

# Linking key antecedents of hotel information management system adoption to innovative work behavior through attitudinal engagement

Hotel  
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## Abstract

**Purpose** – The paper aims to examine the relationship between the key antecedents of hotel information management system (HIMS) adoption and innovative work behavior (IWB) with attitudinal engagement as a mediator.

**Design/methodology/approach** – Survey data were obtained from 297 full-time employees in five-star hotels in Uganda. With the help of Analysis of Moment Structures (AMOS), seven hypotheses were tested and analyzed using structural equation modeling (SEM).

**Findings** – Both perceived usefulness and perceived ease of use are significant determinants of IWB. The study also confirms attitudinal engagement as a significant predictor of IWB. Importantly, attitudinal engagement was found to be a partial mediator in both the perceived usefulness and the perceived ease–IWB relationships.

**Practical implications** – The study's findings will guide managers in formulating policies that promote employee display of vigor, absorption and dedication to work. Hospitality and tourism firms can now keep their workers abreast with the latest technology at work so as to help them exhibit engagement tendencies as well as generating new ideas for the organization.

**Originality/value** – The proposed framework provides a fresh theoretical explanation for IWB in hotels with perceived technology beliefs and attitudinal engagement as major drivers, hence contributing to the current state of knowledge. The study demonstrates that engagement acts as a link for the transfer of part of the contributions of both perceived usefulness (PUHIMS) and perceived ease of use of HIMS (PEUHIMS) into IWB.

**Keywords** Innovative work behavior, Attitudinal engagement, Perceived usefulness, Perceived ease of use, Hotel information management system

**Paper type** Research paper

## 1. Introduction

In today's increasingly dynamic and disruptive business environment, the extent to which employees adapt to work changes as well as generating innovative ideas has become



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essential for organizational survival (Duff, 2017; Hon *et al.*, 2016). Organizations worldwide are therefore looking out for employees who are able to contribute to effective organizational functioning through innovative behavior at work. To achieve this dream, establishments must not only recruit employees who are techno-savvy and emotionally intelligent but must also ensure that innovativeness at work is championed (Bani-Melhem *et al.*, 2018; Ozsungur, 2019). This is particularly crucial for the hospitality industry as it is now more characterized by rapid market shifts, proliferation of modern technologies and definitely predatory competition than ever before (Bani-Melhem *et al.*, 2018; Chen, 2011; Kim and Lee, 2013). In such a dynamic milieu, innovative work behavior (IWB) among employees becomes the cornerstone for organizational competitiveness (Bani-Melhem *et al.*, 2018; Chen, 2011).

IWB refers to actions that lead to ideas, procedures and products that are perceived as new but with the ultimate aim of enhancing customer experience (Okumus, 2019; van Zyl *et al.*, 2019). As such, astute hospitality managers invest in new information technology applications to induce innovative behaviors among their employees (Law and Jogaratnam, 2005; Valeri and Baggio, 2020). Indeed, flourishing hotels are garnering more business as a result of their abilities to generate, promote and mobilize support for innovation space, specifically through the adoption of new technologies such as hotel information management system (HIMS) and blockchain technologies (Bani-Melhem *et al.*, 2018; Stare and Krizaj, 2018; Valeri and Baggio, 2020). Certainly, the competitive landscape in the industry is human resource based, hence identifying imminent antecedents of innovative behavior among workers remains an important research agenda (Agarwal, 2014; Duff, 2017; Bani-Melhem *et al.*, 2018). To the best of our knowledge, relatively few studies have examined factors that affect IWB in the modern-day hospitality industry, particularly in a developing economy's perspective (Li and Hsu, 2016). This paper advances perceived usefulness and perceived ease of use of HIMS and employee attitudinal engagement (EAE) as key drivers of IWB in the hotel sector in Uganda.

Uganda was chosen because hospitality and tourism operations have become importantly critical to the national economy (Ministry of Finance, Planning and Economic Development, 2019; National Planning Authority, 2019). The total contribution of travel and tourism to gross domestic product (GDP) was US\$1,913.9 m in 2017 (7.3% of GDP), and total employment contribution (including indirect jobs) was 6.3% in the same period (World Travel and Tourism Council, 2018). Specifically, steady growth is evident in the accommodation and food service (i.e. the hospitality subsector) as revealed by 2.8% contribution to GDP in 2017/2018 compared to 2.7% in 2016/2017 and 2.6% in 2015/2016 (Uganda Bureau of Statistics [UBOS], 2018). However, according to Katongole (2018), while the hospitality and tourism industry features strongly in the national development plans, the sector has remained less exploited. Certainly, the industry has great potential to perform even better, but the major challenge seems to rotate around abridged innovative behavior among workers. This is probably due to employee disengagement (Changha *et al.*, 2020) and negative attitudes toward new technologies. Yet, modern technology is a major pull factor for both domestic and international tourists (Otengei *et al.*, 2017).

Comparable to many low-income countries, employees in Uganda, especially in the hotel subsector possess limited or completely no information and communications technology (ICT) knowledge, often with derisory skills (Law and Jogaratnam, 2005; Ter Hoeven *et al.*, 2016). Hotel workers in the country do not usually pursue new approaches with vigor, and as a result, they are often unable to factor in the novelty element and creativity during service provision (see Otengei *et al.*, 2017). This has perennially translated into undesirable outcomes including dominant service failures, and as frustration befalls, they become disengaged and at worst exhibit reduced IWB, leading to rampant job quits with many people ending up leaving the industry completely (Changha *et al.*, 2020; UBOS, 2016). More daunting is the fact that many hotel managers in the low-income economies, Uganda inclusive do not seem to appreciate the

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value of new technologies for the attainment of business strategic goals; hence, they seldom champion the adoption of ICT applications such as HIMS (Law and Jogaratnam, 2005).

