



Social interactions in organisations: Investigating employee quiet quitting using spatial econometric methods

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ABSTRACT

Social interactions play a crucial role in organisations with intensive human contact, such as the hospitality industry. These interactions can be translated into crossover effects that affect employees' emotions and behaviours, which enlarge individual behaviours' impact on the whole organisation. However, these effects tend to be neglected across co-workers due to the difficulty of capturing and measuring using traditional methods. This study extends the crossover theory by incorporating co-workers' social interactions in understanding organisational behaviour, operationalised by introducing advanced spatial econometric methods into hospitality management and organisational behaviour studies. This analytical framework is applied to understand quiet quitting behaviour with the presence of social interactions from a new perspective. The findings confirmed the existence of crossovers in employees' quiet quitting behaviours within organisations. The generalisability of this methodological framework can make further contributions to understanding a wide range of organisational behaviours considering social interactions in the workplace.

1. Introduction

Social interactions in organisations refer to the extent to which employees interact mutually regarding trust, communication and coordination, and they can help members develop emotional connections with each other as crucial psychological resources (Chen & Huang, 2007). With the basic assumption that individuals interact in groups within an organisation, economists have explored the role played by a social network, defined as a social structure with nodes (i.e. individuals or organisations) that are tied by certain types of interdependencies (i.e. friendship, values or demographics), in forming interactions among agents (Bramoullé et al., 2009). In particular, the analysis of social interactions in social networks explores how individual incentives contribute to the network and, in return, how individuals are shaped by the network. Aligned with economists, organisational behaviour researchers are also interested in the influences among individuals (i.e. crossover). However, social interactions and their influencing mechanisms among individuals within social networks during abusive supervision, burnout and quiet quitting are latent and unobservable, making the investigation of social interactions more complicated. Although

examined in several studies (e.g. negative emotions when bystanders facing abusive supervision; Yu et al., 2022), the mechanisms and pathways of crossover among employees, as an inter-individual transmission of emotions, experiences and states (Brady, Hammer, & Westman, 2025; Chen et al., 2015), remain vague.

Most existing research on social interactions in organisational behaviour has relied on traditional methods, such as qualitative reviews (Pettersen, 2016) or self-reported survey-based measures (Leiß & Rausch, 2023), with analyses typically conducted at the individual level. Although informative, these approaches cannot fully capture how individual employees are influenced by their social networks or how these ties amplify organisational behaviours, such as quiet quitting, at the organisational level. Traditional quantitative techniques, including regression analysis and structural equation modelling, generally estimate the relationship between individuals' predictors and their own outcomes, assuming independence across employees. However, employee behaviour does not occur in isolation; daily social interactions allow behaviours to diffuse across colleagues (Cui et al., 2018), creating crossover effects that shape the wider organisational climate. Current approaches are limited in their ability to capture these dynamics and,

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therefore, risk underestimating the broader impact of latent individual-level behaviours on the organisation.

To unravel the complex social interaction effects on employees' quiet quitting, this study aims to introduce a spatial econometric modelling framework into the field of hospitality management for the first time to construct a generic analytical framework. Spatial econometric methods are prevalent in regional and geographical economic studies because of their ability to capture spatial interactions among geographical units (Jiao et al., 2020). Considering an organisation in which individual employees form social ties within groups (i.e. departments, working locations and accommodations) and their behaviours are subject to crossover effects, spatial econometric methods can be applied to model the crossovers among individuals within organisations (Hsieh & Lin, 2021), providing a novel perspective to consider the whole organisation when investigating individual behaviours (i.e. abusive supervision, burnout and quiet quitting) in organisations. Without considering social interactions and how these interactions affect the organisation as a whole, the influence of a change in individuals' abusive supervision, burnout and quiet quitting is underestimated when neglecting the transmission mechanism across individuals.

Thus, this study uses spatial econometric methods (i.e. theoretical foundation, model specification and estimation) to identify the potential benefits and applicability of the spatial econometric framework, which will bring additional insights into important topics in hospitality management. By applying this advanced framework, this study explores the role of social interactions in shaping quiet quitting behaviour within hotel organisations when social ties are present and how other behaviours (i.e. abusive supervision) and psychological status (i.e. burnout) interact with quiet quitting behaviour at the individual level and affect organisations as a whole through crossover effects in social networks. Aside from identifying crossover effects that exist through certain social ties, this study also reveals the mechanisms and pathways behind these effects.

2. Literature review

2.1. Social interactions and spatial models

Social interactions in organisational contexts encompass task-related collaborations, informal networks, workplace gatherings and interpersonal relationships within small groups (Chua, 2002). These interactions constitute a multidimensional construct comprising structural, relational and cognitive dimensions (Nahapiet & Ghoshal, 1998). The structural dimension reflects the configurations of social ties between individuals or units, measurable through network density and connectivity (Coleman, 1988) and significantly influences knowledge exchange flexibility and accessibility (Chua, 2002). The relational dimension encompasses trust and reciprocity developed through historical interactions (Von Krogh, 1998), while the cognitive dimension involves shared language, codes and meaning systems that enable mutual understanding (Cicourel, 1973). Collectively, these dimensions facilitate employee communication, coordination (Chen & Huang, 2007) and emotional connections that underpin organisational social capital (Cui et al., 2018). Previous literature has primarily focused on the relationship between social interactions and organisational-level features, such as knowledge sharing (Lim & Ok, 2021), organisational climate (Chen & Huang, 2007) and organisational support (Cui et al., 2018). However, how social interactions can be translated into behaviour crossovers at the individual level remains underexplored.

Theoretical frameworks for workplace social interactions are predominantly drawn from social exchange theory and classical economics. Social exchange theory emphasises reciprocal interdependence in dyadic relationships (e.g. employee-supervisor or employee-organisation), in which trust and mutual commitment govern resource transfers (Meira & Hancer, 2021). Conversely, classical economics frames interactions as utility-maximising behaviours within

social networks, in which peer effects—behavioural correlations among interconnected agents—emerge from self-interest (Blume & Durlauf, 2005; Hsieh & Lin, 2021). A persistent methodological challenge is the identification problem—distinguishing endogenous effects (behaviours influenced by peers' actions) from exogenous effects (behaviours driven by peers' fixed characteristics) (Hsieh & Lee, 2016). Traditional methods (e.g. surveys and interviews) lack granularity to disentangle these dynamics across complex organisational networks. Spatial econometrics addresses this limitation by formalising interactions through spatial weight matrices (Anselin et al., 2004), which map directed social ties (e.g. friendship) to systematically isolate endogenous and exogenous effects, enabling a rigorous cross-level analysis of behavioural crossovers.

