that strategic and supportive management is essential to lessen the adverse effect of ICT demands on teachers' mental health.

With respect to university staff members, Winefield and Jarrett (2001) reported high levels of psychological stress for staff involved in both teaching and research due to heavy workload pressure. Zhu et al. (2024) further elaborated on this complexity, describing WCBA as a "double-edged sword" that can lead to both work engagement and burnout, with effects mediated by work autonomy and work–family conflict. Together, these findings call for institutional policies regarding the well-being of academic staff. Houston et al. (2006) examined how increased workload pressure affects academic staff's job satisfaction in relation to WCBA's demand for increased accountability. This relationship between WCBA and job satisfaction was further explored by Cheng et al. (2022), who reported that perceived organizational support can mitigate the negative impact of WCBA on job satisfaction, whereas psychological entitlement tends to exacerbate it. In a time where academic roles are increasingly met with higher expectations brought upon by WCBA's increased accountability standard, job satisfaction may decrease as staff responsibilities become more complex and they struggle to integrate their professional responsibilities with their personal life.

Oshagbemi's (1997) classification of university teachers on the basis of job satisfaction levels suggested that WCBA could impact different groups within academia differently with respect to overall job satisfaction and engagement with their work. While these studies are not directly related to a university setting, they may provide insight into how WCBA affects the different groups within an academic organization.

With respect to coping strategies and mental health, Adams et al. (2016) reported relationships between coping patterns and demographic and organizational factors among special school staff. If

these findings can be extrapolated to universities, similar coping mechanisms may be present among university staff as they try to cope with the new reality of WCBA demands.

Catano et al.'s (2010) study on occupational stress in Canadian universities reinforced what most people would assume: Faculty members face significant levels of stress and strain. The stress that can arise from WCBA highlights the need for comprehensive strategies that address faculty wellbeing despite ever-changing work demands.

Ultimately, the evidence examined in this work indicates that WCBA exerts diverse influences on educators and academic personnel. The findings endorse effective policies and supportive practices that address the distinct problems encountered by academic professionals in a WCBA context while highlighting the importance of a balanced approach to work connectivity and the well-being of university staff.

### 2.3. Expectation confirmation theory

Expectation confirmation theory (ECT) was proposed by Oliver (1977): Satisfaction is predicated upon confirmation, where experiences meet expectations, or disconfirmation, where there is variance between what was expected and what was actually encountered. According to Oliver (1977), the

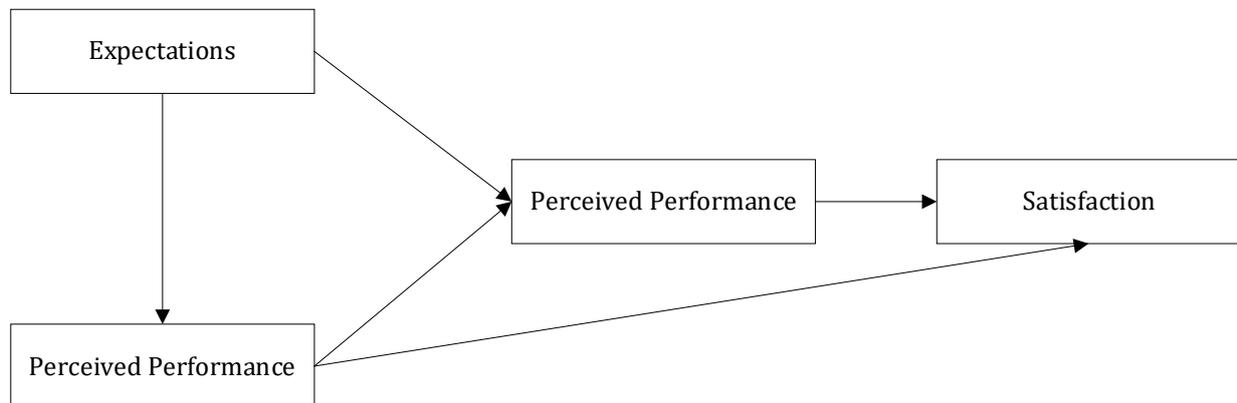


Fig. 1: Expectation confirmation theory (Oliver, 1977)

### 2.4. ECT in WCBA and job satisfaction research

The interaction between work-life balance and job content has been highly scrutinized in the field of scholarly research. This is especially true within the framework of employee cognitive theory. This theory provides a framework for understanding WCBA among university academics. It was originally developed to help understand customer satisfaction, but it can also be applied to job satisfaction (Alruwaie et al., 2012). The theory suggests that satisfaction is largely dependent on how well the person's initial expectations of his or her role match his or her real experiences. WCBA is the difference between what teachers expect after hours of work and what they actually experience.

Many studies have shown that teachers enter the profession with certain expectations about both

route to forming this judgement involves many steps (Fig. 1). The first begins with initial expectations, followed by perceived performance and actual experiences. Then, we obtain the expectation–reality gap, which is assessed as either a confirmation or a disconfirmation. This assessment ultimately brings us to the final level of satisfaction. Therefore, it is safe to say that ECT provides a dynamic process of thinking that is used at every step of forming a judgment about satisfaction.