The low rate of technology adoption has an adverse effect on employee engagement and innovative behavior at work (Dearing and Cox, 2018; Janssen *et al.*, 2016; Moyeenudin *et al.*, 2018; Rogers, 2003; Vella *et al.*, 2011; Wang and Qualls, 2007). This view is supported by many scholars who believe that investing in new technological applications leads to a multiplicity of positive outcomes (e.g. Moyeenudin *et al.*, 2018; Valeri and Baggio, 2020; Vella *et al.*, 2011). Besides, positive attitude toward a new technology can allow an extensive range of work styles, usually enabling employees to be more physically, emotionally and psychologically absorbed into work, and they can sometimes work outside regular schedules or at other preferred locations (Ter Hoeven *et al.*, 2016). Thus, borrowing from Davis (1989), this study focuses on employee perceptions of particular ICT application adoption beliefs, namely, perceived ease of use of HIMS (PEUHIMS) and perceived usefulness of HIMS (PUHIMS) as major drivers of IWB through EAE as a conduit.

Now, while IWB has received some attention in organizational research, our understanding of how it manifests in hospitality operations is still embryonic, particularly regarding its antecedents (Li and Hsu, 2016; Duff, 2017; Miao and Cao, 2019). There are several calls for further studies so as to offer more refreshing approaches to hospitality provision, especially on factors influencing IWB in different contexts (e.g. De Spiegelaere *et al.*, 2014; Scupola and Fuglsang, 2018). This study advances our knowledge in this area by bringing together PEUHIMS and PUHIMS (Davis, 1989) and an interesting concept of EAE (see Borst *et al.*, 2019; Christian *et al.*, 2011; Ismail *et al.*, 2019; Macey and Schneider, 2008; Newman *et al.*, 2010) as major predictors of the underresearched variable, IWB (van Zyl *et al.*, 2019; Miao and Cao, 2019) in a developing country's perspective. Using quantitative evidence from five-star-rated accommodation facilities in Uganda, the paper makes a modest contribution by examining the effect of PEUHIMS and PUHIMS on IWB, with EAE as a conduit. Thus, a model of IWB with the two antecedents of HIMS adoption and EAE as drivers is proposed.

## 2. Literature review and hypotheses development

### 2.1 Study variables in brief

**2.1.1 Innovative work behavior (IWB).** In this work, IWB refers to the premeditated formation, introduction or application of novel ideas within a group or organization, for the good of the group or the hotel for that case (see Janssen, 2000). It comprises three dimensions, namely, idea generation, idea promotion and idea realization (Janssen 2000). Idea generation is the stage where employees identify problems and generate new ideas to address these challenges (De Spiegelaere *et al.*, 2014). Idea promotion refers to support and recognition from others regarding new approaches or products (Hanif and Bukhari 2015). Lastly, the idea realization is the implementation of newly developed ideas by an individual, a group or entire hotel (Janssen 2000).

**2.1.2 Antecedents of hotel information management system (HIMS) adoption.** Technological innovations in the service sector have introduced new market places that offer access to underutilized accommodation facilities and other destination resources (Ampountolas, 2019; Valeri and Baggio, 2020). HIMS refers to an integrated and cooperating set of software-directed information technology supporting individual and/or organizational goals (Watson, 2007). It usually involves process automation in an organizational network (Valeri and Baggio, 2020). Here, technology adoption is used to mean a stage in which HIMS is accepted for use by an individual, group or entire hotel (Molino *et al.*, 2020). According to Rainer *et al.* (2007), an effectively adopted computer application assembles, processes, analyzes and circulates information for a particular purpose. Technology adoption is mainly determined by two beliefs: (1) perceived ease of use and (2) perceived usefulness (Davis, 1989;

Nor Redzuan *et al.*, 2016). Perceived ease of use is the degree to which employees believe that using a particular ICT application/system would be free of physical and mental effort (Davis, 1989; Moon and Kim, 2001; Sirirak *et al.*, 2011). Likewise, the concept of perceived usefulness refers to the extent to which a person believes that using an information technology (IT) application (e.g. HIMS) will enhance his/her job performance (Davis, 1989; Jebeile and Reeve, 2007; Venkatesh and Bala, 2008).

2.1.3 *Employee attitudinal engagement (EAE)*. Macey and Schneider (2008) clearly explain the various conceptualizations of employee engagement, namely, psychological state/attitudinal engagement, trait engagement and behavioral engagement. This paper focuses on EAE because it is considered more important in the literature than other perspectives (Newman *et al.*, 2010). In this work, EAE shall be used interchangeably with employee engagement. By EAE, we mean a constructive, gratifying, job-related mental state that is exemplified by vigor, dedication and absorption of the workforce toward achieving institutional objectives (Schaufeli *et al.*, 2002). Agarwal (2014) has attempted to explicate the three foundations of EAE: (1) vigor – feeling energetic, accompanied with mental resilience and readiness to work even in the face of complexity. (2) Dedication – a sense of significance, enthusiasm, inspiration, pride and pertains to strong involvement. (3) Absorption – being entirely concentrated and deeply engrossed in one’s work, i.e. one becomes insensate of time and has difficulties with detaching oneself from work.

