Use, Stay or Leave?
Relating STARA Competencies and Intention to Use to Hotel Employee Turnover Intention

by

Selim Bakir

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Approved by

Baker Ayoun, Ph.D., (Chair), Professor, Horst Schulze School of Hospitality Management
Martin O'Neill, Ph.D., (Member),Professor, Horst Schulze School of Hospitality Management
Yee Ming Lee, Ph.D., Assoc. Prof., (Member) Horst Schulze School of Hospitality Management

Abstract

Drawing on Person Job Fit and Person Organization theories, the present study aims to investigate the association between employee smart technology and AI competencies and turnover intention via the mediation of intention to use smart technologies. Furthermore, the moderation effect of perceived alternative employment opportunities (PAEO) was explored on the relationship between the intention to use technology and turnover intention. Data were collected from 547 hotel employees in the United States of America via Amazon's MTurk and analyzed using structural equation modeling. The results indicate that employee smart technology and AI competencies was not found to be significantly associated with employee turnover intention. However, the results from the mediation analysis showed that employee smart technology and AI competencies was positively and significantly associated with turnover intention through intention to use (ITU). The moderation analysis further confirmed that the positive relationship between ITU and TOI was enhanced when the perceived level of PAEO is high. The theoretical and practical implications of these findings are discussed.

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List of Abbreviations

AI	Artificial Intelligence
AR	Augmented Reality
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
COR	Conservation of Resources Theory
CR	Composite Reliability
ESC	Employee STARA Competencies
FC	Facilitating Conditions
IOT	Internet of Things
ITU	Intention to Use
ICP	Individual Competitive Productivity
PAEO	Perceived Alternative Employment Opportunities
P-J	Person Job
P-O	Person Organization
POQ	Perceived Overqualification
RMSEA	Root Mean Square Error of Approximation
SEM	Structural Equation Modeling
STARA	Smart Technology, Artificial Intelligence, Robotics and Algorithms
TLI	Tucker-Lewis Index
TOI	Turnover Intention
TR	Technology Readiness
VR	Virtual Reality

1. Introduction

Artificial intelligence (AI), which has the power to completely change the traditional hotel service delivery, has recently been used more widely in hospitality settings across the world (Li et al., 2019). AI-powered smart technologies and internet of things (IoT) are benefiting hospitality service encounters in many ways. They create new and improved customer experiences by providing new tools (e.g., robots and voice-activated service assistants), and boost productivity levels (Koo et al., 2021; Webster & Ivanov, 2019). Hospitality companies are increasingly becoming reliant on smart technology, AI, robotics, and algorithms, commonly termed as STARA by Brougham & Haar (2018). Uncertain times, such as the recent Covid-19 pandemic, lead the industry to place a greater importance on STARA to enable the business to continue efficiently and effectively. It is argued that such reliance on various forms of AI technologies and service robots will only continue in the future (Siderska, 2021; Zeng et al., 2020). However, technological advancements have led to an increased demand for different and more complex skills within the workforce than in prior decades (Deming, 2017; Autor et al., 2003). Employees who acquire smart technology and robotics competencies are less likely to be concerned about finding jobs.

Recent advancement in technologies have led to a gap between employee's current skills and the new set of skills that best align with these technological advancements. The adoption of STARA by businesses necessitates the development of new competencies and capabilities by the employees, such as technological expertise and digital skills. According to Jaiswal et al. (2022), employees will need to upskill themselves to comprehend and properly use STARA innovations in order to adapt to new and emerging forms of the workplace that is being transformed by the adoption of AI and robotics. These skills include the ability to know how to use STARA technologies, how to fix problems related to STARA technologies, and manage STARA. In this

vein, Employee STARA Competencies, hereafter (ESC) which refers to the ability of an employee to demonstrate expertise in STARA, help employees to complete their tasks more effectively and efficiently (Brougham & Haar, 2018).

ESC refers to the possession of skills and capabilities to use and manage STARA. Increasing level of STARA competencies and willingness to apply these skill sets is fundamental for hotels (Sarc et al., 2019). Hotel employees can benefit the organization when these employees demonstrate STARA competencies. For instance, the benefits of deploying STARA competencies include significantly increasing business efficiency, precision, productivity, time and cost savings, creating value and differentiation, enhancing service quality, consumer experiences, and organizational performance (Davenport & Ronanki, 2018; Bhattacharjee & Sanford, 2006).

On the other hand, possession of ESC may have potential negative consequences for the organizations. For example, awareness of these skills might lead employees to have a perception of overqualification, which is a type of person-job (P-J) misfit (Liu& Wang, 2012). A perceived misfit may in turn trigger turnover intention (Le et al., 2019; Harari et al., 2017).
The P-J fit theory stipulates that perceived overqualification might be interpreted as a type of misfit between the person and the job. Therefore, in the present study, it is argued that having ESC could motivate employees to consider and make alternative career choices. The possible link between ESC and turnover intention among hotel employees is yet to be examined. In consideration of this potential relationship, the first objective of this study was to investigate the relationship between perceived ESC and turnover intention among hotel employees.

Although it is evident that STARA technologies are benefiting the hotel industry in several ways (Li et al., 2019; Davenport & Ronanki, 2018; Jarrahi, 2018) several researchers have cautioned about the potential negative attitude towards use of technology (Złotowski et al.,

2017). Demonstration of negative attitudes towards use of technology and unwillingness to interact with STARA can be expressed for multiple reasons, such as a lack of trust in technology systems, perceived complexity, technology anxiety, employee replacement risk, and poor knowledge (Leung et al., 2023; Pizam et al.; 2022; Li et al.,2019; Ozturk et al., 2017). On the contrary, facilitating conditions (FC) such as technical knowledge, the existence of technical infrastructure in the organization and easy access have a positive influence on intention to use (Venkatesh et al., 2003). Similarly, perceived ease of use and perceived usefulness have a positive impact on intention to use technology. Therefore, the present study argues that STARA competent hotel employees will have an increasing level of intention to use STARA because of their abilities to use and manage STARA and being aware of its usefulness. As such, the second objective of the present study is to examine the association between ESC and intention to use STARA.