In the workplace context, ECT provides a lens through which to understand how employees' preconceived notions about aspects of their job, such as workload, work–life balance, and technological integration, impact their job satisfaction when faced with the reality of these aspects. Studies applying ECT in organizational settings often focus on how employees' expectations about job roles, organizational support, and the work environment influence their job satisfaction and subsequent job-related behaviors (Yeşilkaya and Yıldız, 2023). The application of ECT to the study of WCBA and job satisfaction in academia is particularly compelling. This study provides a theoretical basis for exploring how university teachers' expectations of after-hour work connectivity compare with their actual experiences and how this expectation–reality gap impacts their overall job satisfaction.

work–life balance and technological integration (Bauwens et al., 2020; Sorensen and McKim, 2014). However, reality does not often align with those expectations. A pervasive WCBA means that the material needs to be available after traditional working hours. Together, these findings support professional and personal life (Maynard-Moody and Musheno, 2022). When someone expects one thing but gets something else entirely, this leads to reduced job satisfaction, heightened stress, and a strained work–life balance.

Individual psychological traits and organizational contexts play a role in how negatively this discrepancy could affect a person. Individuals who have greater emotional intelligence or effective coping strategies might be better equipped to handle all the challenges posed by WCBA. Organizations aren't off the hook either. Institutions that

acknowledge how tough WCBA can be are already doing themselves a favor by putting resources in place for wellbeing or clear communication policies.

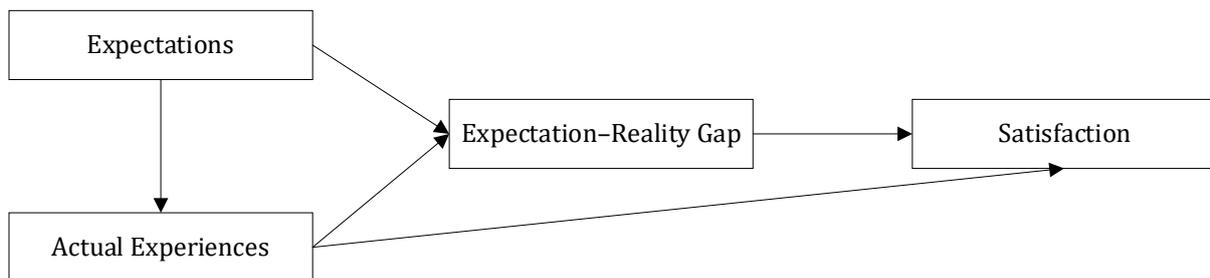
Newer research points to academic institutions as those that need to actively manage these expectations of staff regarding WCBA (Yang et al., 2022). This means setting everyone’s feet back on planet Earth in light of expectations of after-work hours and providing support for staff to cope with after-effects. Establishing clear policies regarding working connectivity and providing mental health resources for all staff members are crucial first steps.

In addition, applying ECT to WCBA in academia allows for new research methods. Future studies can focus on empirically testing the theory in different academic settings. Exploring how different factors,

such as the type of institution or individual differences among teachers, influence the expectation–reality gap could be helpful.

**2.5. Towards a research model: Hypothesis development**

By altering ECT to analyze WCBA’s effect on job satisfaction among university teachers, the study reframes ECT’s traditional constructs so that they are more suitable for academic work. This allows them to analyze how the expectations and actual experiences of WCBA interact with one another and influence job satisfaction. A model for this research can be found in Fig. 2.



**Fig. 2:** Research model

Expectations, in this context, refer to the initial beliefs of university teachers regarding how frequent, intense, and impactful WCBA will be in their professional and personal lives. This approach is similar to ECTs’ “expectations,” which involve experts’ initial beliefs about a product or service. In the academic setting, these expectations set a baseline and significantly affect teachers’ attitudes and approaches toward work–life balance and professional responsibilities. The term “actual experiences” comes from ECT’s “perceived performance”; this term captures how WCBA is actually experienced by university teachers, including the scope and characteristics of after-hours work-related communications and tasks, as well as how much it invades personal time. Grasping these real-life occurrences is imperative when one tries to assess the real effect of the WCBA, similarly as one would try to assess the performance of a product in the traditional use of the ECT.

Gap expectation reality stems from the rationale behind disconfirmation ECT. This gap is reinforced by the distinction between the expectations of the educators and the experiences that they go through with WCBA. This gap can be favorable or unfavorable and can have an impact on job satisfaction. It acts as an important indicator of the degree of divergence between the imagined and the real scenarios of after-work engagements, which is similar to the aspects of disconfirmation in consumer satisfaction studies. Furthermore, satisfaction refers to the global job satisfaction of university educators who make use of WCBA, not only overlooking their attitudes towards WCBA but also the wider issues towards professional performance and personal well-being. It

has to do with the combination of anticipation, experience, and gap.

In this study, we propose a structural model of how after-hour connectivity affects job satisfaction in academia by applying the revised ECT elements in the context of WCBA. This observation points to the necessity of harmonizing expectations and experiences to attain higher job satisfaction. Moreover, institutions of higher learning need to recognize the multifaceted nature of WCBA so as to formulate appropriate management strategies.

This study, within ECT’s theoretical framework, proposes a number of hypotheses for the complex relationships between the expectations of university teachers, their experiences with WCBA, the gap between expectations and reality, and finally, job satisfaction. Their aim was to determine the direct and the indirect effects of WCBA on job satisfaction. Thus, the following hypotheses are proposed:

**H1:** University teachers’ expectations of WCBA significantly influence their actual experiences, where specific expectations lead to corresponding experiences.