2.2 *Social exchange theory, attitudinal engagement and innovative work behavior*

Social exchange theory (SET) by Blau (1964) is seen to be one of the most suitable theories in explaining employee-related attitudes and behavior (Andrew and Sofian, 2012). SET assumes that employment relationship is an exchange mechanism in which the employer provides resources, inducements and other indispensable attributes such as organizational policies, structures and systems in return for employee engagement and innovative behavior at work (see Anitha, 2014; Bakker and Demerouti, 2008; Gichochi, 2014). The theory is anchored on the principle of reciprocity, that is, one party’s behavior is contingent upon the other party’s actions (Cropanzano and Mitchell, 2005). Borrowing from McEwen (2011), engagement and subsequently innovative behavior result from how employees perceive and evaluate their work experience. We therefore hypothesize that when employees perceive HIMS as being easy to interface with and think that it makes them perform their duties better and faster, then they will feel a sense of consideration and will repay the organization by exhibiting engagement behaviors and innovativeness at work. Thus, the researchers posit that EAE and IWB are outcomes of PEUHIMS and PUHIMS (see Figure 1: The Theorized Model).

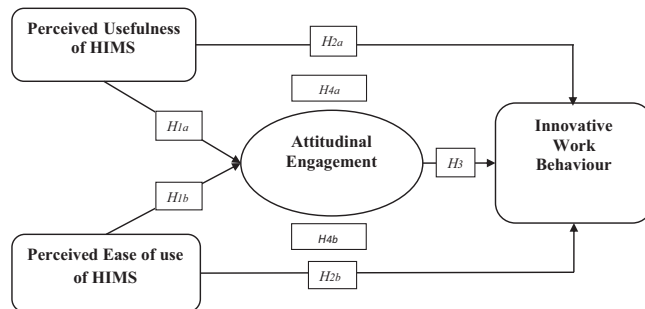


Figure 1. The theorized model

Source(s): Literature and Theoretical Review

Key: Hypotheses *H4a* and *H4b* represent mediated relationships

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### 2.3 Relationships and the theorized model

**2.3.1 Perceived ease of use, perceived usefulness and attitudinal engagement.** In order to enhance operational efficiency, practitioners in the hospitality industry have widely adopted and implemented ICTs in their businesses (Leung and Law, 2013; Valeri and Baggio, 2020). Specifically, it is commonly reported that new technology acceptance can help organizations to engage their employees (Molino *et al.*, 2020; Valeri and Baggio, 2020). As Wahid (2007) demonstrates, the technology acceptance model (TAM) by Davis (1989) emphasizes the link between perceived ease of use, perceived usefulness and employee attitude toward technology use. This study examines the effect of these two essential antecedents of HIMS adoption on attitudinal engagement among hotel workers in Uganda. Molino *et al.* (2020) in their Italian study found that the respondents' experience with new technology (i.e. perceived ease and usefulness) affected their work engagement (also see Valeri and Baggio, 2020). Similarly, Parry and Solidoro (2013) strongly demonstrate in their UK study that willingness to adopt new technology is associated with increased work engagement.

However, Parry and Solidoro (2013) also suggest that the use of new technology for engaging employees may not be successful unless the hotel already embraces open information system and participation, implying that an individual's decision to adopt or reject a new technology is affected by a number of variables (Dearing and Cox, 2018). Here, our focus is on two factors, namely, (1) the extent to which HIMS meets the significant social and/or learning conditions encouraging its adoption, i.e. ease of use and (2) the extent to which HIMS is considered useful in hotel operations, i.e. its usefulness (Bilbao-Osorio *et al.*, 2013). These factors are inherent workers' beliefs that are crucial in determining their attitude toward using a particular technology (see Joo *et al.*, 2018). In addition, some scholars have established that one of the most serious concerns regarding new technology adoption is in the usage, i.e. chances of spending lots of time on a less important issue can be hurting (Rowlands *et al.*, 2011). Thus, we hypothesize as follows:

*H1a.* PUHIMS will have a positive relationship with EAE.

*H1b.* PEUHIMS will have a positive relationship with EAE.

**2.3.2 Perceived ease of use, perceived usefulness and innovative work behavior.** Perceived ease of use and perceived usefulness have been found to be important factors for predicting behavioral intentions in several studies (Davis, 1989; Elkaseh *et al.*, 2016; Molino *et al.*, 2020; Sirirak *et al.*, 2011; Wang and Qualls, 2007; Valeri and Baggio, 2020). For example, Joo *et al.* (2018) found that perceived ease of use and perceived usefulness affected teachers' intention to use new technology. Wangpipatwong *et al.* (2008) reported that perceived ease of use and perceived usefulness were positive predictors of behavioral intention to use an e-government website. Other scholars have argued that a tendency to use new technology is a prerequisite for innovative behavior subject to its perceived ease of use and perceived usefulness (Lee and Lehto, 2013). However, the above studies and many others have not explicitly captured PEUHIMS and PUHIMS as precursors for IWB among employees in the hotel sector. Many calls have been made for further studies to investigate how innovation in hospitality and tourism services can be improved using ICT as an essential tool (e.g. Okumus, 2019; Stare and Krizaj, 2018; Scupola and Fuglsang, 2018). Thus, in response to calls for more research in this area, we hypothesize that

*H2a.* PUHIMS will have a positive relationship with IWB.

*H2b.* PEUHIMS will have a positive relationship with IWB.