Furthermore, a natural question might arise concerning the association between intention to use and intention to leave. In other words, what choices will STARA competent hotel employee have after mastering STARA competencies at the current hotel? Will they favor the use STARA technologies at the current hotel or leave and use it in any other organization? In this regard, the present study proposes that when STARA competent employees are willing to use STARA, it will lead them to perceive a higher mis-fit with the current organization, which may eventually lead them to leave the organization. The third objective of the study is, therefore, to explore the association between intention to use STARA and turnover intention.

Moreover, employees who consider leaving their organizations actively start to explore an external alternative job. Alternative jobs were found to have direct and indirect influence on intention to quit (Griffeth & Hom, 1988). Employee perception of alternative employment opportunities is dependent on general labor market conditions (Ramlawati et al., 2021). For

example, when alternative employment opportunities are abundant, employees have a higher level of intention to quit. Conversely, a limited number of alternative jobs is linked to a lower level of intention to quit (Albalawi et al., 2019). As such, this study proposes that hotel employees who think their qualifications do not match with their jobs at the current hotel will first check the alternative job availability in the market overall. Perceived alterative employment opportunities then may shape hotel employees ultimate view on turnover intention. Accordingly, the present study aims to investigate the following research questions:

Turnover posits a major challenge for the hotel industry. Previous investigations studying turnover intention have examined many factors that may have an impact on turnover. Relevant studies have investigated the benefits of technology and the replacement risk. Factors impacting technology adoption were explored via the lens of the consumers. However, employee view on STARA use remains under investigated Furthermore, employee STARA competencies was largely ignored. Investigating of how competencies, intention to use and turnover intention are related will deepen the extant literature. The findings of the study will provide hotel management with insight on the role of employees STARA competencies in fostering or hindering use of STARA. Moreover, hotels strive to retain highly skilled workers. Thus, understanding STARA competent hotel employee's willingness to pursue their careers in the current organization will be benefiting the hotel in terms of managing employee retention.

2. Literature Review and Hypotheses Development

2.1 STARA Adoption and Job Outcomes

Service delivery robots, the web of things, online check-in/out, mobile keys, group booking software, chatbots, digital concierges, voice activated rooms, virtual Reality (VR) and

augmented reality (AR) are some of real-world applications of AI and robotics innovations in the context of hospitality service encounters. These applications have the potential to enable exceptional personalized hotel guest experiences right from the search to post-stay (Kuo et al., 2017; Tung & Law, 2017).

Indeed, STARA adoption offers plenty of opportunities for hotels and restaurants, such as driving better customer engagements and gaining higher competitiveness. Employees are also benefiting from technology-driven innovations at the workplace, such as offering different and diversified solutions, and enabling employees to work smarter and overcome challenging situations (Yablonsky, 2019: Jarrahi, 2018). However, even though AI has grown into an indispensable element of the hospitality industry, extant literature shows that AI-powered cutting-edge technology adoption also raises some challenges in the labor market. Such challenges include figuring out how utilizing these technologies could impact employment dynamics, jobs, tasks, wages, and employee's attitudes and behaviors (Lingmont & Alexiou, 2020; Oosthuizen, 2019).

Chui et al. (2015) argue that AI and robotics could replace 45% of the U.S. jobs. Similarly, according to Schwab (2016), about half of the jobs in the U.S are projected to be replaced by smart technology, AI and automation. Strikingly, these estimates collectively suggest that most of the jobs to be lost due to adoption of AI and robotics are expected to be in the service sectors, such as the hospitality and tourism industry. As such, hospitality employees are likely to perceive a potential threat to continuity of their jobs or might have an overall concern about the future existence of their jobs. That is, employees might feel job insecure due to stress created by perceived threat of job loss due to implementation of AI and robotics (Nam, 2019; Rosenblatt & Ruvio, 1996).

Similarly, the literature supports the notion that STARA awareness (perceived AI and robotics threat for replacement) is positively related to turnover intention. The current trend of AI and robotics adoption in hospitality industry appear to have caused employment uncertainty and a high level of turnover intention (Khaliq et al., 2022). It has been argued that STARA awareness has led to increased turnover intention, depression, and cynicism (Li et al., 2019). Research by Li et al. (2019) found that AI and robotic awareness is significantly associated with turnover intention among hotel employees. The increased implementation of new technologies, automation, and the use of service robots could make employees feel concerned about future existence of their current jobs.

Extant literature suggests that when organizations adopt new technology, employees feel job insecure (Koo et al., 2021). The study of Lingmont and Alexiou (2020) demonstrated that STARA awareness (the degree to which employees perceive a replacement risk that is caused by AI and robotics adoption) positively predicts perceived job insecurity. Furthermore, Erebak and Turgut (2021) addressed the concern of how technology affects employees' job insecurity. However, the study by Brougham and Haar (2018) did not find any evidence of higher job insecurity that is caused by AI and robotics adoption. On the contrary, the same study predicted that AI and robotics awareness was associated with less organizational commitment and career satisfaction, increased turnover intention, depression, and cynicism. Supporting these findings is the study by Alisic and Wiese (2020) which revealed that employees experiencing a higher STARA awareness are more likely to feel more anxious and job insecure and have lower selfmanagement and self-efficacy.

Earlier studies (e.g., Khaliq et al., 2022; Kong et al., 2021; Ding, 2021; Li et al., 2019; Brougham & Haar, 2018) that explored the association between hotel STARA adoption and job outcomes (such as job insecurity, job burnout, organizational commitment, career satisfaction,

turnover intention) has mainly positioned STARA as a replacement threat. However, how the employees respond to STARA at the hotels and the use of STARA are not well documented nor empirically explored. Moreover, employee smart technology and robotics competencies have been ignored by relevant studies. The study conducted by Ding (2021) explored restaurant employees' reaction to STARA and the study asserted a positive association between STARA job replacement risk and restaurant employees' competitive productivity. Furthermore, employees' work engagement mediated this association. Smart technology and robotics competencies were not included in the investigation. In summary, it remains to be revealed how will hotel employee's smart technology and robotics competencies impact the future prospect of their current job.