**H2:** The size of the expectation–reality gap in WCBA is significantly influenced by university teachers’ initial expectations, with less accurate expectations leading to a larger gap.

**H3:** The actual experience of WCBA among university teachers significantly influences the size of the expectation–reality gap, where more negative experiences contribute to a wider gap.

**H4:** The size of the expectation–reality gap in WCBA significantly influences university teachers’ job

satisfaction, with a larger gap leading to lower satisfaction.

**H5:** The actual experience of WCBA among university teachers has a significant influence on their job satisfaction, where more intensive experiences are associated with reduced satisfaction.

### 3. Methodology

#### 3.1. Research design

This study used a questionnaire survey to test the hypotheses and SEM to analyse the data. We adopted a cross-sectional design to obtain a snapshot of the experience and perceptions of teachers. To determine how much it affects job satisfaction.

The process of survey validation has multiple stages that essentially guarantee both content validity and construct validity. Three academic experts were chosen to be part of a panel that reviewed the questionnaire items for content validity and their relevance, clarity, and comprehensiveness were considered. Upon refining all these items in accordance with their feedback, they were found to better match the goals of this research study. The constructional validity of the survey was also quantified via the Kaiser–Meyer–Olkin (KMO) test and Bartlett’s test of sphericity, whereas Cronbach’s alpha was used to examine whether consistency existed between the measurements.

Many studies have developed this methodology, but one of the greatest points has been developing and administering a structured questionnaire. It uses a 5-point Likert scale and is consistent with the ECT constructs. The questionnaire measured variables such as expectations for WCBA, actual experiences with WCBA, the gap between those expectations and reality, and overall job satisfaction. After all, we even ensured that the validation process was rigorous enough to ensure the reliability and validity of the data.

#### 3.2. Participants and sampling

The present study on WCBA focuses primarily on university educators in Guangdong Province. This population includes approximately 82,600 teachers from conventional undergraduate colleges and approximately 2,100 educators from vocational undergraduate institutions, yielding a total of 84,700 individuals. These figures are sourced from the "Statistical Bulletin on the Development of Education in Guangdong Province in 2022," published by the Guangdong Provincial Department of Education.

Cochran's (1977) formula was used to calculate the sample size for this study. This formula takes into account factors such as total population size, the desired confidence level (which was set to 95%), and the margin of error (which was set to 5%). This approach is an effective method for researchers to balance precision with practicality in educational

research. For our test subject, which included 84,700 teachers, this formula yielded approximately 383 participants. This approach provides statistically significant results.

#### 3.3. Data collection methods

The data for this study were obtained through an online questionnaire. The research was executed via the Wenjuanxing platform (www.wjx.cn). An established and reliable survey instrument in China. This strategy is selected for its efficiency, cost-effectiveness, and capacity to engage a geographically diversified community with few disturbances. Participants were recruited via WeChat, a widely used social communication platform in China, where they accessed a link to the questionnaire, along with details regarding the study's objective, estimated completion time, and pledges of confidentiality and anonymity. Reminder emails were dispatched within a designated window following the non-respondents to increase response rates. This method guarantees an increased involvement rate and the acquisition of extensive data for the research.

#### 3.4. Data analysis

This study focused on basic reliability and validity analyses to ensure the consistency and accuracy of the questionnaire. Reliability was tested via Cronbach's alpha, whereas validity analysis examined both content validity and construct validity. The main analytical approach employed was SEM, which facilitated a nuanced exploration of the relationships between observed and latent variables related to WCBA.

## 4. Results

#### 4.1. Demographics

The survey, conducted from January 17 to January 23, 2024, via WeChat, targeted 429 individuals and achieved a significant response rate of approximately 93.24%, with 400 respondents completing the questionnaire.

As shown in Table 1, the demographic breakdown of the participants revealed a male predominance, accounting for 60.7% of the total. The majority of the respondents were 45--54 years old, representing 39.1% of the sample. A substantial number of participants held master's degrees, constituting 42.4% of the responses, whereas the largest segment in terms of work experience had 11--20 years in the field, comprising 38.6% of the respondents.

#### 4.2. Reliability and validity

As shown in Table 2, the analysis yielded a Cronbach's alpha of 0.694 and a standardized alpha

of 0.695, which was calculated over 16 items from 400 respondents. Although these values are slightly below the ideal threshold of 0.7, they indicate moderate internal consistency, suggesting that the

questionnaire items are reasonably correlated and collectively provide a coherent measure of the constructs under investigation.

**Table 1: Demographic information**

| Category        | Items              | Gender    |            | Total |
|-----------------|--------------------|-----------|------------|-------|
|                 |                    | Female    | Male       |       |
| Age group       | 25-34 years        | 5(22.7%)  | 17(77.3%)  | 22    |
|                 | 35-44 years        | 47(58.8%) | 33(41.3%)  | 80    |
|                 | 45-54 years        | 40(24.0%) | 127(76.0%) | 167   |
|                 | 55-64 years        | 38(33.0%) | 77(67.0%)  | 115   |
|                 | 65 years and above | 11(68.8%) | 5(31.3%)   | 16    |
| Education level | Bachelor's degree  | 33(24.4%) | 102(75.6%) | 135   |
|                 | Doctoral degree    | 31(52.5%) | 28(47.5%)  | 59    |
|                 | Master's degree    | 68(37.6%) | 113(62.4%) | 181   |
|                 | Other              | 9(36.0%)  | 16(64.0%)  | 25    |
|                 | 11-20 years        | 30(18.2%) | 135(81.8%) | 165   |
| Work experience | 5-10 years         | 45(51.1%) | 43(48.9%)  | 88    |
|                 | Less than 5 years  | 31(43.1%) | 41(56.9%)  | 72    |
|                 | More than 20 years | 35(46.7%) | 40(53.3%)  | 75    |