To capture the social interaction effects, spatial econometric methods have been introduced into the field to address the key challenge in the previous literature on peer effects in identifying the correlation between the outcomes of individuals who interact with each other (Soetevent & Kooreman, 2007). Spatial econometric models originated in the field of econometrics and have been widely used in geographical economic studies and tourism economic studies (Jiao et al., 2020). The basic rationale of social interaction models is that individuals interact in groups within the workplace, in which behaviours are shaped by interpersonal exchanges. However, these interactions are not likely to represent most forms of relationships between individuals, and no single network can capture all the potential social ties of an individual. Thus, we consider that each individual has a specific reference group structured through a directed social network in which the other individuals' characteristics or outcomes in the group influence the individual's own outcome. Spatial econometric models can effectively capture these crossover effects, which emerge through interactions within social networks.

Hotel organisations provide a natural spatial context for this application because they are inherently social workplaces, with employees interacting in and across multiple groups. Within these groups, employees' behaviours are shaped by co-presence, collaboration and social exchanges, all of which create interdependencies and crossovers. Compared with traditional spatial analyses that use geographic units in the context of social interactions, this study treats individuals as proxies for spatial units and interprets 'distance' relationally. In other words, relational data (e.g. shared workspace, departmental membership or accommodation in this study) serve as a proxy for the likelihood and intensity of social interactions (Zhou, 2023). Furthermore, the temporal dimension of co-presence, which implies the time employees spend working together, provides an additional layer of proximity that can strengthen behavioural influence (Hillier et al., 1987). Thus, this study focuses on straightforward and objective social groups that are most relevant to workplace interactions and co-presence, namely primary working location, department and living in the hotel-provided accommodation. These dimensions capture the major venues of interaction within hotel organisations and provide a meaningful basis for analysing employees' social relationships.

Spatial econometric models offer three key advantages for analysing organisational social interactions. First, they resolve identification problems by explicitly distinguishing endogenous peer effects (e.g. behavioural contagion) from exogenous confounders using network-structured data (Anselin, 2009). Second, they quantify social multipliers—externality-driven aggregation—in which individual actions cascade through networks (e.g. training programme effects diffusing to untargeted employees) (Blume & Durlauf, 2005). Finally, they enable interdisciplinary rigour by synthesising human resource management, crossover theory and econometrics, thus advancing methodological precision beyond linear regression limitations. This approach facilitates the novel examination of crossovers in organisations.

2.2. Abusive supervision, burnout and quiet quitting

There are different types of social interaction effects according to the

social interaction literature (Manski, 2000), such as endogenous, exogenous and contextual effects. Endogenous social effects refer to the influence of others' outcomes (i.e. the dependent variable) on an individual's own outcome within a network. Exogenous effects capture the impact of factors external to the system that influence an individual's outcome through their own characteristics. Specifically, direct exogenous effects describe how changes within an individual's own independent variables affect the outcome. By contrast, contextual effects reflect how the exogenous characteristics of others within the network influence an individual's own outcome. These different types of effects are explored and identified in the context of hotel organisations to understand how quiet quitting, as the outcome variable, is shaped by abusive supervision and burnout, with the presence of social interactions and crossover effects.

2.2.1. Endogenous crossover effects of quiet quitting

Social interactions in human resource management (HRM) are broadly explained by crossover theory, which examines work-to-family and family-to-work conflicts in intimate relationships (Westman et al., 2001). Bolger et al. (1989) first distinguished crossovers between two situations: spillover and crossover. A spillover refers to an intra-individual process of stress from one domain of life (e.g. work) that carries over to affect another domain (e.g. home). Conversely, crossover is an inter-individual process in which the strain experienced by one individual is transferred to their partner at home. This theory offers a promising approach for shifting the focus from the impact of specific relationships on individuals' emotions to the examination of a broader range of relationships and their potential impacts (Bakker et al., 2006; Bakker & Xanthopoulou, 2009; Hakanen et al., 2014). Although this theory emphasises the crossover effect only on emotional status and limits the situation between spouses at the beginning, later studies have enriched this theory and verified that behaviours (e.g. knowledge sharing; Lim & Ok, 2021) can also be shared through other specific relationships (e.g. co-workers, supervisor and subordinates) with regular interactions (Chiaburu & Harrison, 2008).

Quiet quitting refers to employees fulfilling the minimum requirements of their job roles while disengaging from discretionary efforts, such as staying late, attending non-mandatory meetings or taking on additional responsibilities beyond their formal job description (Bolino et al., 2024). Contrary to its name, it does not involve resigning but reflects a psychological detachment from work. Regarding how co-workers react to quiet quitters, Samnani and Robertson (2025) argue that reactions are not a personal decision but are influenced by the relational climates they share, which refer to 'shared employee perceptions and appraisals of policies, practices and behaviours affecting interpersonal relationships' (Mossholder et al., 2011, p. 36). We argue that relational climates can be understood as social groups within the context of workplace interactions, which highlights the likelihood that employees' interactions with their colleagues shape and are shaped by others' quiet quitting through crossovers. According to Samnani and Robertson's (2025) findings, employees' reactions to quiet quitters are shaped by special social ties, which indicates that specific social interactions among co-workers have the capacity to shape other employees' quiet quitting by forming social groups. Therefore, aligned with crossover theory, we consider quiet quitting to be a working status that can be shared across different employees who have regular interactions.

Hypothesis 1. (endogenous crossover effect WY): Employees' quiet quitting is positively associated with co-workers' quiet quitting with whom they have interaction ties.

Interactions alone may not be sufficient for crossovers to occur, but they may be more (or only) likely to occur through specific relationships (Bakker & Xanthopoulou, 2009). For example, Hakanen et al. (2014) found that crossovers of emotional exhaustion occurred between dentists and nurses only when the relationships were friendly and frequent. However, most current research usually investigates the personal

connection as the tie (e.g. friendship or partnership), disregarding the objective connection. Although objective connections in the workplace do not emphasise emotional ties, frequent daily working interactions still potentially initiate crossover effects. Quiet quitting does not represent complete disengagement or withdrawal; rather, employees continue to fulfil minimum job requirements and are unlikely to disrupt their colleagues' work directly (Liu-Lastres et al., 2024). In other words, this behaviour refers to an *implicit* lack of employee engagement that is not significantly observable to others (Karrani et al., 2024). Thus, we emphasise co-presence with intensive physical and face-to-face interactions when we consider social groups, as these contexts provide more opportunities for employees to perceive and be influenced by the more subtle behavioural cues associated with quiet quitting. In our study, as quiet quitting is a passive personal working behaviour, we propose that employees who can be 'cross-overed' by quiet quitters must be the group that can see and realise the quiet quitters' working behaviour. Thus, we choose primary working location and department as the social ties.