**2.3.3 Employee attitudinal engagement (EAE) and innovative work behavior (IWB).** Theorized as an antecedent of extra-role performance (Harrison *et al.*, 2006; Macey and Schneider, 2008), this study conceptualizes EAE as a prerequisite for IWB. Bitchler *et al.* (2020) and Wang and

Chen (2020) highlight the role of aspects that are closely associated with staff-related attitudes and their link with job performance, especially innovative capabilities such as value addition and use of new technology in responding to customer demands and building relationships with them in order to offer memorable service experience. According to Sundaray (2011), engaged employees tend to be passionate about their work and will often be fully engrossed in their job resulting into innovativeness at work. This is supported by several earlier studies that have shown a positive association between EAE and IWB (Agarwal, 2014; Gichohi, 2014). For instance, Slatten and Mehmetoglu (2011) found that EAE is positively associated with IWB of hotel front-office employees in roles dealing directly with guests. Similarly, Rao (2016) found that engagement and innovation reinforce each other, implying that engaged workforce is more likely to be innovative and an innovative hotel tends to stimulate and connect highly with its employees. Recently, Ismail *et al.* (2019) and Wang and Chen (2020) confirmed a positive and significant relationship between EAE and job performance, in particular innovativeness at work.

The above works and others demonstrate that attitudinal engagement assumes a critical precursor role to creativity and innovation at workplace. However, while recent studies imply that IWB has received some attention, its development is still embryonic as an emerging psychological concept, more so in hospitality and tourism research (Ismail *et al.*, 2019). This calls for further investigation to better our understanding of the unknowns, especially regarding its essential drivers. Moreover, given the scarcity of IWB frameworks, data and material ambiguities and absence of adequate empirical evidence for hospitality firms, there is need for more context-specific studies to validate the existing assumptions. Thus, the following hypothesis is proposed:

*H3. EAE will have a positive relationship with IWB.*

*2.3.4 The mediating role of employee attitudinal engagement.* Many studies have confirmed a significant relationship between antecedents of technology adoption and EAE (e.g. Bilbao-Osorio *et al.*, 2013; Joo *et al.*, 2018; Moyeenudin *et al.*, 2018) and between determinants of technology adoption and IWB (Joo *et al.*, 2018; Lee and Lehto, 2013; Moyeenudin *et al.*, 2018; Teo, 2011; Wang and Qualls, 2007; Wangpipatwong *et al.*, 2008). Besides, some works confirm IWB as one of the outcomes of EAE (e.g. Agarwal, 2014; Gichohi, 2014; Rao, 2016; van Zyl *et al.*, 2019). In all, a positive association is reported in almost all the studies reviewed in the present study. According to Hair *et al.* (2010), the above relationships suggest that it is reasonable to test for the mediation effect of EAE. Indeed, Jose (2008) posits that any correlational study that does not address the mediating mechanism will end up with facts but with an incomplete understanding of the complex interconnections between variables under investigation. This (mediation effect) is the central philosophy, and the research direction this paper attempts to uphold in order to extend the existing body of knowledge in this area of research. We are motivated by the fact that studies that specifically link the antecedents of technology adoption, in particular PEUHIMS and PUHIMS to IWB with EAE as a mediator are still scarce and even more scarce in hospitality and tourism research (Wang and Qualls, 2007).

A few studies that have recently indicated that IWB has several antecedents lack adequate empirical support (see Ismail *et al.*, 2019; Bani-Melhem *et al.*, 2018; van Zyl *et al.*, 2019). In this study, the researchers strongly believe that if employees perceive HIMS to be simpler and faster to accomplish routine tasks, they will exhibit increased vigor, dedication and absorption to work. Ultimately, highly engaged employees usually experience positive emotions such as happiness, curiosity and passion and are likely to increasingly think of new and better ways of service delivery, hence will develop the psychological capability to fruitfully evoke extra-role behaviors such as creativeness and innovativeness at work (Bani-Melhem *et al.*, 2018; Eldor and Harpaz, 2016; van Zyl *et al.*, 2019). Basing on the above

discussion, a linear relationship clearly emerges between the main study variables as illustrated in the theorized model (Figure 1). Thus, we hypothesize as follows:

*H4a.* EAE will mediate the relationship between PUHIMS and IWB.

*H4b.* EAE will mediate the relationship between PEUHIMS and IWB.

*2.3.5 The theorized framework.* Figure 1 shows the hypothesized causal model of relationships between antecedents of HIMS adoption (i.e. perceived usefulness and perceived ease of use) and IWB, with attitudinal engagement playing a mediator role.

### 3. Materials and methods

#### 3.1 Research design, population and sample size determination

The study used a cross-sectional research design adopting a quantitative approach to data collection. Basing on the company records, the study population consisted of 1,300 full-time employees from the five-star hotels in Uganda, namely, Sheraton Kampala Hotel, Kampala Serena Hotel, Munyonyo Commonwealth Resort, Mbale Resort Hotel and Lake Victoria Serena Golf Resort and Spa. Data were collected between February and November 2019 using a close-ended, five-point Likert scale questionnaire. The employees constituted the unit of inquiry (UOI) as well as the unit of analysis (UOA). Out of 1,300 employees, a sample of 297 was obtained following the guidelines of Krejcie and Morgan (1970). However, only 208 questionnaires were complete and useable, making a response rate of 70%. Using proportionate and simple random sampling methods, the researchers ensured that all full-time employees from the five hotels were given equal opportunity to participate in the survey (Table 1).