**Table 2: Reliability test**

| Cronbach's alpha coefficient | Standardized Cronbach's alpha coefficient | Items | Sample size |
|------------------------------|---|-------|-------------|
| 0.694                        | 0.695                                     | 16    | 400         |

As part of the validity test, the Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity were used. The KMO test, which yields a value of 0.79, indicates a good level of sampling adequacy for the factor analysis. Typically, a KMO value greater than 0.6 is considered acceptable, with values closer to 1 being ideal. In this context, a KMO of 0.79 suggested that the sample size was adequate and that the data patterns were suitable for conducting a reliable and meaningful factor analysis (Table 3). When the KMO measure was used, Bartlett's test of

sphericity was performed, resulting in an approximate chi-square value of 3589.087 with 120 degrees of freedom and a highly significant p value of 0.000. The significance level, denoted by '\*\*\*', indicates a 1% significance level, underscoring the robustness of the test. This result supports the appropriateness of factor analysis by confirming that the variables are correlated well enough in the dataset and not in an identity matrix, which would imply independence among variables.

**Table 3: KMO test and Bartlett's test**

|                          |                                |          |
|--------------------------|--------------------------------|----------|
|                          | KMO value                      | 0.79     |
| Bartlett sphericity test | Approximate chi-square (math.) | 3589.087 |
|                          | df                             | 120      |
|                          | P                              | 0.000*** |

\*\*\*: Significance levels at 1%

### 4.3. SEM analysis

In the SEM analysis of the study focusing on WCBA and its impact on job satisfaction among university teachers, several key relationships were examined via abbreviated variable names in both Table 4 and the corresponding Fig. 3. The analysis explored the interconnections among 'Expectations' (expectations of WCBA), 'ER Gap' (expectation-reality gap), 'Actual Experiences' (actual experiences of WCBA), and 'Satisfaction' (job satisfaction).

As shown in Table 4, the SEM revealed a significant positive relationship between 'Expectations' of WCBA and 'Actual Experiences', as indicated by a nonstandardized coefficient of 0.526 and a standardized coefficient of 0.431. The high statistical significance ( $p < 0.001^{***}$ ) suggests that expectations strongly correlate with actual experiences of WCBA. Conversely, 'Expectations' showed a significant negative relationship with the 'ER Gap', as evidenced by coefficients of -0.531 (nonstandardized) and -0.458 (standardized) and a

p value of less than  $0.001^{***}$ . This implies that higher expectations of WCBA are associated with a more substantial expectation-reality gap.

The connection between 'Actual Experiences' and 'ER Gap' was found to be weak and nonsignificant, with coefficients of 0.054 (nonstandardized) and 0.057 (standardized) and a p value of 0.274. Similarly, the direct impact of 'Actual Experiences' on 'Satisfaction' was not statistically significant, as indicated by coefficients of 0.031 (nonstandardized) and 0.03 (standardized) and a p value of 0.560.

A noteworthy finding was the negative relationship between the 'ER Gap' and 'Satisfaction', with coefficients of -0.12 (nonstandardized) and -0.108 (standardized), which were significant at the 5% level ( $p < 0.05^{**}$ ). This finding suggested that a larger gap between expectations and reality in WCBA is associated with lower job satisfaction.

Fig. 3, as presented below, depicts a comprehensive illustration of the relationships between the explicit or observed variables and the latent or underlying variables within the study. Fig 3

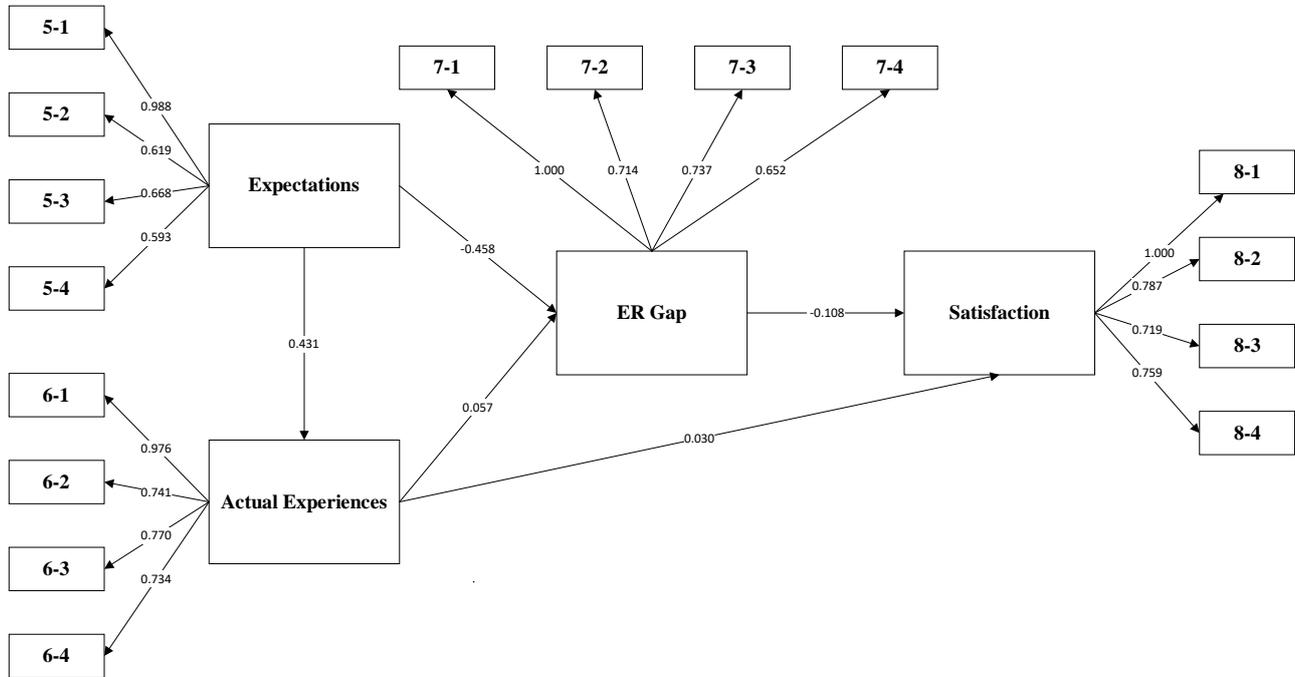
effectively visualizes how these observed variables serve as tangible indicators of the more abstract