2.2. ESC and Turnover Intention

The implementation of STARA in the hotel industry has created new roles in the workplace. That, in turn, has necessitated that these employees upgrade their skills significantly. According to Hancock et al. (2020), in the digital era, almost one-third of employees would need to enhance their skills largely. It is believed that possessing these skills will enable employees to help improve business performance (Basadur, 2004; Ibarra, 1993). Addressing both favorable and unfavorable consequences of STARA in the hotel and restaurant industry, AI is expected to be a double-edged sword (Li et al., 2019; Huang & Rust 2018). While AI enables people to work smarter, which is likely to result in better business outcomes, it also necessitates the development of new competencies and capabilities, such as technological expertise and digital skills. That is, STARA adoption may result in a significant gap between employee's current skills and the new skills that are required to align with technological advancement. Yet, in some cases, organizations fall behind to align their employees with this pace of technological advancement.

Furthermore, employees will need to enhance their skills to properly use STARA innovations. Consequently, employees will embrace new form of the workplace that is transformed by AI and robotics adoption (Jaiswal et al., 2022). For this reason, businesses should ensure that their employees have technology competencies that are needed to run the business efficiently. Moreover, employees and AI will have to work hand in hand, which highlights the need to retrain, retain and recruit employees with skills that complement these technologies (Plastino & Purdy, 2018). While employees may need to be equipped with new skills, Lin et al. (2017) argue that acquiring new skills and competencies by employees may lead to the perception of overqualification (POQ), which refers to the extent to which individuals consider themselves as possessing more education, experience, and competencies than their current job requires (Maynard et al., 2006).

According to Zhang et al. (2020), about 25% of U.S. employees perceive that they have more skills, qualifications, and work experience than what is required for their jobs. In Turkey, according to Yesiltas et al. (2022), the hospitality and tourism industry has a more severe and high rate of qualification mismatch when compared to other sectors. In an experimental study, Zhao et al. (2021) found a positive relationship between POQ and professional identity threat. Research has further found a negative association between POQ and employee positive job attitudes, wellbeing, organizational commitment, and job satisfaction; and a positive relationship between POQ and counterproductive work behaviors (Hariri et., 2017). Maynard et al. (2015) found a higher level of career stress, and Erdogan and Bauer (2009) found a greater likelihood of turnover intention due to POQ.

Moreover, the person-organization (P-O) fit theory stipulates that the harmony between employee characteristics and the organization has a positive impact on the way employees perceive the organization (Feldman, 2011; Kristof, 1996). Simply put, this theory suggests that

employees' perceived overqualification creates a mismatch between the employees and the organization, which may lead to higher turnover (Kristof, 1996; George, 1992). Similarly, the person-job (P-J) fit theory argues that employees' perceived overqualification might be related to the employee's current job rather than overqualification within the organization. However, this perception may also lead to employee turnover due to lack of job opportunities within the current organization (Wong & Tetrick, 2017; Edward et al., 2006). The extant literature provides ample empirical evidence showing that perceived overqualification is linked to perception of lack of growth opportunities (Johnson & Johnson, 1999), cynicism and job meaningfulness (Lukstye et al., 2011), lack of job autonomy and variety (Lee, 2005).

Previous research suggests that P-E fit has a positive relationship with individual's job satisfaction, career involvement, organizational commitment, and a negative relationship with turnover intention (Bretz & Judge, 1994; Chatman, 1991; Hollenbeck, 1989). Furthermore, the study of Andela and van der Doef (2019) concluded that person environment fit has a positive impact on job satisfaction and negative impact on burnout and turnover intention.

The present study argues that ESC, which refers to the ability to use, manage, and fix the problems related to STARA, would be perceived as an overqualification by hotel employees. This, in turn, will lead them to feel under-valued, and consequently be dissatisfied with their current job (Wu et al., 2015). Thus, STARA competent hotel employees will consider making alternative career choices due to their understanding of discrepancies and misfit between their skills and their jobs and organizations. As such, the following research hypothesis is proposed:

H1: *There is a positive relationship between ESC and hotel employees' turnover intention.*

2.3 ESC and Intention to Use STARA

As the hotel industry increasingly implements STARA innovations in a wide variety of operational settings, hotel employees are expected to use technology tools in a variety of jobs.

Even though the adoption of AI and robotics could be seen as replacement for current hospitality jobs, AI is also regarded as a tool to augment tasks and improve the work (Lu et al., 2020; Nam, 2019). The quality of the work relies on how the hotel employees effectively use the hotel technology (Sunny et al., 2019). Effective technology usage was found to be dependent on employees' technology background and personal experience with technology (Walczuch et al., 2007). The extent to which this is well-executed depends on employees' willingness to employ and collaborate with the technology in day-to-day operations in the workplace. Hence, it is imperative to investigate the employees' attitudes toward working and using AI and related smart technologies.

Due to the increase in AI and robotic adoption, organizations are increasingly relying on human and AI-robotics collaborations (Bhargava et al., 2021; Dabbous et al., 2021; Dekker et al.,2017). When a hotel adopts a new form of technology or a service robot, employees generate favorable or unfavorable attitudes on whether to prefer or not prefer to interact with (use) AI and the robots. Some employees are more ready to adopt AI than others based on their individual perceptions and assessment of the new technological innovations (Talukder et al., 2008: Lewis et al., 2003). However, some employees who find it difficult and complex will step back from using AI. On the contrary, according to Burgess (2017), AI is a useful tool that augments and enhances the way work is performed. Using AI eases performing jobs by unburdening laborious tasks, and access to information. Davis et al. (1989) suggests that perceived usefulness, which refers to the extent to which using technology can enhance employees' performance, is one of the most prominent determinants of user acceptance, adoption, and intention to use AI and technology (Kulviwat et al., 2017).

Intention to use can be conceptualized as one's willingness to adopt any kind of technological innovation in the future (Dabbous et al., 2021). According to Lee et al. (2006), an

employee is more likely to accept the new technology if he or she believes the use and adoption of AI will increase effectiveness and efficiency and enable them to have more control over their jobs (Venkatesh et al., 2012). Employees who favor the usefulness of AI are likely to have the intention to use and benefit from AI and robotics. The intention to use AI and robotics is, in turn, positively associated with work engagement (Dajani, 2015). Likewise, employees who are engaged with STARA might gain familiarity and experiences with AI and robotics, which is expected to generate positive attitudes and positive feelings towards the use of STARA. As such, in the present study it is argued that ESC will lead employees to have positive attitudes towards using STARA.