#### 3.2 Construct measures

Existing scales by previous scholars were adopted. Unless otherwise indicated, all measures used scales ranging from 1, “Strongly Disagree”, to 5, “Strongly Agree”. For PUHIMS and PEUHIMS, ten items were used (see Davis; 1989). Sample items were “Using HIMS improves my performance” (PUHIMS) and “Learning to operate HIMS is easy for me” (PEUHIMS). Attitudinal engagement was measured using the Utrecht Work Engagement Scale (UWES) (Schaufeli et al., 2002). This includes three underlying dimensions: vigor (e.g. “I am willing to put in extra effort in my job”), dedication (e.g. “I am emotionally attached to my work”) and absorption (e.g. “I am habitually engrossed and carried away during work”). These were combined to create an overall EAE scale. Lastly, IWB was rated using the nine-item scale of Janssen (2000). Borrowing from de Jong and den Hartog (2010), the items were anchored on the scale: 1 = “never” and 5 = “always”. Sample items were “creating new ideas for difficult issues” (idea generation), “mobilizing support for innovative ideas” (idea promotion) and “transforming innovative ideas into useful applications” (idea implementation).

Hotels	Sheraton Kampala Hotel	Kampala Serena Hotel	Munyonyo Commonwealth Resort	Mbale Resort Hotel	Lake Victoria Serena Golf Resort and Spa	Total
No. of employees	350	260	243	232	215	1,300
Sample	80	59	56	53	49	297

**Source(s):** Company records

**Table 1.**  
Population distribution  
among the five-star-  
rated hotels in Uganda

## 4. Results

### 4.1 Common methods variance, multicollinearity and normality tests

The researchers conducted principal component factor analysis using the varimax rotation method. Using this *post hoc* procedure, the researchers attempted to detect whether common methods variance (CMV) was present. By suppressing factors with coefficients below 0.5, the study aimed at confirming whether a single factor would surface or one “general” factor would account for most of the covariance in the predictor and outcome variables (see Podsakoff *et al.*, 2012). Results indicate that this study does not materially have the problem of CMV (see Podsakoff *et al.*, 2012). Additionally, the determinant for all the variables was way above 0.00001, a sign of nonexistence of multicollinearity (Field, 2009). To test for normality of data, the authors used skewness and kurtosis levels. Skewness levels indicated that PUHMIS had (stat =  $-0.894$ ; SE = 0.169), PEUHIMS had (stat = 0.009; SE = 0.169), IWB had (stat =  $-0.738$ ; SE = 0.169) and EAE had (stat =  $-0.677$ ; SE = 0.169). As for kurtosis levels, PUHMIS had (stat = 0.460; SE = 0.336), PEUHIMS had (stat =  $-0.685$ ; SE = 0.336), IWB had (stat = 0.487; SE = 0.336) and EAE had (stat =  $-0.634$ ; SE = 0.336). In all cases, the absolute values (statistic) were less than three times the standard error (SE), implying normally distributed data (Field, 2009).

### 4.2 Reliability and validity

The confirmatory factor analysis (CFA) results, i.e. chi-square value of 104.888 with *p*-value of 0.000, root mean square error of approximation (RMSEA) = 0.076, normed fit index (NFI) = 0.915, Tucker–Lewis index (TLI) = 0.933, goodness-of-fit index (GFI) = 0.925 and comparative fit index (CFI) = 0.951 indicated that the model fits the data acceptably. The observed multiple regressions (standardized coefficients) better known as the  $R^2$  (Koufteros, 1999) were above 0.5, indicating item reliability (Bollen, 1989). Furthermore, the squared multiple correlations ( $R^2$ ) sometimes referred to as item reliability revealed how well the items measured the constructs, indicating that the respective observed factors/indicators (on PUHMIS, PEUHIMS, EAE and IWB) explained a respectable portion of the variance in each of the variables. The researchers assessed convergent and discriminant validity using NFI and average variance extracted (AVE), respectively. The model’s NFIs of above 0.90 and the AVE greater than 0.5 suggested adequate convergent validity (Hair *et al.*, 2010). Furthermore, the square root of AVE was higher than constructs correlations, indicating adequate discriminant validity (see Table 2).

### 4.3 Descriptive statistics and correlation analysis

The small standard deviations relative to the means, i.e. EAE (mean = 3.550, SD = 1.176), IWB (mean = 3.787, SD = 0.883), PEUHIMS (mean = 3.164, SD = 1.012) and PUHMIS (mean = 3.782, SD = 0.812), indicate that the calculated means were a replica of the actual population (Field, 2009). In Table 2, the Pearson product-moment correlation matrix among the study variables is presented to show whether or not there were associations (Field, 2009)

	1	2	3	4
PUHMIS (1)	0.875	0.216**	0.285**	0.328**
PEUHIMS (2)		0.850	0.382**	0.329**
EAE (3)			0.918	0.483**
IWB (4)				0.902

**Note(s):** \*\*correlation is significant at the 0.01 level (two-tailed); *narration:* IWB = innovative work behavior; EAE = employee attitudinal engagement; PEUHIMS = perceived ease of use of hotel information management systems; PUHMIS = perceived usefulness of hotel information management systems; the diagonal represents the square root of AVE

**Table 2.**  
Zero-order correlations and square root of AVE



as hypothesized in the literature review section. The results indicate that PUHIMS and EAE are positively and significantly associated ( $r = 0.285, p \leq 0.01$ ). Results also reveal that PEUHIMS and EAE are positively and significantly related ( $r = 0.382, p \leq 0.01$ ). The results further show that there is a positive and significant relationship between PUHIMS and IWB ( $r = 0.328, p \leq 0.001$ ). The findings also show a significant positive relationship between PEUHIMS and IWB ( $r = 0.529, p \leq 0.01$ ). Lastly, EAE is positively and significantly associated with IWB ( $r = 0.483, p \leq 0.01$ ).