latent variables, thereby elucidating the complex interplay within the model.

**Table 4: Model regression coefficients**

| Latent variable    | → | Observed variable  | Unstandardized coefficient | Standardized coefficient | Standard error | Z      | P        |
|--------------------|---|--------------------|----------------------------|--------------------------|----------------|--------|----------|
| Expectations       | → | Actual experiences | 0.526                      | 0.431                    | 0.06           | 8.767  | 0.000*** |
| Expectations       | → | ER Gap             | -0.531                     | -0.458                   | 0.063          | -8.44  | 0.000*** |
| Actual experiences | → | ER Gap             | 0.054                      | 0.057                    | 0.049          | 1.095  | 0.274    |
| Actual experiences | → | Satisfaction       | 0.031                      | 0.03                     | 0.054          | 0.583  | 0.56     |
| ER Gap             | → | Satisfaction       | -0.12                      | -0.108                   | 0.056          | -2.158 | 0.031**  |

\*\*\* and \*\* represent significance levels at 1% and 5%, respectively



**Fig. 3: SEM path diagram**

In terms of the model fit indicators, as shown in Table 5, we obtained the following results. The chi-square statistic was 141.839, juxtaposed against 99 degrees of freedom, culminating in a chi-square/degrees of freedom ratio of 1.433. This ratio, substantially below the conventional acceptability criterion of 3, indicates a commendable fit of the model, indicating that the theoretical structure aptly encapsulates the empirical data.

The selection of fit indices for the SEM analysis was based on their complementary nature in assessing model fit. The chi-square/df ratio was chosen because it accounts for model complexity, with values below 3 indicating a good fit. The GFI

was selected because it measures the proportion of variance that is accounted for by the estimated population covariance, whereas the RMSEA was included because it penalizes model complexity and is relatively insensitive to sample size. The combination of CFI, NFI, and NNFI was used, as they provide different perspectives on model fit: CFI compares the model to a baseline model while accounting for sample size, NFI assesses the model by comparing the  $\chi^2$  value of the model to the  $\chi^2$  value of the null model, and NNFI adjusts for model complexity. This comprehensive set of indices provides a robust evaluation of model fit across different aspects of the model's structure.

**Table 5: Model fit indicators**

| $\chi^2$ | df | P        | Chi-square/df | GFI   | RMSEA | RMR   | CFI   | NFI   | NNFI  |
|----------|----|----------|---------------|-------|-------|-------|-------|-------|-------|
| -        | -  | >0.05    | <3            | >0.9  | <0.10 | <0.05 | >0.9  | >0.9  | >0.9  |
| 141.839  | 99 | 0.003*** | 1.433         | 0.961 | 0.033 | 0.312 | 0.988 | 0.961 | 0.985 |

\*\*\*: Significance levels at 1%

The model's statistical significance is further accentuated by a P value of 0.003, denoting robust significance at the 1% level. This emphatic statistical validation buttressed the reliability and validity of the SEM analysis, rendering the inferred relationships within the study both compelling and credible. This profound level of significance underscores the robust construction of the

theoretical underpinnings delineating the nexus between after-hours work connectivity and job satisfaction.

When the model's overall fit was assessed, the goodness-of-fit index (GFI) was determined to be 0.961, surpassing the benchmark threshold of 0.9. This superior GFI value indicates substantial congruence between the hypothesized model and

the observed variance–covariance pattern in the data. Concurrently, the root mean square error of approximation (RMSEA) was 0.033, which was significantly less than the upper limit of 0.10. This favourable RMSEA value indicates that the model's complexity is aptly aligned with the sample size and the empirical relationships observed.

The root mean square residual (RMR) presented a value of 0.312, marginally exceeding the ideal upper bound of 0.05. Despite this, the holistic interpretation of the model's fitness, considering the aggregate of the indices, remains within the realm of acceptability. The comparative fit index (CFI), normed fit index (NFI), and nonnormed fit index (NNFI), also known as the Tucker–Lewis index, are recorded values in excess of the 0.9 threshold, with values of 0.988, 0.961, and 0.985, respectively. These indices collectively corroborate the robustness of the model, affirming that the proposed theoretical relationships within the study are well reflected and substantiated.