As hotels are employing a variety of AI-powered technological innovations, research on change management suggests that less than one-half of the innovations fail (e.g. ; Neufeld et al., 2007; Ottenbacher, 2007; Aiman-Smith & Green, 2002) and only one-third of the projects are found to be successful (Nelson, 2005). Further, according to Adil (2016), innovation in the workplace necessities a higher level of change readiness among employees. Venkatesh et al. (2003) claims that the experience may impact or relate to technology readiness (TR). Blut and Wang (2020) found that the experience is positively related to TR. TR too was found to have an impact on intention to use (Ozseker, 2022). In addition, former studies confirmed the significant role of facilitating conditions on predicting perceived ease of use for technology integration (Habibi et al., 2019; Nikou & Ecomides, 2017). Additionally, facilitating conditions were found to be significantly associated with perceived usefulness (Habibi et al., 2019). As such, this study posits that STARA competent hotel employees will have a higher intention to use STARA due to readiness obtained by experience and due to facilitating conditions (e.g., access, knowledge). Thus, the following research hypothesis is proposed:

H2: *There is a positive relationship between ESC and hotel employees' intention to use*

STARA.

2.4 Mediating Role of Intention to Use STARA

The study by Raj and Seamans (2019) points out how the adoption of STARA technologies will push businesses to reshape and re-construct their organizations to a large extent. The same study addresses this 're-organization' as causing a shift in employee skillset requirements. Similarly, the study by Plastiono and Purdy (2018) highlights the importance to recruit talent with competencies that complement these technologies.

STARA technologies are transforming the nature of work, which has expedited the change in the required employee skills as employees have begun increasingly interacting with ever smarter technologies in the workplace (Bhargava et., 2021). Employers usually struggle to find and retain the talent needed. On the other hand, employees were found to be affirming mismatches in the form of under qualification or even overqualification (Bughin et al., 2018). Further, skill mismatches and lack of competencies were found to have adverse implications for business such as unfilled vacancies and lower and slower adoption of new technologies. However, having appropriate competencies prompts the willingness to adopt new technologies (Bughin et al al., 2018).

Hotel employees who are STARA competent might think that their skill sets are far exceeding what is needed for their current job or organization. Previous research has demonstrated the negative association between perceived overqualification on job satisfaction (e.g., Wu et al., 2015; Maynard & Parfyonova, 2013; Peiró et al., 2010; Erdogan & Bauer, 2009, Johnson et al., 2002; Khan & Morrow, 1991). It was also found that a positive correlation exists between turnover intention and employee perception of overqualification (Maynard et., 2016). The study by Vinayak et al. (2021) also confirmed the positive relationship between employees'

perceptions of overqualification and their turnover intentions. Moreover, employees' more advanced skills and knowledge serve as facilitating conditions, which lead employees to gain higher intention to use technology (Teo, 2008; Ngai et al., 2007).

However, poor facilitating conditions were found to set barriers to technology adoption (Lim & Khine, 2006). Technology readiness has a positive effect on the perceived ease of use and perceived usefulness, and consequently, technology readiness leads to intention to use and actual use (Yang et., 2021). Therefore, the present study proposes that ESC will increase intention to use and actual use. In a recent study, Pizam et al (2022) showed that complexity has an adverse impact on intention to adopt robotic technologies. In the present study, therefore, it is argued that hotel employees will experience less complexity of smart technologies due to STARA competencies, which in turn will trigger their intention to use them. According to Davis (1989), intention to use plays an important role in the actual use of new technology. Actual use and practicing, which are triggered by intention and competencies, is an effective way to improve any skill. Therefore, hotel employees' smart technology use will nurture their skills and increase STARA competencies. However, hotel employees may also perceive to be overqualified due to mastery gained by the increased use of STARA and STARA competencies, which may lead to higher turnover intention. Accordingly, the following research hypothesis is proposed:

H3: *Intention to use STARA will mediate the relationship between ESC and hotel employees' turnover intention.*

2.5 Moderating Role of Perceived Alternative Employment Opportunities

Hotels are employing new forms of AI-powered technological innovations, which led to an increased demand for different and more complex skills within the workforce than in prior decades (Deming, 2017; Autor et al., 2003). Hancock et al. (2020) points out the need of possessing new skills. However, upgrading skills might lead to the perception of

overqualification for their current jobs among employees due to higher levels of education, skills, and experience (Erdogan et al., 2011a; McKee-Ryan & Harvey, 2011). Further, overqualification was found to have a positive impact on employees to consider and make alternative career choices. Employers strive to retain the talent whose qualifications fit the job and the organization. Conversely, a poor Person-Job Fit (PJF) infers that employees' characteristics are not properly matching with the job; as such, such employees are expected to experience emotional exhaustion, stress, burnout, and eventually develop an intention to turnover (Kakar et al., 2021).

Employees' perception of alternative employment opportunities refers to the extent to which an employee perceives the availability of alternative, attractive and attainable employment offers in the business environment (Amankwaa & Anku-Tsede, 2015). Employees who work in jobs where they think their qualifications exceed the requirements or their qualifications do not fit the current job will have a higher intention to quit. In most cases, individuals check the labor market conditions and alternative employment opportunities; they search for new jobs before making the final decision to terminate their current jobs. Job leavers were found to have another job lined up before leaving (Albalawi et al., 2019; Mattila, 1974).