#### 4.4 Structural equation modeling and hypothesis testing

The researchers further used structural equation modeling (SEM) to test the developed hypotheses. Following Anderson and Gerbing's (1988) guidelines, the researchers extracted several nested structural equation models (SEMs) to establish which model was the better fit of the data (Hair et al., 2010). Using Morgan and Hunt's (1994) criteria to establish which model fitted the data better, except for the percentage of hypothesized paths, the mediated model emerged with the higher NFI, better CFI and higher squared multiple correlations (SMC), implying a better fit of the data (Table 3). Thus, the authors proceeded to test the hypotheses using the mediated model (Figure 2). In H1a, the study sought to establish the PUHIMS–EAE relationship. Results in Table 3 indicate that PUHIMS is a significant predictor of EAE ( $\beta = 0.334, p < 0.001$ ). Thus, H1a is upheld. The researchers in H1b sought to establish whether PEUHIMS was positively related to EAE. Results reveal PEUHIMS as a significant predictor of EAE ( $\beta = 0.213, p < 0.01$ ), implying that H1b is supported. H2a sought to test the PUHIMS–IWB relationship. Results indicate that PUHIMS is a significant predictor of IWB ( $\beta = 0.178, p < 0.05$ ). Hence, H2a is supported. In H2b, the researchers sought to establish whether PEUHIMS was positively related to IWB. Results indicate PEUHIMS as a significant predictor of IWB ( $\beta = 0.248, p < 0.01$ ). Meaning H2b is supported. The study further sought to determine the EAE–IWB relationship in H3. The results indicate that EAE and IWB are significantly and positively associated ( $\beta = 0.371, p < 0.001$ ). We thus fail to reject H3.

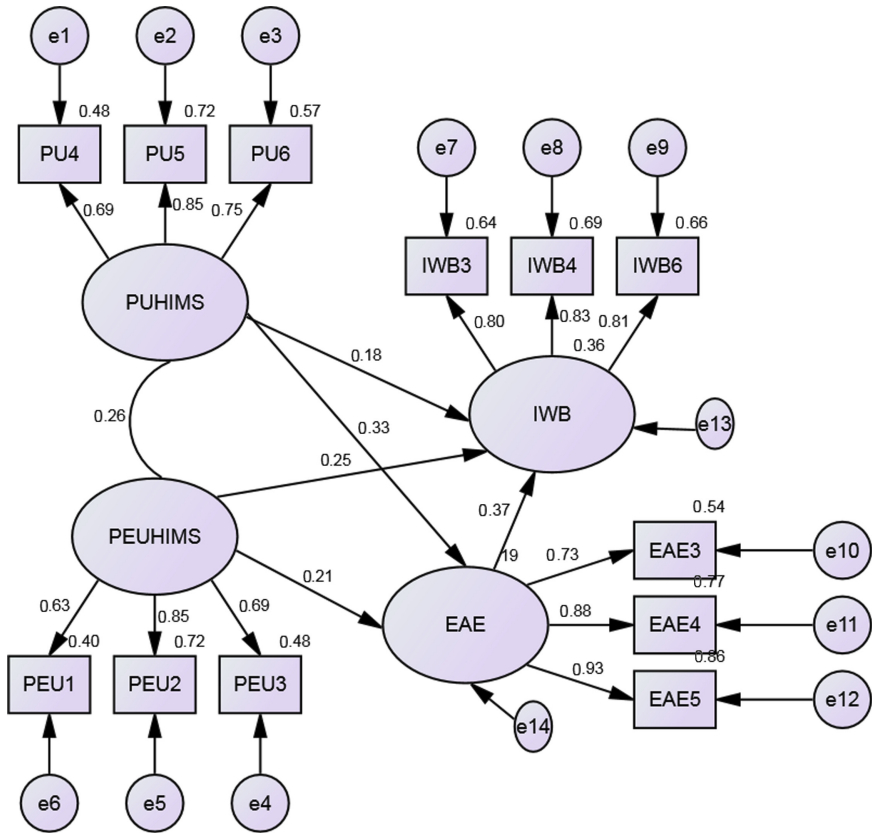
#### 4.5 Testing for mediation effects

The researchers further sought to test for mediation effects of EAE on the relationship between PUHIMS and IWB in H4a. Results in Table 4 indicate that the total effect is different

	Non _mediated model	Mediated model
PEUHIMS —> EAE		0.213**
PUHIMS —> EAE		0.334***
PUHIMS —> IWB	0.300***	0.178*
EAE —> IWB		0.371***
PEUHIMS —> IWB	0.326***	0.248**
$\chi^2$	164.220	104.888
Df	51	48
P	0.000	0.000
CFI	0.903	0.951
NFI	0.866	0.915
RMSEA	0.104	0.076
SMC for IWB		0.194
SMC for EAE	0.248	0.360

**Note(s):** Narration: IWB = innovative work behavior; EAE = employee attitudinal engagement; PEUHIMS = perceived ease of use of hotel information management systems; PUHIMS = perceived usefulness of hotel information management systems; \*correlation is significant at the 0.05 level; \*\*correlation is significant at the 0.01 level; \*\*\*correlation is significant at the 0.001 level (two-tailed)