This study also includes personal connections as a social tie. Unlike other industries, the hospitality industry usually offers accommodations for employees to ensure that hotels can operate smoothly all day. Instead of considering friendship and partnership, we choose employees living in the hotel-provided accommodation as another social tie because it represents a more frequent, objective and relatively private interaction outside of the workplace. Aligned with crossover theory, we propose that living in hotel-provided accommodation can be considered another social tie among employees outside of the workplace.

Hypothesis 1. (endogenous crossover effect WY): Employees' quiet quitting is positively associated with co-workers' quiet quitting with whom they (a) work in the same department, (b) share the same working location and (c) live in the hotel-provided accommodation.

2.2.2. Direct exogenous effects of abusive supervision and burnout

Conservation of resources (COR) theory (Hobfoll, 1989) posits that individuals strive to acquire, protect and retain valued resources (e.g. emotional energy, sense of control and social support), and it provides a robust framework for understanding quiet quitting. When resource loss threatens well-being, employees engage in defensive behaviours to conserve remaining resources. Based on this theory, abusive supervision and burnout can emerge as critical antecedents of quiet quitting.

Abusive supervision, which is defined as 'subordinates' perceptions of the extent to which supervisors engage in the sustained display of hostile verbal and nonverbal behaviours, excluding physical contact' (Tepper, 2000, p. 178), directly triggers resource depletion cycles central to COR theory. Supervisors who engage in humiliation, public criticism or unpredictable hostility create a chronic stress environment (Mackey et al., 2017). Employees subjected to such mistreatment expend significant psychological resources (e.g. emotional regulation and cognitive attention) to manage threat, navigate uncertainty and mitigate harm (Hobfoll et al., 2018). This constant resource drain leaves individuals with diminished capacity and to rationally conserve remaining resources by limiting effort to contractual obligations, manifested as quiet quitting. Thus, we argue that abusive supervision is positively associated with employees' quiet quitting. Accordingly, we posit the following hypothesis based on the exogenous effect.

Hypothesis 2. (exogenous effect – direct effect X): Abusive supervision directly and positively affects quiet quitting.

Similarly, burnout, conceptualised as a syndrome of emotional exhaustion, cynicism and reduced professional efficacy (Maslach, 2001), represents a state of profound resource depletion that directly precedes quiet quitting. According to COR theory, burnout occurs when resource losses chronically outweigh gains, leading to a defensive posture (Hobfoll, 2001). Employees experiencing burnout lack the psychological resources necessary to invest in extra-role behaviours or proactive

problem solving. Thus, quiet quitting becomes a functional adaptation: By strictly adhering to prescribed duties and withdrawing extra effort, employees halt further resource loss and create psychological space for recovery. Thus, we argue that burnout is positively related to employees' quiet quitting. Accordingly, we posit the following hypothesis based on the exogenous effect.

Hypothesis 3. (exogenous effect – direct effect X): Burnout directly and positively affects quiet quitting.

2.2.3. Contextual effects of abusive supervision and burnout on quiet quitting

Except for the endogenous crossover effect between quiet quitting and the exogenous effect within individuals, we argue that contextual effects also exist. Existing research has identified that abusive supervision not only influences the victims but also the bystanders, although they do not experience abusive behaviour from the supervisor (Yu et al., 2020). Witnessing or learning about a peer's mistreatment elicits vicarious stress (Rispen & Demerouti, 2016), as employees internalise the focal employee's anxiety, anger or helplessness through unconscious mimicry and emotional convergence (Barsade, 2002). This shared affective state fosters psychological withdrawal, which is a precursor to quiet quitting, as employees conserve cognitive and emotional resources by disengaging from extra-role efforts (Halbesleben & Bowler, 2007). Existing research has only examined how bystanders who witness or learn about abusive supervision can be influenced. However, based on crossover theory, we consider that abusive supervision has a larger impact scope—as long as employees have social ties, abusive supervision can influence their quiet quitting rather than the victim only. Although the social ties we identify here indicate a large overlap with bystanders (same department, same working location and same accommodation), our study still advances these findings from the social interaction perspective and empirically quantifies these impacts. Accordingly, we posit the following hypothesis based on the contextual effect of abusive supervision.

Hypothesis 4. (contextual effect – indirect effects): Abusive supervision perceived by employees affects co-workers' quiet quitting with whom they (a) work in the same department, (b) share the same working location and (c) live in the hotel-provided accommodation.

Current crossover theory sets a solid foundation for the intrapersonal effects of burnout (Bakker & Xanthopoulou, 2009), but whether an individual's burnout influences others' behaviour remains unclear. Existing research on employee burnout and its relationship with co-workers usually investigates how co-workers' interruptions (e.g. co-worker support; Fernet, Gagné, & Austin, 2010) influence employees' burnout. However, according to crossover theory, burnout, as a psychological status, can also be shared through specific social ties and possibly further influence others' quiet quitting. Unlike abusive supervision, the burnout status is not easily identified by others. Thus, we propose that the contextual impact of burnout requires a closer and more private social tie to transfer. Accordingly, we posit the following hypothesis based on the contextual effect of burnout.

Hypothesis 5. (contextual effect – indirect effects): Employees' burnout affects co-workers' quiet quitting with whom they (a) live in hotel-provided accommodation.

3. Methodology

3.1. Modelling procedure: spatial econometric model

Inspired by the econometric literature on the identification of spatial spillover effects across geographical units and peer effects within schools, this study proposes a new way to account for social interactions in the form of network linkage in a system instead of using a universal measurement. Introducing the spatial autoregressive (SAR) model into

social interaction studies (Lin, 2010) can account for the peer effects generated from social interactions within organisations. In the SAR modelling framework, two types of social interaction effects (i.e. peer effects) can be captured. Thus, individual economic activity can be modelled by the traditional SAR model within individual-specific social interactions and presented as follows:

$$Y = \lambda WY + X\beta_1 + \alpha + \epsilon \quad (1)$$

Here, coefficient λ denotes the level of endogenous effect from peers' decisions or activities (i.e. peer effects or crossover effects). W represents the dyad social interactions indicating the different types of social relationships within an organisation (Lee, 2007), in which individuals who belong to the same social working group are identified in the matrix specifications. Coefficient β_1 represents the own and contextual effects from exogenous individual characteristics. All the observations are pooled into one vector of Y and group characteristics that contain the observed correlated effects caused by the environmental variables shared by all individuals in the same group, and the unobserved common factors within groups are captured by α , representing the group fixed effects (Hsieh & Lin, 2021). ϵ captures the unobservable disturbance.