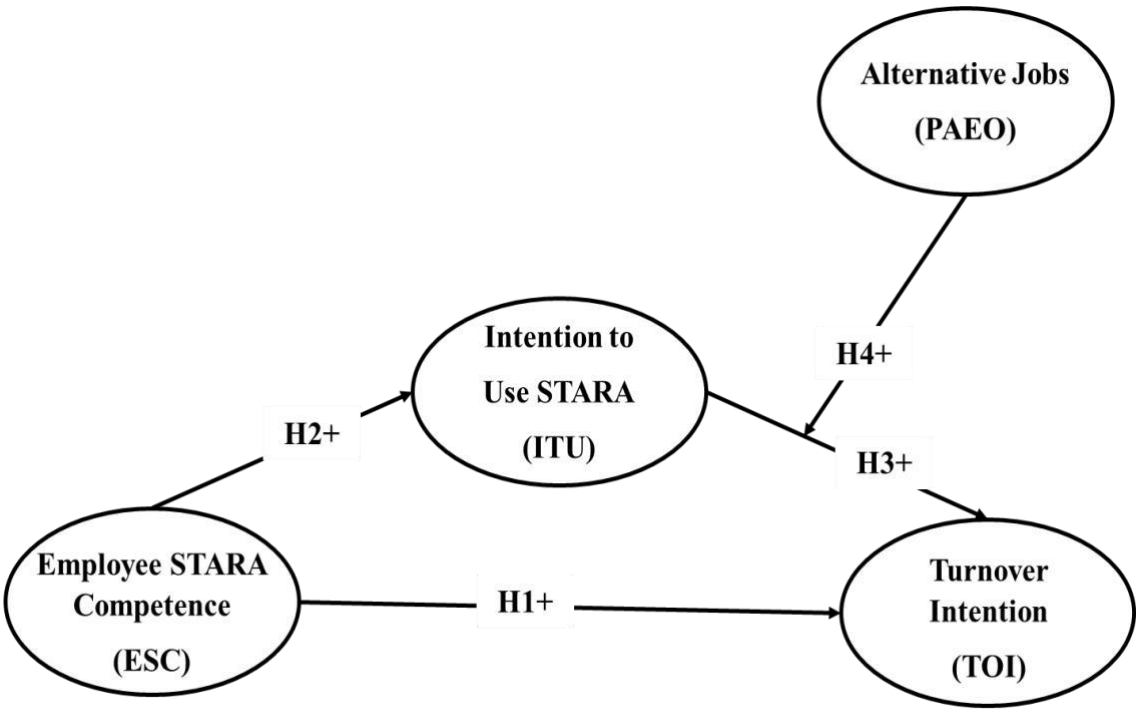
According to Nawaz and Pangil (2016), the availability of alternative jobs influences turnover intention. For example, when employees see plenty of alternative employment opportunities and receive offers from alternative employers, they make a cost-benefit comparison between their current job and the alternative ones (Price, 2001; Mobley, 1977), and then might engage in voluntary turnover. On the other hand, when external job alternatives are scarce, employees are less likely to turnover. External alternative jobs are positively linked with turnover intent (Ramlawati et al., 2021; Harvey & Martinko, 2009; Rahman et al., 2008; Ing-San & Jyh-Huei, 2006). However, Khatri et al. (2001) asserted a negative effect. Therefore, a higher

perception of overqualification, which is triggered by ESC and nurtured by use, may push employees to seek alternative jobs. The perception of alternative jobs is likely to impact employees' turnover intention. Thus, in the present study, perceived alternative job opportunities is considered as a moderator of the relationship between intention to use and turnover intention, as follows:

> ***H4*****:** *Perceived alternative employment opportunities will moderate the relationship between intention to use STARA and hotel employees' turnover intention. That is, this relationship is strengthened when hotel employees have a higher level of perceived alternative employment opportunities.*

Figure 1 shows the proposed conceptual model.

Figure 1. Conceptual Model



3. Methods

3.1. Measures

The survey used in the present study consisted of questions addressing employees' intention to quit their current jobs, alternative job opportunities, competencies regarding the use and management of STARA, intention to use AI and robotics, and demographics. The survey measurement items were adopted from previously validated scales with a slight modification to fit the context of the present study. All the main constructs were measured by using a 7-point Likert-type scale, ranging from 1 (strongly disagree) to 7 (strongly agree).

A four-item scale developed by Kelloway et al. (1999) was adapted to measure turnover intention. To measure employees' STARA competencies, four items were taken from the study by Yudiatmaja et al. (2021). An example of the items is "I understand how to use STARA technologies in my duty in this hotel". To measure intention to use STARA, the modified version of the four-item scale from Dabbous et al. (2021) was employed. An example of the items is "I look forward to the aspects of my job that require me to use STARA technology". To measure perceived alternative employment opportunities, a three-item scale adopted from the study by Albalawi et al. (2019) was employed. Sample items included: ""I can find another job doing exactly what I am doing now", or on the contrary, "If I have to leave this job, I will not have another job as good as this one within a little time".

3.2. Sample and Data Collection

Prior to the process of collecting data for the main study, a pretest was done with a sample of 40 hotel employees who work in several hotels in the US state of Alabama. Participants were asked complete the survey and provide feedback about the clarity of the questions and any other suggestions that may improve the design and content of the instrument.

The pilot test lasted 10 days. The data were collected in November 2022 through an online survey hosted on Qualtrics. The target population of this study was hotel employees in the United States who were at least 18 years old. After approval by the University's Institutional Review Board, the data collection process was conducted on Amazon Mechanical Turk (MTurk), a crowd-sourcing platform. In comparison to traditional convenience sampling methods, crowdsourcing platforms allow for more efficient data collection and provide a better opportunity to reach a more diverse population (Berinsky et al., 2017; Shank, 2015). Because the survey was based on the respondents' perception of AI and robotics competencies and intention to use, respondents were informed early in the study about the definition of STARA as suggested by Koo et al. (2021). Based on the feedback collected during the pilot testing, the respondents were provided with AI and robotics practical examples in the hotel industry. Finally, the respondents were asked to select what forms of STARA technologies i.e., Smart Technology (Smartphone applications, self-check-in/outs, mobile keys), Artificial Intelligence (AI chatbots, Voice activated room, facial recognition, Virtual Reality) that they use at their hotels.

The survey included attention check and screening questions to ensure the validity and reliability of the data. Respondents who failed the screening or the attention check questions were discarded from the analyses. For example, questions about the total hotel industry experience of the participant and how long they have worked at their current hotel were asked and the answers were compared. A participant who answered that they have worked for longer years in the current hotel than the total number of years in the hotel industry was eliminated. The remaining respondents were checked on giving the same answer for more than five items in a row.

A total of 547 valid responses were collected. As shown in table 1; Of the participants, 60% (*n*=467) were female, mirroring the composition of the employees in the hotel industry itself.

Moreover, 43.3% of the participants have 4-6 years of working experience (n=237), followed by 1-3 years of working experience (222, 40.6%). In terms of education, 85.3% have completed their bachelor's degrees (*n*=467) and 86.1% hold a managerial position (*n*=471). Most participants are from 25-34 years old (n=398; 72.8%) and fewer were older than 55 years old (n=34; 6.2%).