## 5. Discussion

The findings show the importance of understanding expectations to manage the negative consequences of after-hours connections.

A major finding of this study is that job satisfaction depends heavily on the expectation–reality gap. While prior studies have identified WCBA as a source of stress leading to blurred professional–personal boundaries (Liu et al., 2024; Sonnentag and Bayer, 2005), this research demonstrates through empirical data that job satisfaction depends highly upon whether actual experiences match with initial anticipations. This is consistent with Bauwens et al. (2020), who argued that digital learning environments create complex relationships with work–life balance for high school teachers. However, our study extends these conclusions to college professors who encounter unique problems due to their specific vocational prospects.

Although contrasting with previous studies by Cheng et al. (2022) and Greenidge et al. (2014), which suggested WCBA intensity impacts negatively on job satisfaction directly, this study found that the frequency or intensity of WCBA alone does not have statistically significant effects on job satisfaction, but the alignment of expectations with reality is what is important. In supporting Kalleberg's (1977) theory, which asserted that work value and perceived job attributes must be congruent to result in job satisfaction, it is clear from our findings that the congruence between work values and perceived job attributes influences an effective level of satisfaction for employees. It is our finding, therefore, that dissatisfaction arises from not only the presence of WCBA but also from a mismatch between expected and actual experiences.

Moreover, our research contests the assumption made by scholars like Park et al. (2020) or Winefield and Jarrett (2001), who argued that more WCBA

leads to worse well-being. On one hand, these studies indicate a relationship between psychological strain and increased ICT demands as well as workload pressures; however, this study indicates that such adverse effects could be reduced by proper expectations management practices. When educators hold reasonable expectations about their after-hours connectivity requirements in relation to what they actually experience during these periods at work, their overall job satisfaction does not decline markedly while attempting to fulfil these requests better suited to evening hours or any additional time without potentially jeopardizing their professional development.

Additionally, academic institutions are heavily affected by these findings. As highlighted by Houston et al. (2006), managing workload expectations is crucial in maintaining staff well-being. In our research, we go a step further to emphasize the need for explicit guidelines and support systems that focus on WCBA. Institutions can raise morale with teachers by recognizing that they care about their lives outside of school hours, not expecting instant responses to emails, and helping them handle such pressures more effectively.

Several applicable recommendations for higher education institutions are possible in view of these findings. Firstly, universities should establish guidelines that act as “quiet hours” during which no non-emergency communications can be made past a certain time. Secondly, technology solutions have to be adopted by educational sectors that allow staff members to set restrictions, such as email scheduling systems that enable the delivery of messages only during working hours. Thirdly, heads of departments should be trained on how they could lead their juniors to good WCBA habits and encourage them to maintain proper work–life boundaries. Fourthly, unless there are emergencies, colleges need explicit policies that protect faculty's right to disconnect. Finally, frequent training sessions about digital wellness and time management tips can help educators develop their personal strategies for managing WCBA successfully. These policies require regular review and adjustment in response to feedback from faculty and rapid technological changes.

From a methodological perspective, this study stands out for its rigorous approach. The reliability and validity of the data collection instruments were confirmed through Cronbach's alpha, KMO, and Bartlett's tests, ensuring the robustness of the findings. The use of structural equation modeling provides a nuanced understanding of the complex relationships among WCBA expectations, actual experiences, the expectation–reality gap, and job satisfaction. This aligns with the methodological standards set by Catano et al. (2010) in occupational stress research and reinforces the credibility of our conclusions.

Despite its contributions, this study has certain limitations. First, it is important to acknowledge the limitations of our reliability testing. The Cronbach's

alpha coefficient of 0.694 approaches the conventional threshold of 0.7, which suggests that the internal consistency of our measurement items could be improved. However, given the exploratory nature of applying ECT to WCBA in academia and considering that coefficient values above 0.6 are accepted in exploratory research (Karimian and Chahartangi, 2024), our findings remain valuable while acknowledging this constraint. Second, the sample predominantly consisted of middle-aged male university teachers, which may limit the generalizability of the findings. Future research should aim to explore the effects of WCBA on more diverse demographic groups, including female educators and younger faculty members. Additionally, comparative studies across different institutional contexts, such as vocational versus research-intensive universities, could provide further insights into how organizational environments influence the expectation–reality gap and job satisfaction.

## 6. Conclusion

This study provides significant insights into the relationship between WCBA and job satisfaction among university educators. The results confirm the first hypothesis, demonstrating a positive relationship between teachers' expectations of WCBA and their actual experiences. Specifically, the findings indicate that higher expectations, when met, lead to a better experience, supporting the principles of ECT. This aligns with the notion that accurate or moderate expectations result in a smaller expectation–reality gap, whereas overly optimistic expectations amplify the gap, complicating its management in academic settings.

The second hypothesis was also validated, further reinforcing the critical role of expectation alignment in influencing job satisfaction. However, the third hypothesis was not supported, as the intensity of WCBA experience had no direct effect on the expectation–reality gap. Despite this, the fourth hypothesis revealed a significant negative relationship between the expectation–reality gap and job satisfaction, emphasizing that wider gaps consistently lead to reduced job satisfaction. This underscores the importance of narrowing these gaps to enhance employee well-being.