**Table 3.**  
Results of competing  
models



**Note(s):** CMIN=104.888; df=48;  $p=0.000$ ; CMIN/df=2.185 GFI=0.925; AGFI=0.878; NFI=0.915 TLI=0.933; CFI=0.951; RMSEA=0.076 SMC for PUHIMS=0.066; SMC for IWB=0.194; SMC for EE=0.360 PUHIMS=Perceived Use of Hotel Information Management Systems PEUHIMS=Perceived Ease of Use of Hotel Information Management Systems IWB=Innovative Work Behaviour EAE=Employee Attitudinal Engagement

**Figure 2.**  
SEM-mediated model

from the direct effect (total effect = 0.302; direct effect = 0.178; indirect effect = 0.124) (see Table 4), implying a mediation effect exists. To establish significance of the mediation results, the authors performed bootstrapping by requesting 5,000 samples with bias-corrected confidence interval (CI) at 99%. The authors used a bootstrap approximation by constructing two-sided bias-corrected CIs for each of the associations (see results in Table 5). As for the PUHIMS → EAE → IWB association, the bootstrap test returned a percentile CI of 0.047 as the lower endpoint and 0.242 as the upper endpoint. Results also show that the standardized indirect (mediated) effect of PUHIMS on IWB is significantly different from 0 at the 0.01 level (i.e.  $p = 0.001$ ) (Table 4). Furthermore, PUHIMS did not lose all its predictive on IWB ( $\beta = 0.178, p < 0.05$ ) (Table 3), indicating a partial mediation of EAE exists on the PUHIMS–IWB relationship. Therefore, H4a is supported.

Similarly, H4b which sought to establish the mediating effect of EAE on the PEUHIMS–IWB relationship revealed total effect = 0.327, direct effect = 0.248 and indirect effect = 0.079

(Table 4), indicating that a mediation effect exists (Hair *et al.*, 2010). Bootstrap results for the PEUHIMS → EAE → IWB association returned a percentile CI of 0.018 as the lower endpoint and 0.174 as the upper endpoint. Results also indicate that the standardized indirect (mediated) effect of PUHIMS on IWB is significantly different from 0 at the 0.01 level (i.e.  $p = 0.008$ ) (Table 4). Furthermore, PEUHIMS did not lose all its predictive influence on the criterion variable IWB ( $\beta = 0.248, p < 0.01$ ) (Table 3), indicating a partial mediation of EAE exists on the PEUHIMS–IWB relationship. Hence, H4b is upheld.

## 5. Discussion and conclusions

### 5.1 Conclusions

The purpose of the study was to examine the relationships between the key antecedents of HIMS adoption and IWB with EAE as a mediator. Regarding H1a and H1b, results confirm that PUHIMS and PEUHIMS are significant predictors of EAE, implying that positive changes in perception of the usefulness and easiness of using HIMS yield positive changes in the employee exhibition of engagement at work. In other words, when the employees increasingly feel that HIMS enables them to accomplish tasks more quickly, this makes them not only to be enthusiastic about their job but also rises their willingness to put in extra effort at work. The study further affirms that hotel employees become more eager to put in more effort in their job when they realize that by using the HIMS their work performance is increased moreover using little energy. The researchers therefore recommend that it is very important for the industry employers to provide systems that can enhance employee effectiveness, for this will not only make the employees enthusiastic about what they do but will certainly get them more engrossed in their work. The findings are in line with Molino *et al.* (2020) who argue that new technology acceptance can help organizations to effectively engage their employees.

In H2a and H2b, the results show that IWB is enhanced by both PUHIMS and PEUHIMS, meaning that the more the employees find HIMS helpful in accomplishing their tasks quickly,

		PEUHIMS	PUHIMS	EAE	IWB
Standardized total effects	EAE	0.213***	0.334***	0.000	0.000
	IWB	0.327***	0.302***	0.371***	0.000
Standardized direct effects	EAE	0.213***	0.334***	0.000	0.000
	IWB	0.248***	0.178*	0.371***	0.000
Standardized indirect effects	EAE	0.000	0.000	0.000	0.000
	IWB	0.079**	0.124***	0.000	0.000

**Note(s):** *Narration:* IWB = innovative work behavior; EAE = employee attitudinal engagement; PEUHIMS = perceived ease of use of hotel information management systems; PUHIMS = perceived usefulness of hotel information management systems; \*correlation is significant at the 0.05 level; \*\*correlation is significant at the 0.01 level; \*\*\*correlation is significant at the 0.001 level (two-tailed)

**Table 4.** Standardized total, direct and indirect effects for the mediated model

		PEUHIMS	PUHIMS
Standardized indirect effects – lower bounds – upper bounds	IWB	(0.018–0.174)	(0.047–0.242)
Standardized indirect effects – two-tailed significance	IWB	0.008	0.001

**Note(s):** *Narration:* IWB = innovative work behavior; EAE = employee attitudinal engagement; PEUHIMS = perceived ease of use of hotel information management systems; PUHIMS = perceived usefulness of hotel information management systems

**Table 5.** Bootstrap results

the more they are able to generate novel ideas and solutions for problems that crop up. The results suggest that when employees perceive HIMS as useful, flexible and easy to interface with, this enables the generation of new ideas for the organization. The findings support earlier scholars such as Elkaseh *et al.* (2016) and Vella *et al.* (2013) who found both perceived ease of use and perceived usefulness of a technology as important drivers of behavioral intentions. In H3, results show a significant positive link between EAE and IWB, implying that enthusiasm and being emotionally attached to one's job creates an opportunity for hotel employees to discover novel ways of service provision. The study supports earlier works that suggest that highly engaged employees usually experience positive emotions such as happiness and interest and are likely to increasingly think out of the box, i.e. they tend to exhibit creativity and innovativeness at work (Bani-Melhem *et al.*, 2018; Eldor and Harpaz, 2016).