Table 1: Demographics of the research participants (N=547)

		F	%
Gender			
	Male	318	58.1
	Female	229	41.9
Age			
	18-25	47	8.6
	26-35	292	53.4
	36-45	106	19.4
	46-55	68	12.4
	56-65	27	4.9
	>65	7	1.3
Education			
	Some High school	2	0.4
	H. School Diploma	67	12.2
	Diploma (2 years)	11	2
	Bachelor's degree	399	72.9
	Graduate degree	68	12.4
Managerial Position			
	Managerial	471	86.1
	Non-Managerial	76	13.9

3.3 Data Analysis

The data cleaning was conducted through the Statistical Package for the Social Sciences software. R-4.2.1 was then utilized for hypotheses testing. The study first conducted confirmatory factor analysis (CFA) to evaluate the measurement reliability and validity.

Structural equation modeling (SEM) was then utilized to examine the hypothesized model using Lavaan package version 0.6–5. Bootstrapping technique (N = 5,000) (Preacher & Hayes, 2008; Rosseel, 2012) was applied in the mediation analysis. The moderating role of perceived alternative employment opportunities was tested via bruceR package (Bao, 2022).

4. Results

4.1 Measurement Model

The result of CFA demonstrated a good model ($\chi2$ (84) = 366.40, $p < .01$; Comparative Fit Index (CFI) = .93; Tucker-Lewis Index (TLI) = .91; Root Mean Square Error of Approximation (RMSEA) = .08; Standardized Root Mean Square Residual (SRMR) = .05). As shown in Table 1, the constructs' t-values of factor loadings were all statistically significant, confirming the convergent validity (Bagozzi & Yi, 1988). Common method bias was assessed through Harman's one-factor test (Chang et al., 2010). The result indicated that the four-factor model was significantly better than the one-factor model, dispelling the concerns of common method bias ($\Delta\chi2 = 487.69$; $\Delta df = 6$, $p < .01$).

Table 2. CFA Results (N = 547).

Construct	Item	Factor Loading	CR	α
ESC	ESC		.80	.80
	I understand how to use STARA technologies in my duty in this hotel.	.75		
	I can apply STARA technologies in my duty in this hotel.	.67		
	I know how to fix the problems of STARA technologies in this hotel.	.70		
	I can finish my job quickly using STARA technologies in this hotel.	.72		
ITU	ITU		.73	.71
	I have a high intention to use STARA technologies if my hotel adopts it.	.71		
	I intend to learn about using STARA technologies	.58		
	I plan to work with STARA technologies to perform my job if my hotel adopts it	.64		
	I look forward to the aspects of my job that require me to use STARA technologies	.60		
PAEO	PAEO		.80	.78
	If I quit my current job, the chances that I would be able to find another job which is as good as, or better than my present one is low.	.71		
	If I have to leave this job, I would not have another job a good as this one within a little time	.72		
	It would be not easy for me to find acceptable alternative employment"	.82		

TOI	TOI		.85	.86
	If the hotel adopts STARA technologies in the future, I will think about leaving this hotel.	.80		
	If the hotel adopts STARA technologies in the future, I plan to look for a new job	.74		
	If the hotel adopts STARA technologies in the future, I intend to ask people about new job opportunities.	.74		
	If the hotel adopts STARA technologies in the future, I do not plan to be in this hotel much longer.	.79		

Note: ESC: Employee STARA Competencies, ITU: Intention to Use,
PAEO: Perceived Alternative Employment Opportunities, TOI: Turnover Intention.

Composite reliability (CR) and Cronbach's alpha (α) were calculated to assess the instrument reliability. As all values ranged from .71 to.86, a good internal consistency of the measurements was demonstrated. The convergent validity was then tested by calculating Average variance extracted (AVE) values. Although the AVE value for ITU is smaller than .5, the CR for ITU is greater than .6, indicating an acceptable convergent validity (Fornell & David, 1981). A discriminant validity check was further implemented by comparing the squared pairwise correlations among the constructs and the AVE values for each construct (Fornell & Larcker, 1981).

4.2 Hypotheses Testing (Structural Model)

As shown in Table 2, age, education level, and position were significantly correlated with both ITU and TOI. Thus, they were controlled for in subsequent testing (Spector & Brannick, 2011). hypotheses H1, H2, and H3 were first examined through a saturated model via SEM. The model showed adequate fit to data: $\chi 2$ (81) = 283.88; RMSEA = .07; CFI = .93; TLI = .91, SRMR = .05. However, the regression path from ESC to TOI was not statistically significant (estimate = .07, p = .69), rejecting H1. Therefore, a full mediation model was further examined.

This model also exhibited a good fit: $\chi 2$ (82) = 284.02; RMSEA = .07; CFI = .93; TLI = .91, SRMR = .05. Results showed that ESC was positively associated with ITU (estimate =.89, p < .01), supporting H2. Moreover, ITU was positively associated with TOI (estimate =.74, p < .01) and mediation analysis showed that ESC was positively and significantly associated to TOI via ITU (estimate =.67, 95% CI [.61,.98]), supporting H3. Since that there was no significant decrease in the model fit between full mediation model and the hypothesized model (Δdf = 1, $\Delta\chi 2$ = .15, p = .70), the full mediation model, for the sake of parsimony, was adopted.