Interestingly, the fifth hypothesis showed no direct relationship between the intensity of WCBA and job satisfaction. This challenges traditional perceptions, suggesting that the focus should shift from the quantity of after-hours work to the alignment between expectations and experiences. In this context, the quality and predictability of WCBA experiences emerge as more critical factors for job satisfaction.

This study makes a meaningful contribution to the academic discourse on WCBA and job satisfaction, particularly within the university teaching context. Shifting the focus to expectation management challenges conventional assumptions

about the detrimental effects of after-hours work on job satisfaction. The findings highlight the need for a nuanced approach in which managing the quality and alignment of WCBA experiences takes precedence over simply reducing workload intensity.

## List of abbreviations

|        |  |
|--------|--|
| WCBA   | Work connectivity behavior after hours                 |
| ECT    | Expectation confirmation theory                        |
| SEM    | Structural equation modeling                           |
| POS    | Perceived organizational support                       |
| EI     | Emotional intelligence                                 |
| ICT    | Information and communication technology               |
| WIA    | Work-related ICT use after hours                       |
| KMO    | Kaiser–Meyer–Olkin test                                |
| df     | Degrees of freedom                                     |
| GFI    | Goodness-of-fit index                                  |
| RMSEA  | Root mean square error of approximation                |
| RMR    | Root mean square residual                              |
| CFI    | Comparative fit index                                  |
| NFI    | Normed fit index                                       |
| NNFI   | Nonnormed fit index (also known as Tucker–Lewis index) |
| ER Gap | Expectation–reality gap                                |

## Compliance with ethical standards

### Ethical considerations

This study was conducted in accordance with the Academic Integrity Code of Universiti Malaysia Sabah. Informed consent was obtained from all participants, and their anonymity and voluntary participation were ensured.

### Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## References

- Adams J, Dudenhöffer S, Claus M, Kimbel R, Letzel S, and Rose DM (2016). Coping patterns in special school staff: Demographic and organizational factors. *Occupational Medicine*, 66(2): 138–142. <https://doi.org/10.1093/occmed/kqv157> PMID:26428443
- Aloisio LD, Coughlin M, and Squires JE (2021). Individual and organizational factors of nurses' job satisfaction in long-term care: A systematic review. *International Journal of Nursing Studies*, 123: 104073. <https://doi.org/10.1016/j.ijnurstu.2021.104073> PMID:34536909
- Alruwaie M, El-Haddadeh R, and Weerakkody V (2012). A framework for evaluating citizens' expectations and satisfaction toward continued intention to use e-government services. In the *Electronic Government: 11<sup>th</sup> IFIP WG 8.5 International Conference*, Springer, Kristiansand, Norway: 273–286. [https://doi.org/10.1007/978-3-642-33489-4\\_23](https://doi.org/10.1007/978-3-642-33489-4_23)
- Alzubi KM, Alkhateeb AM, and Hiyassat MA (2023). Factors affecting the job satisfaction of construction engineers: Evidence from Jordan. *International Journal of Construction Management*, 23(2): 319–328. <https://doi.org/10.1080/15623599.2020.1867945>