Concerning the central thesis, the study confirms that EAE partially mediates both PUHIMS–IWB and PEUHIMS–IWB relationships. These findings imply that EAE takes part of the inputs from both PUHIMS and PEUHIMS and translates them into IWB. Meaning that, positive changes that occur in innovative behavior as a result of PUHIMS and PEUHIMS are partly wiped out with the introduction of EAE. On the basis of the above results, the study demonstrates that PUHIMS and PEUHIMS influence IWB both directly and indirectly through EAE. By testing the mediation effect of EAE, this study deviates from earlier works which only examined the direct relationships between PEUHIMS and PUHIMS with either engagement or innovative behaviors, making this a novel study. The present study corroborates the argument by Jose (2008) that correlational studies that do not address mediating mechanisms tend to leave researchers with an incomplete understanding of phenomena.

In conclusion, when employees perceive HIMS as easy and useful, they will have the psychological capacity/motivation to be absorbed and dedicated to work. These employees will then be able to generate new ways of improving their role performance including finding simpler and faster means to complete routine tasks, herein interpreted as IWB. As such, we confirm through this study that EAE acts as a mediator (partial) through which PEUHIMS and PUHIMS induce positive outcomes on IWB in the hotel sector. In other words, IWB may not be completely achieved unless workers are clear about the usefulness and ease of use of HIMS, which then gets them absorbed, dedicated and energetic at work and in the end generate new ideas for the organization.

### *5.2 Practical implications*

Practically, the study suggests that PUHIMS and PEUHIMS wield influence on both EAE and IWB in the hotel sector in Uganda. Hotel managers should therefore establish policies and initiatives that promote practices which enable increased appreciation of both usefulness and ease of use of HIMS if they are to realize EAE and IWB among their workers. Accordingly, employers in the industry in Uganda need to keep their employees abreast with the latest ICT so as to help them generate new ideas for the organization. Hotel managers in Uganda can pursue this agenda by observing the key elements of technology adoption beliefs and EAE that are critical in enhancing IWB as revealed by this study. In particular, human resources (HR) managers need to explore potential policies that can enhance use of HIMS for EAE and IWB to prevail. They can attach annual appraisals to both abilities to use the latest system in the establishment and the resultant innovations thereof. This will make the employees get involved not only in knowing but will also interest themselves in making use of the available system.

Inviting ICT gurus to train the employees will go a long way in making easy the use of HIMS, leading to increased engagement of employees and innovativeness at work. Also, attaching financial and nonfinancial awards will encourage employees to exhibit engagement tendencies and subsequently generate novel ways of solving customer problems using the

latest system in the hotel. In all, hotels must attract and retain employees who are capable of learning and using modern information systems so as contribute to effective organizational functioning through innovative behavior at work. This implies that for the employees to demonstrate engagement and innovative behavior at work, it is imperative that managers guarantee ease of use of HIMS as well as sensitizing staff about the usefulness of the system.

### 5.3 Theoretical implications

The study assembles a model that takes into account organizational dynamics by expounding on the key tenets of SET using practical logic. Building on the assumptions of SET, the study validates PEUHIMS, PUHIMS and attitudinal engagement as major ingredients in championing IWB among employees in the hotel industry. Thus, the proposed framework provides a fresh theoretical explanation for IWB in the context of hospitality and tourism firms, hence making a significant contribution to existing body of knowledge in a developing country's perspective. Specifically, the paper makes better our understanding of EAE as a (partial) mediator in the PUHIMS–IWB and PEUHIMS–IWB relationships. The study demonstrates that EAE acts as a link for the transfer of part of the contributions of PUHIMS and PEUHIMS into IWB. Plausibly, the most important theoretical contribution could be concluded as the proposed logical and empirically authenticated association between PUHIMS, PEUHIMS, EAE and IWB in the hotel industry's perspective. Through this work, we can now put forward the essential factors in hotel operations that future researchers can use as a spring board for further studies on IWB in differing contexts.

### 5.4 Limitations and future research directions

First, given that data were collected using self-report questionnaires, the study may suffer from mono-method bias. Second, the study was carried out in one country, Uganda, which contextually may be different from other settings, making generalizability of results difficult. It is imperative that similar studies be carried out in other contexts to take into account the effect of those different organizations and environments. Third, studying relatively larger samples from different vocations and careers rather than hospitality might present a cornerstone for more healthy results that aid managers to champion innovative behaviors among their employees. Lastly, IWB is a very complex and interesting concept affected by a myriad of factors. Like any other model, the proposed framework is far from being exhaustive and other antecedents may be identified and examined in future studies to provide in-depth and incremental understanding of IWB as a concept in organizational research. Conceptually, it could also be valuable for future research to consider whether negative work tendencies such as job withdrawal could be incorporated into the behavioral engagement concept. Regardless of how engagement is defined and measured in future research, it may help to have clearly distinct measures for behavioral engagement and attitudinal engagement. Notwithstanding probable limitations, the study offers precious insights into the association between PUHIMS, PEUHIMS and IWB, with attitudinal engagement as a conduit, more so in hospitality firms from a developing country's perspective.

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