In the field of spatial econometrics, SAR represents one type of spatial model. By incorporating different types of spatial effects, different types of spatial models are identified (Elhorst, 2014). When modelling social interactions, aside from the outcome crossover identified from WY , contextual effects tend to exist in social interactions, reflecting the effect of other individuals' exogenous characteristics on their influence on an individual's outcome. These contextual effects can be captured by extending the SAR model to the spatial Durbin model (SDM), as in Equation (2):

$$Y = \lambda WY + X\beta_1 + WX\beta_2 + \alpha + \epsilon \quad (2)$$

The coefficients and notations remain the same as in Equation (1). Coefficients β_1 and β_2 represent the own and contextual effects from exogenous individual characteristics. Specifically, β_1 measures how a change in an individual's explanatory factors directly affects the outcome variable, while β_2 measures how a change in other individuals' explanatory variables affects the focal individual's outcome variable. In the SDM modelling framework, λ and β_2 imposed on the spatially lagged dependent variable (i.e. WY) and the independent variable (i.e., WX) represent two types of social interaction effects that are distinct in nature with different practical implications. Specifically, endogenous social effects λ measure how an individual's outcome is affected by their colleagues' outcomes, while contextual social effects β_2 capture the influences of fellow colleagues' exogenous characteristics. Endogenous effects generate a social multiplier, whereas contextual effects do not (Lin & Kwantes, 2015).

In addition to understanding the different types of effects in the context of social interactions, we also investigate how a change in the explanatory variables X affects the social network and the overall organisation while interacting with endogenous effects and contextual effects. According to the specification of the social interaction model within the spatial econometric framework, a change in the explanatory variable of an individual not only affects their dependent variable (i.e. direct effect) but also other individuals' dependent variables (i.e. indirect effect). The total effects are equal to the sum of the direct and indirect effects. The marginal in a spatial model is conditional on W , which can be calculated from the derivative matrix that solves the model. By rearranging Equation (2), the derivative matrix is defined as $(I - \lambda W)^{-1} * (\beta_1 I + \beta_2 W)$, with the diagonals identified as the direct effect and the off-diagonal average as the indirect effects. The average of direct, indirect and total effects quantifies the interactions between the endogenous effect in the dependent variable and other explanatory variables in the SDM model.

3.2. Social network interactions

The spatial relationship in spatial econometric models is identified through the spatial weight matrix. The estimation results are sensitive to the specification of the spatial weight matrix (Jiao et al., 2020). In standard econometric studies in the field of tourism demand modelling in which spatial econometrics have been widely applied (e.g. Jiao et al., 2021; Li et al., 2016), the spatial weight matrix represents the geographical relationship among destinations. Within organisations, individuals are treated as the 'geographical' units, and the 'distance or geographical relationship' across individuals is proxied by social network linkages. The identification of social networks determines the one-to-one relationship among individuals within the sample, which is reflected in the specification of the spatial weight matrix in spatial econometrics.

Based on the literature, we identify three types of social groups that can be considered a proxy for 'distance' across individuals within the same hotel. According to our assumption, employees working in the same department and the same primary working location and living in the accommodation offered by the hotel tend to have more social interactions with each other. Thus, we use department, primary working location and whether or not to stay in the accommodation offered by the hotel as criteria to form the network linkages within each social group indicated by three spatial weight matrices (i.e. $W^{department}$, $W^{primloc}$ and $W^{hotelAccommodation}$). Each W is an $N \times N$ matrix, where N is the number of observations in the sample. $W_{ij}^{department} = 1$ if employee i and employee j are in the same department within the same hotel, and 0 otherwise. $W_{ij}^{primloc} = 1$ if employee i and employee j are in the same primary working location within the same hotel, and 0 otherwise. $W_{ij}^{hotelAccommodation} = 1$ if employee i and employee j both live in the accommodation offered by the hotel within the same hotel, and 0 otherwise. Each W is normalised and employed in the SAR and SDM model settings to explore whether the influencing mechanism and the interactions between endogenous effects in the outcome variable and other explanatory variables are the same in different social interaction contexts and social groups with different network linkages.

3.3. Data collection

To test the applicability and robustness of the spatial econometric modelling framework in the field of human resource management and organisational behaviour, this social interaction framework was used in the context of hotel organisations in China. Hotel employees were recruited as survey participants in five hotels in China, with a wide spread of geographical locations. Around 400 participants were approached, and 222 valid online questionnaires were retrieved with the implementation of three attention-check questions in the survey. To comprehensively evaluate social interactions within each organisation, we tried to obtain survey results from as many employees as possible in each hotel. For the three hotels, we reached over 85 % of their total employees, which is representative of the overall social interaction environment within the hotel. While there is no published guideline specifically addressing sample size requirements for spatial models, we reviewed the economic literature using the spatial modelling framework cross-sectionally (e.g. $N = 29$, Coughlin & Segev, 2000; $N = 35$, Debarsy et al., 2015; $N = 35$, Elhorst, 2014; $N = 40$, Wiltshaw, 1996; $N = 35$, Yang, Doğan, Taşpınar, & Jin, 2025) as a reference to ensure the sample sufficiency. Furthermore, Lardeaux & Merly-Alpa, 2018 discussed the use of spatial econometric methods with survey data and concluded that significant spatial autocorrelation can be detected with samples above $n = 150$.

In the survey, demographical information and working details were particularly important in the context of this study to understand their social interaction patterns and form network linkages with other

colleagues within the organisation. The demographic questions regarding department and primary working locations were tailored for each hotel after consulting the hotel managers or senior management to obtain the most accurate information about each participant's demographic and working details.

The sample demographics are presented in Table 1. Hotels 1 and 2 have relatively smaller sample sizes compared with Hotels 3, 4 and 5, with most of the employees working in the hotels that completed the survey. The sample also has a fair distribution of age and gender. Among the respondents, 54.95 % worked in the same hotel for 1–5 years. Only a small percentage (7.66 %) of respondents had worked in the same hotel for more than five years. Regarding hotel industry tenure, 40.54 % of the respondents had worked in the hotel industry for more than five years. In terms of job title, most of the respondents were frontline employees (44 %), followed by supervisors (19.82 %).