- Bauwens R, Muylaert J, Clarysse E, Audenaert M, and Decramer A (2020). Teachers' acceptance and use of digital learning environments after hours: Implications for work-life balance and the role of integration preference. *Computers in Human Behavior*, 112: 106479. <https://doi.org/10.1016/j.chb.2020.106479>
- Catano V, Francis L, Haines T, Kirpalani H, Shannon H, Stringer B, and Lozanski L (2010). Occupational stress in Canadian universities: A national survey. *International Journal of Stress Management*, 17(3): 232-258. <https://doi.org/10.1037/a0018582>
- Cheng K, Cao X, Guo L, and Xia Q (2022). Work connectivity behavior after-hours and job satisfaction: Examining the moderating effects of psychological entitlement and perceived organizational support. *Personnel Review*, 51(9): 2277-2293. <https://doi.org/10.1108/PR-06-2020-0413>
- Cochran WG (1977). *Sampling techniques*. 3<sup>rd</sup> Edition, John Wiley and Sons, New York, USA.
- Cohen A (1993). Work commitment in relation to withdrawal intentions and union effectiveness. *Journal of Business Research*, 26(1): 75-90. [https://doi.org/10.1016/0148-2963\(93\)90044-P](https://doi.org/10.1016/0148-2963(93)90044-P)
- Dong M, Zhang T, Li Y, and Ren Z (2022). The effect of work connectivity behavior after-hours on employee psychological distress: The role of leader workaholism and work-to-family conflict. *Frontiers in Public Health*, 10: 722679. <https://doi.org/10.3389/fpubh.2022.722679>  
**PMid:35284392 PMCID:PMC8905642**
- Došenović D and Todorović M (2021). The influence of the organizational processes on job satisfaction. *EMC Review-Economy and Market Communication Review*, 21(1): 141-157. <https://doi.org/10.7251/EMC2101141D>
- Greenidge D, Devonish D, and Alleyne P (2014). The relationship between ability-based emotional intelligence and contextual performance and counterproductive work behaviors: A test of the mediating effects of job satisfaction. *Human Performance*, 27(3): 225-242. <https://doi.org/10.1080/08959285.2014.913591>
- Houston D, Meyer LH, and Paewai S (2006). Academic staff workloads and job satisfaction: Expectations and values in academe. *Journal of Higher Education Policy and Management*, 28(1): 17-30. <https://doi.org/10.1080/13600800500283734>
- Kalleberg AL (1977). Work values and job rewards: A theory of job satisfaction. *American Sociological Review*, 42(1): 124-143. <https://doi.org/10.2307/2117735>
- Karimian Z and Chahartangi F (2024). Development and validation of a questionnaire to measure educational agility: A psychometric assessment using exploratory factor analysis. *BMC Medical Education*, 24: 1284. <https://doi.org/10.1186/s12909-024-06307-z>  
**PMid:39521984 PMCID:PMC11549736**
- Lee B, Lee C, Choi I, and Kim J (2022). Analyzing determinants of job satisfaction based on two-factor theory. *Sustainability*, 14(19): 12557. <https://doi.org/10.3390/su141912557>
- Liu Y, Bai Q, Yuan Y, Li B, Liu P, Liu D, Guo M, and Zhao L (2024). Impact of work connectivity behavior after-hours on employees' unethical pro-family behavior. *Current Psychology*, 43(13): 11785-11803. <https://doi.org/10.1007/s12144-023-05291-9>
- Martin L, Pénard T, and Poussing N (2022). Are employees happier when staying connected with their companies outside working hours? *Social Science Computer Review*, 40(4): 1035-1053. <https://doi.org/10.1177/08944393211061273>
- Maynard-Moody SW and Musheno MC (2022). *Cops, teachers, counselors: Stories from the front lines of public service*. University of Michigan Press, Ann Arbor, USA. <https://doi.org/10.3998/mpub.12247078>
- Mohan PM and Vasumathi A (2024). A study on factors affecting job satisfaction in the IT industry. *Multidisciplinary Science Journal*, 6(10): e2024223. <https://doi.org/10.31893/multiscience.2024223>
- Ninaus K, Diehl S, and Terlutter R (2021). Employee perceptions of information and communication technologies in work life, perceived burnout, job satisfaction and the role of work-family balance. *Journal of Business Research*, 136: 652-666. <https://doi.org/10.1016/j.jbusres.2021.08.007>
- Oliver RL (1977). Effect of expectation and disconfirmation on postexposure product evaluations: An alternative interpretation. *Journal of Applied Psychology*, 62(4): 480-486. <https://doi.org/10.1037//0021-9010.62.4.480>
- Oshagbemi T (1997). Job satisfaction profiles of university teachers. *Journal of Managerial Psychology*, 12(1): 27-39. <https://doi.org/10.1108/02683949710164235>
- Park Y, Liu Y, and Headrick L (2020). When work is wanted after hours: Testing weekly stress of information communication technology demands using boundary theory. *Journal of Organizational Behavior*, 41(6): 518-534. <https://doi.org/10.1002/job.2461>
- Santos A, Roberto MS, Camilo C, and Chambel MJ (2023). Information and communication technologies-assisted after-hours work: A systematic literature review and meta-analysis of the relationships with work-family/life management variables. *Frontiers in Psychology*, 14: 1101191. <https://doi.org/10.3389/fpsyg.2023.1101191>  
**PMid:36818060 PMCID:PMC9928856**
- Sonnentag S and Bayer UV (2005). Switching off mentally: Predictors and consequences of psychological detachment from work during off-job time. *Journal of Occupational Health Psychology*, 10(4): 393-414. <https://doi.org/10.1037/1076-8998.10.4.393>  
**PMid:16248688**
- Sorensen TJ and McKim AJ (2014). Perceived work-life balance ability, job satisfaction, and professional commitment among agriculture teachers. *Journal of Agricultural Education*, 55(4): 116-132. <https://doi.org/10.5032/jae.2014.04116>
- Venkatesh V, Thong JY, Chan FK, Hu PJH, and Brown SA (2011). Extending the two-stage information systems continuance model: Incorporating UTAUT predictors and the role of context. *Information Systems Journal*, 21(6): 527-555. <https://doi.org/10.1111/j.1365-2575.2011.00373.x>
- Winefield AH and Jarrett R (2001). Occupational stress in university staff. *International Journal of Stress Management*, 8: 285-298. <https://doi.org/10.1023/A:1017513615819>
- Yang Y, Yan R, and Meng Y (2022). Can't disconnect even after-hours: How work connectivity behavior after-hours affects employees' thriving at work and family. *Frontiers in Psychology*, 13: 865776. <https://doi.org/10.3389/fpsyg.2022.865776>  
**PMid:35356326 PMCID:PMC8959651**
- Yang Y, Yan R, Li X, Meng Y, and Xie G (2023). Different results from varied angles: The positive impact of work connectivity behavior after-hours on work engagement. *Behavioral Sciences*, 13(12): 971. <https://doi.org/10.3390/bs13120971>  
**PMid:38131827 PMCID:PMC10740437**
- Yeşilkaya M and Yıldız T (2023). What do expectations change? Optimistic expectations, job crafting, job satisfaction and a new theoretical model. *International Journal of Organizational Analysis*, 31(6): 2793-2810. <https://doi.org/10.1108/IJOA-01-2022-3111>
- Zhu F, Gao Y, and Chen X (2024). Freedom or bondage? The double-edged sword effect of work connectivity behavior after-hours on employee occupational mental health. *Chinese Management Studies*, 18(1): 265-285. <https://doi.org/10.1108/CMS-01-2022-0008>