Table 3. Correlation coefficients squared pair-wise correlations, and variance extracted values

	ESC (X)	ITU (M)	PAEO (W)	TOI (Y)	CR	α
Experience	.11**	.09*	.00	.01		
Age	-.15**	-.18**	-.19**	-.21**		
Education	-.12	-.15**	-.12**	-.12 **		
Position	-.17**	-.20**	-.24	.21**		
ESC	**.50**	*.19*	*.09*	*.20*	.80	.80
ITU	.44**	**.40**	*.12*	*.19*	.73	.71
PAEO	.31**	.35**	**.57**	*.30*	.80	.78
TOI	.45**	.44**	.55**	**.61****	.85	.86

Note. *Variance extracted values are bold, squared pair-wise correlations are italic.* (Note. * p < .05. ** p < .01)

To examine H4, the moderating role of PAEO on the relationship between ITU and TOI, the normality of ITU, and PAEO were first examined. ITU, and PAEO were normally distributed as their statistical values of skewness and kurtosis were lower than 1 (George & Mallery, 2012). ITU, and PAEO were then centralized and included in the analysis. PROCESS macro-Model 1 was used. As shown in Table 3, the interaction between PAEO and ITU significantly affected TOI (estimate=.09, p < .05). The interaction accounted for the significant incremental variance of TOI (ΔR^2 = .01, p<.01). The TOI score was plotted at a combination of the ± 1 standard deviation (high and low levels) for both PAEO and ITU to understand the nature of the

interaction effects. As shown in Figure 2, the positive relationship between ITU and TOI was enhanced when the perceived level of PAEO was high, supporting H4.

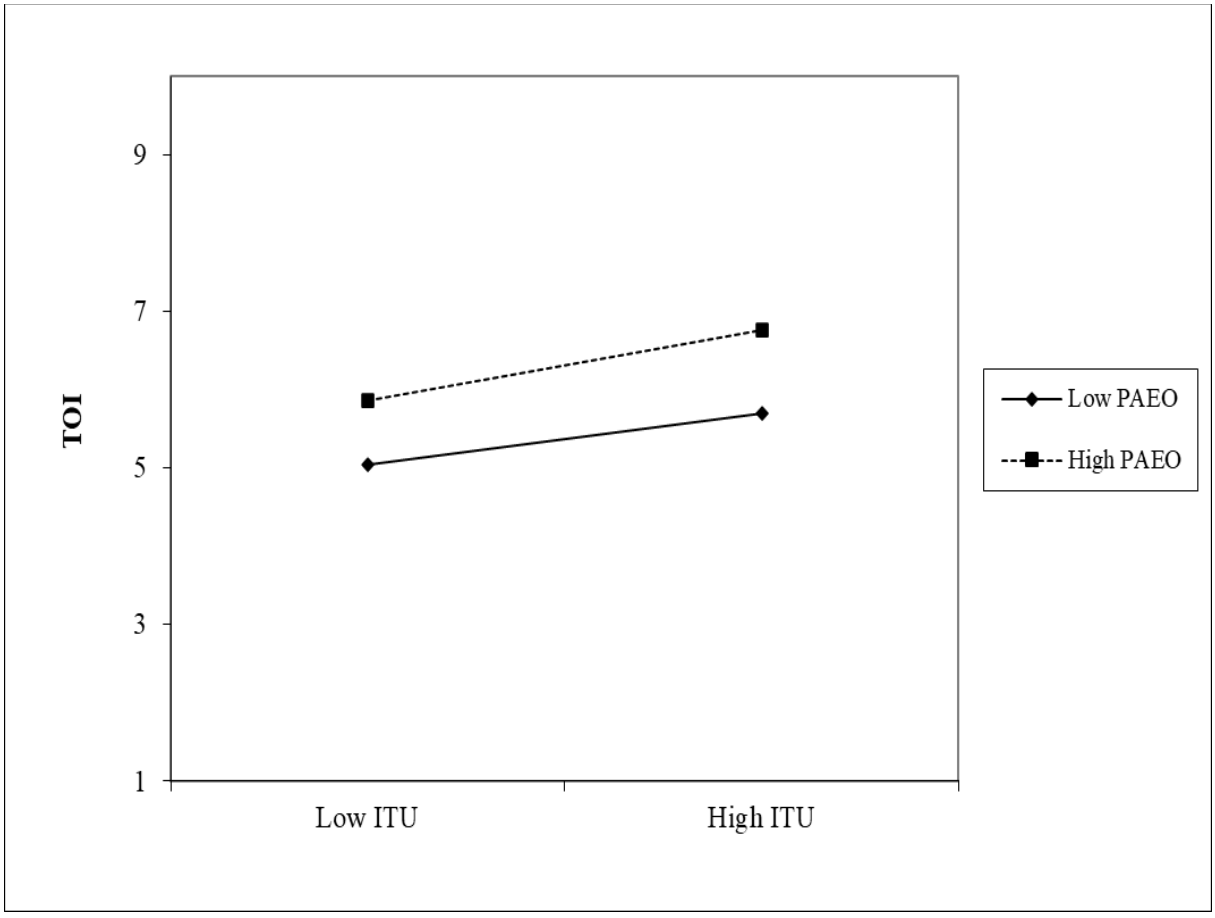
Table 4. Model Summary for Moderation Analysis

(Outcome: TOI; N = 547)

Effect	Estimate	SE
Constant	5.84**	.40
ITU	.55**	.05
PAEO	.50**	.03
PAEO* ITU	.09*	.03
Age	-.06*	.03
Education	-.00	.04
Position	-.04	.08

ΔR^2=.01, F (1, 540) = 8.84 ** (Note. * p < .05. ** p < .01)

Figure 2. Moderating effect of PAEO



5. Discussion and Conclusion

Considering the numerous unfavorable effects on employees, increased costs, and organizational performance, employee turnover intention continues to be an area of concern (Nuhn et al., 2019). Relative to other industries, the hotel business has a high turnover rate (Shi et al., 2021). Moreover, the adoption of STARA technologies is on the rise in the hotel industry (Ivanov & Webster, 2017). Yet, the literature on employee intention to use STARA technologies and employee STARA competencies is limited. As a result, the present study explored the main relationship between ESC and turnover intention, with an emphasis on employee's perception of overqualification. Previous research has found that P-J positively impacts employees job satisfaction (Peng & Mao,2015), and negatively affects turnover intention (Jung et al., 2019; Jung et al., 2013). However, the finding of the present study did not confirm previous findings wherein P–O fit and P-J fit were found to have an adverse impact on turnover intention (Jung et al., 2019; Jin et al., 2018; Jung et al., 2013). This outcome might be due to the fact that hotel employees' perceived overqualification in their current jobs might still persist in an alternative organization and thus such employees might not want to risk their current job. Conservation of resources (COR) theory stipulates that individuals strive to keep their valued resources (Hobfoll, 1989). As proposed by the COR theory, hotel employees might not want to risk losing their resources (in this case their current jobs) by leaving from the current organization as they might lose these valued resources (e.g., job, income, and other benefits). Though the new organization might be a better fit with their qualifications, it will take effort and time to compensate for the