3.4. Measurement

The original measurement was developed in English and was translated into Chinese using the back-translation method to maintain the original meaning of the scales (Brislin, 1970). To ensure accuracy, one bilingual author translated the original English scales into Chinese, while a second bilingual author back-translated them into English independently. These back-translated scales were then compared with the original English scales to resolve any discrepancies while preserving the original meaning. The descriptive statistics and correlation statistics are presented in Table 2. From the descriptive evidence, abusive supervision and burnout were both significantly and positively correlated with quiet quitting behaviour.

For quiet quitting, the participants were asked to report their quiet quitting level within one month on a five-point Likert scale (1 = 'strongly disagree', 5 = 'strongly agree'). To evaluate employees' perceptions of their quiet quitting, we used Karrani et al. (2004) 10-item scale. A sample item is 'I do only what is expected of me and nothing more'.

Abusive supervision was measured using Tepper's (2000) 15-item scale. A sample item is 'My supervisor tells me my thoughts or feelings are stupid'. The participants were asked to report their self-rated perceived abusive supervision within one month on a five-point Likert scale (1 = 'never', 5 = 'always').

Burnout was measured with one of the latest versions of the four-item scale (Lin et al., 2020). A sample item is 'How often do you feel "I can't take it anymore!"?' The participants were asked to report their self-rated level of burnout within one month on a five-point Likert scale (1 = 'never', 5 = 'always').

We conducted a series of analyses to confirm the measurement validity and ensure the robustness of the subsequent analysis. In particular, we implemented a three-factor confirmatory factor analysis model with an adequate fit ($\chi^2(372) = 1112.347$, CFI = 0.912, TLI = 0.904, RMSEA = 0.095, SRMR = 0.049), which fit the data significantly better than the two-factor model combining quiet quitting and abusive supervision ($\chi^2(374) = 2044.732$, CFI = 0.801, TLI = 0.784, RMSEA = 0.142, SRMR = 0.128), the two-factor model combining quiet quitting and burnout ($\chi^2(374) = 1724.508$, CFI = 0.84, TLI = 0.826, RMSEA = 0.128, SRMR = 0.085), the two-factor model combining abusive supervision and burnout ($\chi^2(374) = 1767.155$, CFI = 0.834, TLI = 0.820, RMSEA = 0.13, SRMR = 0.096) and the one-factor model ($\chi^2(375) = 2677.243$, CFI = 0.726, TLI = 0.704, RMSEA = 0.166, SRMR = 0.144). These results establish that these constructs are distinct. We also assessed the composite reliability and average variance extracted, both of which met the acceptable thresholds, thus supporting the reliability and validity of the constructs (Table 2). The factor loadings were all above 0.6, supporting the validity and reliability of using the three constructs within the research context (Appendix 1).

Table 1
Sample demographics.

Demographics	Frequency	Percentage	Demographics	Frequency	Percentage
Hotel			Hotel industry working years		
Hotel 1	23	10.36 %	Less than 1 year	35	15.77 %
Hotel 2	37	16.67 %	1–5 years	97	43.69 %
Hotel 3	50	22.52 %	More than 5 years	90	40.54 %
Hotel 4	59	26.58 %	Hotel working years		
Hotel 5	53	23.87 %	Less than 1 year	83	37.39 %
Age			1–5 years	122	54.95 %
18–24	63	28.38 %	More than 5 years	17	7.66 %
25–34	72	32.43 %	Job title		
35–44	47	21.17 %	Frontline employees	99	44.59 %
45–54	37	16.67 %	Supervisors	44	19.82 %
55–64	3	1.35 %	Department managers	47	21.17 %
Gender			General managers	5	2.25 %
Male	80	36.04 %	Others	27	12.16 %
Female	113	50.90 %			
Prefer not to say	29	13.06 %			

Table 2
Descriptive statistics and correlations.

Variable	Reliability	CR	AVE	Mean	SD	Quiet quitting	Abusive supervision	Burnout
Quiet quitting	0.902	0.937	0.616	1.826	0.688	1	0.307***	0.369***
Abusive supervision	0.943	0.982	0.800	1.294	0.468	0.307***	1	0.359***
Burnout	0.872	0.936	0.784	1.849	0.840	0.369***	0.359***	1

Note: *, ** and *** denote significance at the 0.1, 0.05 and 0.01 levels, respectively. Reliability was measured by Cronbach's alpha. SD represents standard deviation.

4. Empirical applications of the spatial econometric model

4.1. Crossover effects of quiet quitting

The hypotheses were tested using the estimation results of a series of spatial models with different specifications of network matrix, social interaction effects and with or without fixed effects. Hypotheses 1a–1c were tested to confirm whether the crossover effects of quiet quitting behaviour among different social groups (i.e. department, primary working locations and whether employees lived in the hotel-provided accommodation) existed using the SAR models, without considering any other types of contextual effects brought by other exogenous variables. Group fixed effects were incorporated into the SAR model to capture the potential correlated effects and both the observed and unobserved effects of the common factors faced by individuals (Lee, 2007) working in the same hotel, which tend to confound the crossover effects (Lin, 2010). As shown in Table 3, the model fits of all SAR models with different social network specifications improved with the incorporation of group fixed effects, as reflected by the smaller residual variance. The crossover effect magnitudes tended to be absorbed by the group fixed effects, controlling the hotel characteristics.

Table 3
SAR model estimation results.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
W	Department	Department	Primloc	Primloc	HotelAcco	HotelAcco
W*Quiet quitting	0.477***	0.394***	0.462***	0.378***	0.691***	0.635***
Abusive supervision	0.714***	0.693***	0.732***	0.702***	0.424***	0.45***
Sigma ²	0.423	0.4	0.435	0.411	0.355	0.351
Fixed effects	No	Yes	No	Yes	No	Yes
	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
W	Department	Department	Primloc	Primloc	HotelAcco	HotelAcco
W*Quiet Quitting	0.528***	0.453***	0.517***	0.44***	0.721***	0.68***
Burnout	0.441***	0.422***	0.45***	0.424***	0.262***	0.27***
Sigma ²	0.42	0.405	0.431	0.418	0.354	0.352
Fixed effects	No	Yes	No	Yes	No	Yes

Note: *, ** and *** denote significance at the 0.1, 0.05 and 0.01 levels, respectively. Primloc represents the network linkage formed from the primary working locations; HotelAcco represents the network linkage formed by the individuals who all lived in the accommodations offered by the hotel.

The coefficients of the W*Quiet Quitting measured the crossover effects of employees who work in the same department (i.e. Models 2 and 8) or in the same primary working location (i.e. Model 4 and 10) or live in accommodations offered by the hotel (i.e. Models 6 and 12) within each hotel. The endogenous crossover effects were significantly positive across all models, thus supporting Hypotheses 1a–1c, indicating that the individual employees' quiet quitting behaviour contextually affects that of other employees when they work in the same department and in the same primary working location and live in the accommodations offered by the hotel. Thus, crossover effects in quiet quitting behaviour were found to exist within the identified working groups.

4.2. Exogenous effects and contextual effects

After confirming the existence of crossover effects in quiet quitting behaviours within social networks, we further unravelled the influencing mechanism and feedback loop of how these crossover effects can be explained within the network. The SAR model was extended to the SDM model to account for the own effect and contextual effect of the explanatory variables on the dependent variable. Therefore, in addition to the change in the estimated endogenous effect parameter, we also

investigated how the other parameters were affected by this approach and their interactions with the endogenous effect (Hsieh & Lee, 2016). Abusive supervision and burnout were explored in this study as the explanatory variables of quiet quitting behaviour, with the assumption that both positively affect quiet quitting behaviour at the individual level. Hypotheses 2 and 3 are confirmed by the regression analysis results in Table 4 without considering social interactions within organisations.

4.2.1. Abusive supervision and quiet quitting: contextual effects

To test Hypotheses 4a, 4b and 4c to confirm whether abusive supervision also generated crossover effects on other employees' quiet quitting within the social networks we constructed, SDM was used to express the influencing mechanism with the existence of social interactions within the network. Similar to the SAR model estimation results, the SDM models with fixed effects generated a better model fit by controlling the observed and unobserved common factors within each hotel, with a more accurate mechanism being reflected in Models 2, 4 and 5. The crossover effects were overstated if the group common effects were not controlled, considering the potential existence of common variables affecting quiet quitting behaviour within each hotel overall.

Unlike in the SAR model, the coefficient of W*abusive supervision (Equation (2)) captured the contextual effect of abusive supervision received by one employee on the quiet quitting behaviour of other employees, which was consistently positive across all models. These findings indicate that abusive supervision not only directly affected the employee who suffered from abusive supervision but also indirectly affected other employees who worked in the same department and same primary location and who lived in hotel-provided accommodations, consistent with the findings in Yu et al. (2022) stating that abusive supervision affects not only the victims but also the bystanders in the workplace. When abusive supervision is taken into account, the crossover effects of quiet quitting behaviour among employees are mainly explained by the crossover effects from abusive supervision to quiet quitting behaviour. More intuitively, the crossover effects of quiet quitting originate from the indirect effect of abusive supervision on other employees' quiet quitting behaviour without being augmented by their own quiet quitting behaviour, as reflected by the significant coefficient of W*abusive supervision and the insignificant coefficient of W*quiet quitting behaviour. This finding further strengthens the enlarged impact of abusive supervision not only on the victim but also on other employees within the social network.

These enlarged effects can be quantified through the estimation of total effects, which consist of the direct effect of a change in an individual's abusive supervision on their own quiet quitting behaviour and the indirect effect of an individual's abusive supervision on other employees' quiet quitting behaviour within the same department, primary working location and accommodation offered by the hotel. Table 5 shows that the indirect effect is comparatively stronger when network relationships are classified based on the primary working location and whether employees live in hotel-provided accommodation. Thus, the crossover effects of abusive supervision on other bystanders tend to be more significant in working and accommodation locations. Compared with the total effects, the direct effects of abusive supervision on

employees' own quiet quitting behaviour are significantly smaller than the total effects after considering the social interaction effects and contextual effects, emphasising the need to address social networks when considering organisational behaviours, as failure to account for the social interaction effect will largely underestimate the impact of abusive supervision on the organisation as a whole.

4.2.2. Burnout and quiet quitting: contextual effects

The relationship between burnout and quiet quitting in the context of social interactions was examined through a series of SDM model estimations with different social network specifications of W. The direct effects were tested in OLS estimations (Table 4), while the SDM model further examined the contextual effect of an individual's burnout level on other employees' quiet quitting behaviours within different social networks. Similar to the above analysis, W*Burnout was incorporated into the SDM model to capture the potential contextual effects spreading to other employees. The models with fixed effects still demonstrated a better model fit compared with the models without fixed effects, indicating the importance of incorporating the group common factors with the model estimations. Models 2, 4 and 6 demonstrate the estimation results with the presence of group fixed effects by hotel. As shown in Table 6, the burnout level of individual employees spreads over to other employees within the social ties within the department, and living in the hotel-provided accommodation is reflected by the significantly positive coefficient of W*Burnout. However, this effect becomes insignificant when social groups are formalised by primary working locations. This can be explained by the nature of burnout, which is a relatively implicit emotion unobservable in the workplace, especially in the context of hotels with relatively more intensive interactions with customers (Yu et al., 2020). Thus, when considering individual burnout level as the explanatory variable of quiet quitting, the crossover effects of quiet quitting across social groups are explained by the behavioural crossover of the behaviour itself, instead of being transmitted within the network from the contextual effects of the burnout level, as in the earlier analysis of abusive supervision.

The overall effects of the individual burnout level on quiet quitting behaviour as a whole for organisations can be better understood through the estimations of direct, indirect and total effects. As shown in Table 6, all the effects are significantly positive, thus supporting Hypothesis 5a. Although the burnout levels of employees working in nearby locations do not directly affect other employees' quiet quitting levels in working locations, indirect effects still exist in the feedback loop in quiet quitting behaviour. More intuitively, the individual burnout level directly affects their own quiet quitting behaviour, and the change in quiet quitting level further affects other employees' quiet quitting level in the same primary working location. For employees working in the same department and residing in hotel-provided accommodations, the indirect effects of burnout are even higher than the direct effects, as the influence on other employees' quiet quitting behaviour is accumulated overall within groups, which can be considered social multiplier effects. Although the contextual effect of burnout is not universally significant in quiet quitting behaviour, the overall impact on the whole organisation remains enlarged through the significant crossover effects of quiet quitting behaviour.

5. Discussion

This study proposes introducing spatial econometric models into the field of human resource management, with crossover theory as the theoretical foundation, and the importance of accounting for social interactions in understanding the social multiplier effects of individual emotions and behaviour on the organisation overall. The spatial econometric modelling framework is first introduced into the field of organisational behaviour to obtain a better understanding of crossover effects through different types of social network linkages within organisations.