sources that are lost during the transition (Saleem et al., 2021). However, one reason for not demonstrating a willingness to leave might be that hotel employees might think beyond the STARA competencies, and their interpersonal skills and soft skills might be more valued in their current position at the hotel. Moreover, the extant literature provides evidence showing that a competitive psychological climate might create a toxic workplace environment and hence employees prefer organizations where they might be perceived to be more competent (Iqbal et al., 2022; Shum et al., 2020). In the present study, employee competencies was measured based on employee's own assessment. A more objective assessment of the employees' STARA competencies might yield different outcomes. For example, an employee who is contemplating to leave for an alternative job in a different organization might be evaluated by the management team to assess his/her STARA competencies. Employee's perceived STARA competencies might negatively diverge from the objective measurement of his/her perceived competencies. Also, employee's performance and skills might be assessed based on their peers' competencies, which might be relatively higher. In this context, employees' might not feel comfortable quitting their jobs. Therefore, employees might not want to risk quitting their current jobs due to potentially hazardous outcomes resulting from competitive psychological climate in an alternative job (Brown et al., 1998).

The study further examined the mediating role of employee intention to use STARA. In line with the assumptions of the Technology Acceptance Model (TAM) and facilitating conditions (FC), the results have shown that STARA competent hotel employees have an increased level of intention to use. They tend to engage and use STARA more proactively, which may have nurtured their skills. Therefore, hotel employees who have higher STARA competencies and who also show higher intention to use these competencies were more likely to

leave their current jobs. That is, with higher STARA competencies and experience, employees are likely to feel unfit within their current organizations and hence tend to quit their jobs. Therefore, ESC indirectly impacted turnover intention.

The study further examined the moderating role of perceived alternative employment opportunities in the relationship between the intention to use STARA and intention to leave. Perceived alternative employment opportunities was found to strengthen this relationship.

5.1 Theoretical Implications

An increasing number of hotels are employing several forms of smart technologies and robotics into their day-to-day guest services operations. Although AI and robotics implementation for hotel service automation is now advancing at an unprecedented pace, very limited attention has been given to hotel employees STARA competencies. For example, previous studies investigating the relationship between STARA and job outcomes (e.g., job insecurity, and turnover) view STARA primarily as a replacement threat, a view that ignores employee interaction with STARA, their attitude towards use, and their skills. The present study, however, focuses on the facilitator role of STARA competencies and usage by employees, responding to the calls of the researchers regarding the need for exploration of employee technology competencies and technology use (Nam, 2019).

The findings of the current study reveal that employee perceptions of AI and robotics (over)qualifications is not a significant predictor of their intention to quit the current job at the hotel, and perhaps the industry overall, unless it is mediated by intention to use STARA technology in their current organization. These results contradict the results of earlier studies (i.e., Zhao et al. 2021). That is, although ESC did not significantly impact employees' turnover intention, intention to use STARA mediated the relationship between STARA competencies and turnover intention, suggesting that employees are likely to quit their jobs with increased intention

to use STARA competencies. Moderation analysis showed that alternative jobs have a significant positive influence on turnover intention, a finding that is in line with previous findings (i.e., Ramlawati et al., 2021; Dardar et al., 2012).

5.2 Practical Implications

The finding of the present study has important implications for hoteliers (employees and managers). Hotel employees need to understand the important role of their job-fit and organization-fit; they should consider these factors while selecting a job and a hotel to work.

Second, hotel managers should take into consideration the role of employee fit while cautiously executing the recruitment process. For example, hotel HR managers should clarify expectations and make employees understand job requirements and more importantly define the required skill set to efficiently execute the work. As ESC was found to motivate the use of STARA technologies, it is important for hoteliers to promote these skills (i.e., implementing training). Moreover, given the high costs associated with turnover intention, it is crucial for hotel managers to execute various measures to reduce turnover intention. Through these research findings, hotel managers should understand employee STARA competencies led to higher intention to use. The use of STARA led to a obtain higher levels of STARA skills which increase employability. Moreover, high employability is linked to job mobility. Therefore, it becomes more important and challenging for the hotels to retain the more talented employees. As such, hotels should assure that organizational support, such as career advancement opportunities, promotions, etc. is available to the talent. Organizational support makes the talent feel more appreciated and valued, which may result in lower intent to quit. Managers should promote ESC in a way that encourages employees to consider these competencies as a tool to increase

efficiency and productivity rather than an over-qualification that pushes them to leave their current job.

It is suggested that hotel businesses adopt smart technologies not only with the purpose of serving hotel guests and gaining a competitive advantage but also for internal use in the hotel business (i.e., employee training). Employee use of technology enables managers to view employee competencies and measure the performance of the technology as well. Implementation of smart technology and robotics is associated with a high purchasing and employee training cost. Consequently, understanding employee preference (whether to use or not) provides guidelines for managers to make decisions for future technology initiatives (Law & Jogaratnam, 2005). Finally, in the present study, employee perception of alternative jobs was found to have a positive influence on intention to leave. Therefore, hotel managers should keep in mind that the abundance of alternative jobs in the market appeals the employees, which in turn lead them to leave their current job. Thus, managers should employ strategies for increasing retention especially when plenty of alternative jobs to choose from exist. For example, increasing compensation and benefits, acknowledging talent, and providing development opportunities are effective strategies to help retain skilled employees.

5.3 Limitations and Recommendations for Future Research

The current research comes with certain limitations which may set the path for future researchers. First, the data were collected from a single country (U.S.), thus affecting the scope of generalizability of the findings. To assess the comparability of the results to other settings, future studies could include other countries with varying levels of workplace digitalization and automation. Second, data used in the analysis were based on measuring employee perception of STARA competencies from the viewpoint of the employees themselves. However, objective

measures of technology competencies or exploring managers' views on employee competencies might yield different results.

This study focused on the perception of the employees about their fit with the organization and the job. Future studies may include an alternative model with different mediators and moderators to explain the relationship between ESC and turnover intention in the hospitality industry. For example, in this relationship, the mediating role of employability could be investigated. In addition, organizational support and leadership style can be added as moderators.

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