Table 4
Ordinary least square (OLS) model results without social interaction terms.

	OLS1	OLS2	OLS3	OLS4
Abusive supervision	1.3***	1.064***		
Burnout			0.871***	0.684***
Sigma²	0.608	0.51	0.684	0.574
Durbin-Watson	1.75	1.776	1.566	1.477
Fixed effects	No	Yes	No	Yes

Note: *, ** and *** denote significance at the 0.1, 0.05 and 0.01 levels, respectively.

Table 5
SDM model estimation results (abusive supervision as the explanatory variable).

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
W	Department	Department	Primloc	Primloc	HotelAcco	HotelAcco
W*Quiet quitting	0.364***	0.106	0.272**	0.073	0.454***	-0.186
Abusive supervision	0.633***	0.62***	0.613***	0.615***	0.321***	0.387***
W*Abusive supervision	0.253*	0.378**	0.409**	0.575***	0.454*	2.242***
Sigma ²	0.426	0.398	0.432	0.395	0.355	0.311
Fixed effects	No	Yes	No	Yes	No	Yes
Direct effects	0.68***	0.651***	0.651***	0.628***	0.342***	0.347***
Indirect effects	0.714***	0.594***	0.754***	0.639***	1.075***	1.065***
Total effects	1.393***	1.245***	1.405***	1.267***	1.417***	1.412***

Note: *, ** and *** denote significance at the 0.1, 0.05 and 0.01 levels, respectively. Primloc represents the network linkage formed from the primary working locations; HotelAcco represents the network linkage formed by individuals who all lived in the accommodations offered by the hotel.

Table 6
SDM model estimation results (burnout as the explanatory variable).

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
W	Department	Department	Primloc	Primloc	HotelAcco	HotelAcco
W*Quiet quitting	0.431***	0.339***	0.432***	0.35***	0.525***	0.203
Burnout	0.396***	0.38***	0.402***	0.388***	0.206***	0.219***
W*Burnout	0.147	0.179*	0.139	0.142	0.257*	0.571**
Sigma ²	0.425	0.407	0.435	0.421	0.355	0.344
Fixed effects	No	Yes	No	Yes	No	Yes
Direct effects	0.438***	0.408***	0.443***	0.414***	0.225***	0.227***
Indirect effects	0.518***	0.425***	0.51***	0.389***	0.747***	0.761***
Total effects	0.956***	0.833***	0.953***	0.803***	0.972***	0.988***

Note: *, ** and *** denote significance at the 0.1, 0.05 and 0.01 levels, respectively. Primloc represents the network linkage formed from the primary working locations; HotelAcco represents the network linkage formed by individuals who all lived in the accommodations offered by the hotel.

The spatial econometric modelling framework is employed in hotel organisations to examine the influencing mechanism of quiet quitting, with the presence of abusive supervision and burnout as explanatory variables in the context of social interactions. The existing approaches in prior research on quiet quitting tend to examine individual-level variables and their direct associations with personal outcomes (e.g. Pan et al., 2025; Zhang, 2024). However, these approaches focus exclusively on the individual level and do not extend to the potential effects on colleagues or the organisation more broadly. In such models, the impact of an individual's behaviour is estimated in isolation without explicitly accounting for the possibility that behaviours may diffuse through social interactions. By contrast, the spatial econometric framework employed in this study provides additional insights by capturing how individual behaviours influence others within their social networks, thereby extending the analysis from the individual to the organisational level. This allows us to identify crossover effects and to show that if social interactions are not considered, the organisational impact of latent behaviours, such as quiet quitting, is likely to be underestimated. A series of spatial models with different specifications in social networks and fixed effects were tested. Most of the findings were consistent with our hypothesis, which demonstrates the empirical applicability and robustness of the spatial econometric methodological framework in explaining organisational behaviours considering social interactions. Small variations were found in the estimation results of the models with different specifications of social groups, indicating that social interaction patterns are different when considering different social group categorisation criteria.

We also observed different influencing mechanisms of a relatively explicit behaviour (i.e. abusive supervision) and a relatively implicit emotion (i.e. burnout) in terms of the transmission path within social groups that affects the individual's own and others' behavioural outcome, as reflected by quiet quitting behaviour. The abusive supervision level suffered by one individual not only triggers their own quiet quitting behaviour but also affects that of other employees within the same social network (i.e. department, primary working location and the hotel-provided accommodation). This provides quantitative evidence of

the influence of abusive supervision on bystanders, thus supporting Yu et al.'s (2020) use of the qualitative approach. The relatively high magnitude of total effects of abusive supervision compared with the direct individual-level effects also emphasises the attention to abusive supervision within organisations, as it can create significant effects on not only the victim but also the social networks binding with the victim. However, the transmission patterns of burnout on quiet quitting within organisations between individuals are different. Individual burnout level does not directly affect others' quiet quitting behaviour. But, as burnout still significantly and positively affects individual employees' own quiet quitting behaviour, the existence of the significant crossover effects of quiet quitting behaviour also enlarges the influence of burnout on the whole organisation through social multiplier effects. The magnitude of the total effects is smaller than that of abusive supervision, thereby implying that the overall accumulated effects of explicit and observable behaviours, such as abusive supervision, are more significant than those of emotional reactions, such as burnout, on the quiet quitting behaviours of employees within the whole organisation.

5.1. Theoretical implications

This study extends crossover theory from work-family and family-work interactions to co-worker interactions to better understand the role social interactions play in shaping organisational behaviours among colleagues from a holistic perspective, evaluating the organisation as a whole. To adopt this holistic perspective, this study is the first attempt to introduce the spatial econometric model into the organisational behaviour literature to systematically examine the crossover effects among colleagues with social ties in the workplace, which tend to be overlooked in the previous literature but remain important according to crossover theory. The complexity of direct and transmissive relationships cannot be quantitatively captured without modelling social interactions, and the effect of individual behaviours tends to be underestimated without using such a holistic approach. Thus, this study makes significant methodological contributions by integrating the advanced modelling approach and interdisciplinary rigour from

econometrics into hospitality research. This generic framework enables a more comprehensive understanding of organisational variables, social interactions and the ways in which employees' behaviours and emotions diffuse across networks. This analytical procedure is transferable to broader workplace contexts, thereby offering valuable contributions to research on hospitality management and organisational behaviour. The methodological advancement establishes a foundation for future organisational behaviour research to systematically examine how different types of social interactions (e.g. formal and informal social ties) shape diverse latent and observable behavioural and emotional variables at the individual level and the transmission to the organisational level.

This empirical study exploring quiet quitting behaviour represents a generalisable illustration of applying the methodological framework in the context of organisational behaviour from a novel perspective, which also generates important theoretical implications. The theoretical framework for understanding quiet quitting and the two antecedents, with the presence of social interactions and crossover, was developed with the integration of crossover theory and COR theory. The complex crossover relationship of how abusive supervision and burnout influence quiet quitting behaviour in social networks was empirically revealed in the first attempts. Different types of social interactions were explored in different social networks. The findings enhance and broaden the current research map on abusive supervision, burnout and quiet quitting. To summarise, implicitly observable behaviour, such as abusive supervision, tends to create a greater level of enlarged effects on the overall quiet quitting level for employees in the whole organisation through social multiplier effects. Although these effects were smaller in the individual-level burnout effect as a psychological status, the necessity of incorporating social interactions and crossover effects was manifested by the significant total effects, including direct effects and contextual effects on quiet quitting. Thus, we conclude that in hotel organisations, behaviours and emotions generate different types of social interaction effects, with different transmission mechanisms affecting the outcome variables across employees within an organisation. This study extends the theoretical framework to understand behavioural and emotional crossover within organisations.

This study is also an example of understanding quiet quitting behaviour. Moreover, the spatial econometric modelling framework proposed in this study represents a generic framework to understand organisational behaviours in general with the presence of different types of social networks, which has a broader impact on advancing the theoretical understanding of social interactions and organisational behaviour.

5.2. Practical implications

In practice, this study has important practical implications for human resource management and organisational management. First, the importance of social interactions and social ties within organisations was emphasised through the theoretical framework identified in this study, with different types of social effects existing within organisations. The findings of this study further confirm the enlarged effects of negative behaviours (i.e. quiet quitting and abusive supervision) and negative emotions (i.e. burnout) on the whole organisation through different transmission mechanisms of social effects. The impact of negative behaviour (i.e. abusive supervision) generates greater influence on employees within organisations through social multiplier effects, which indicates the importance of paying greater attention to regulating employees' negative behaviours in the workplace for the senior management team. Therefore, organisations should highlight the importance of taking care of every individual employee in their daily operations to minimise negative crossovers within organisations.

Second, the specification of different social network groups also has important implications. For example, organisations should pay more attention to social interaction patterns within the department and

primary working locations and the allocation of working locations, considering the social multiplier effects of negative behaviours in the workplace. When delivering training or interventions on negative behaviours, HR should consider certain types of social ties and enlarge the audience to ensure the efficiency of training and protection.

Finally, the wide applicability of this generic methodological framework also provides new insights to the hospitality industry to evaluate the crossover impact of individual employees' behaviours and emotions on the overall organisation from a holistic perspective. Compared with traditional methods, this spatial econometric model allows us to capture and understand these latent, passive impacts among employees. A more comprehensive understanding of the organisation's dynamics with the presence of social interactions and network linkages could enhance overall organisation management. For instance, by identifying and influencing key individuals within social ties, organisations could disseminate new policies or change cultural norms with unprecedented efficiency and at a lower cost than traditional blanket approaches. This means that affecting change is no longer about broad, resource-intensive campaigns but about precise, data-driven interventions. Although this study only identified the crossover effects on abusive supervision, burnout and quiet quitting, the methodological framework can be applied more widely in daily operations. Employing this methodological framework uniquely in the hospitality and tourism sector could provide practitioners with a new perspective on organising employees with complex social ties.

5.3. Limitations and future research directions

This study is not free of limitations. First, our data were collected from only five hotels in China. In a different culture, social interactions and crossovers in the workplace can be different. Cross-national analysis could be a future research direction to comprehensively understand how social interaction patterns differ in different cultural backgrounds. Second, due to data limitations, the social groups used to define the spatial weight matrix were based primarily on employees' objective working conditions. As a result, individual-level informal connections were not captured, offering only a global estimation of crossover effects within organisations. Future research could adopt alternative classification methods to identify and explore a broader range of social groups to enhance the robustness of spatial econometric methods in capturing formal and informal social interactions at the individual level and to deepen our understanding of how these interactions shape organisational behaviour. Moreover, as hotel employees engage in extensive daily interactions with customers, these customer-related interactions could also be incorporated into future analyses of social dynamics and organisational behaviours. Finally, to minimise the potential for recall bias in data collection, future research should consider integrating the experience sampling method. By capturing data in real time within the participants' natural environments, this method can significantly improve the validity and precision of the results.

CRediT authorship contribution statement

Yitong Yu: Writing – review & editing, Writing – original draft, Investigation, Funding acquisition, Data curation, Conceptualization.
Xiaoying Jiao: Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization.

Impact statement

This study, entitled 'Social Interactions in Organisations: Investigating Employee Quiet Quitting Using Spatial Econometric Methods', makes an important theoretical and practical impact in hospitality management and organisational behaviour studies. This study extends the crossover theory into co-worker interactions, which is further operationalised by the cutting-edge spatial econometric framework to

account for the important crossover effects at the workplace. This new framework was applied in the context of hotel organisations to explore the influencing mechanism of quiet quitting, abusive supervision and burnout with the presence of crossover effects. Findings confirm the existence of significantly positive crossover effects in quiet quitting behaviour, transmitted through different social ties. Additionally, abusive supervision and burnout also generate enlarged effects on the whole organisation through different transmission mechanisms. The theoretical and empirical findings highlight the importance of recognising social interactions and crossover effects, as negative behaviours and psychological status propagate through different social ties within

organisations, providing new insights into human resource management and hospitality management.

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Appendix 1. Confirmatory factor analysis of factor loadings

Item	Loadings
<i>Quiet quitting</i>	
qq1	0.853
qq2	0.811
qq3	0.752
qq4	0.836
qq5	0.732
qq6	0.685
qq7	0.849
qq8	0.763
qq9	0.772
qq10	0.797
<i>Abusive supervision</i>	
as1	0.892
as2	0.922
as3	0.932
as4	0.918
as5	0.933
as6	0.671
as7	0.917
as8	0.891
as9	0.895
as10	0.914
as11	0.942
as12	0.931
as13	0.946
as14	0.921
as15	0.916
<i>Burnout</i>	
bo1	0.862
bo2	0.903
bo3	0.881
bo4	0.897

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